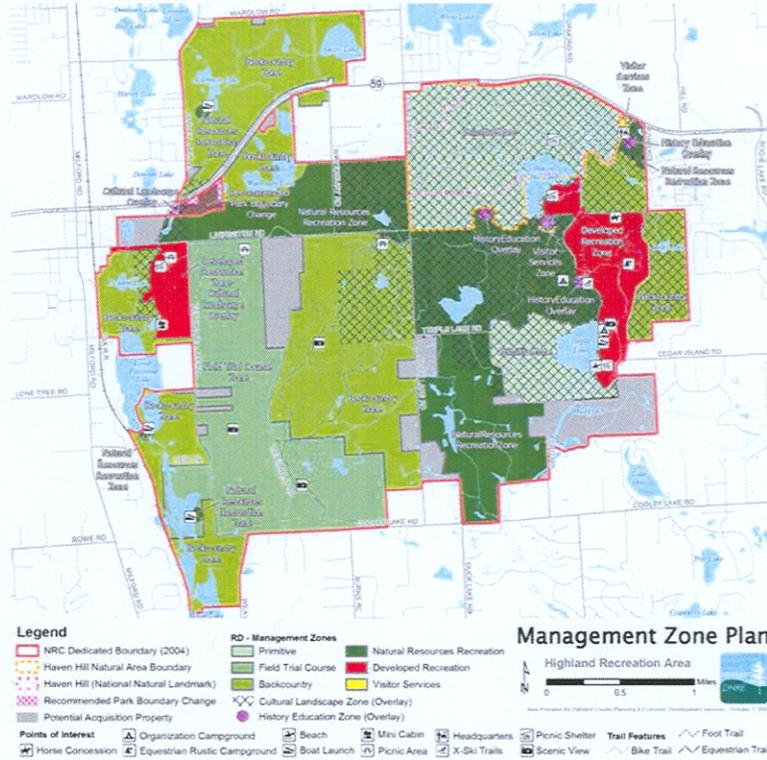


General Management Plan

Long-range management guidance focused on the specific natural resources, historic-cultural resources, recreation opportunities and the education-interpretation opportunities of...

Highland Recreation Area



This project was directed by Paul N. Curtis, Management Plan Administrator, Department of Natural Resources, Parks and Recreation Division; with assistance from Elizabeth J. Corwin of Highland Township; and from Larry Falardeau and Ryan Divdock of Oakland County Planning and Economic Development Services.



PLAN APPROVALS:

Paul N. Curtis
 Chief, Parks and Recreation Division

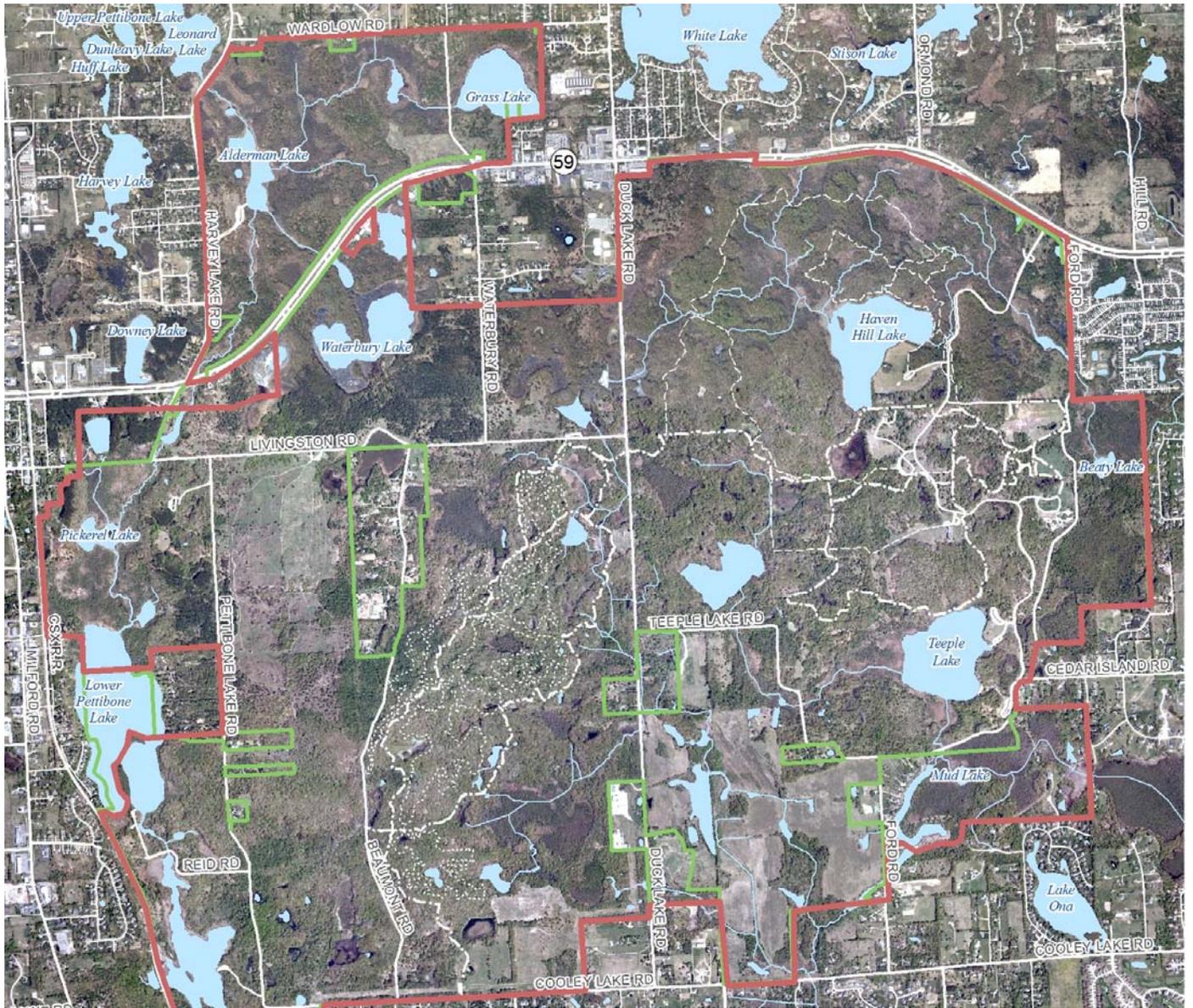
4/12/11
 Date

Nancy Koch
 Deputy Director, Natural Resources

4/13/11
 Date

Robert A. Stefan
 Director, Department of Natural Resources

4/14/11
 Date



Aerial Photography (2008)

Legend

- NRC Dedicated Boundary (2004)
- Current Park Ownership

Highland Recreation Area



Map Provided By Oakland County Planning & Economic Development Services - October 1, 2009

RESOLUTION NO. 04-2011-01

MICHIGAN STATE PARKS ADVISORY COMMITTEE (MSPAC)

**RESOLUTION TO RECOMMEND APPROVAL OF THE
“HIGHLAND RECREATION AREA - PHASE 1 - GENERAL MANAGEMENT PLAN”**

ADOPTED: April 7, 2011

WHEREAS, the Department of Natural Resources (DNR) Parks and Recreation Division has completed Phase 1 of the General Management Plan for the Highland Recreation Area; and

WHEREAS, the planning process reflects sensitivity to the natural resources, historic and cultural resource values, recreation and education opportunities, is inclusive of all DNR resource programs and representative of eco-management; and

WHEREAS, the planning process was inclusive of stakeholder, constituent, and public input; and

WHEREAS, the General Management Plan represents sound guidance for future planning phases that will be consistent with the mission of the DNR and the Parks and Recreation Division, and reflective of the purpose and significance of the Highland Recreation Area; and

WHEREAS, the General Management Plan has been reviewed and recommended for approval by the Parks and Recreation Division’s Management Team and the Operations and Stewardship Subcommittee of the Michigan State Parks Advisory Committee (MSPAC).

THEREFORE, BE IT RESOLVED, that the MSPAC recommends approval of the Highland Recreation Area - Phase 1 - General Management Plan, as adopted at their April 7, 2011, meeting; and

THEREFORE, BE IT FURTHER RESOLVED, that the MSPAC further recommends that the DNR Director approve the Phase 1 – General Management Plan for the Highland Recreation Area; and

THEREFORE, BE IT FINALLY RESOLVED, that upon the DNR Director’s approval, the DNR Parks and Recreation Division initiate the Phase II – Long Range Action Plan for Highland Recreation Area.

Submitted by: MSPAC Operations and Stewardship Subcommittee

Motioned by:	Chris Graham, Subcommittee Chair	Yeas:	9
Seconded by:	Mike Foote	Nays:	0
		Abstained:	0
		Absent:	6

This Resolution was adopted by the Michigan State Parks Advisory Committee at their April 7, 2011, meeting as Resolution No. 04-2011-01.

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EXECUTIVE SUMMARY

Management Planning is a defined strategic process within the PRD Strategic Plan (2009), reflecting the following Goals and Objectives:

- Goal 1, Objective 1.2: “Strengthen, update and implement Management Plans.”
- Goal 3, Objective 3.1: “Perform landscape level assessment of recreation opportunities in decision making.”
- Goal 8, Objective 8.1: “Continue to use the CCMSP (Citizen’s Committee for Michigan State Parks), MSWC(Michigan State Waterways Commission), NRC (Natural Resources Commission), SWC (Statewide Council), and Ecoregion Teams and partners to advise in PRD planning, policy development and issue resolution.”

“Management Planning”, a comprehensive resource based process, is the Parks and Recreation Division’s (PRD) adaptation of National Park Service planning methodology. In this process we focus our attention on the four principles of the PRD Mission Statement. To that end, we thoroughly inventory the (1) natural resource values of the park, establish its (2) historic/cultural resources, identify the (3) recreational opportunities, and develop the (4) educational and interpretation opportunities of the park. This plan provides guidance for management of park lands and development of recreational facilities, consistent with the PRD mission statement.

In addition to providing a summary of natural, cultural, recreational, and educational resources located within the Highland Recreation Area (HRA), it also locates HRA in its regional context, in terms of economics, other park resources, and local demographics.

With this base of knowledge and with input of the “Planning Team” (made up of Department resource staff, Highland Township staff, stakeholders, and public), we established an ‘identity’ for the park. This identity is articulated through purpose and significance statements. Highland Recreation Area was established for the purpose of providing a wide opportunity of recreational opportunities to a highly populated area of the state, while preserving and protecting a unique natural resource base, including the Highland Haven designated Natural Area. A further purpose and significance of the park is to preserve and protect the unique cultural and historic resources associated with the Ford family’s use of the land, which is evidenced in the original gatehouse, foundation of the burned out family mansion, sheep barn and caretaker’s house. HRA is significant due to its importance as a regional hub for green infrastructure in Oakland County and its linkage to miles of park land, open

space and trails throughout Oakland County. HRA is also a Natural Resource Commission (NRC) designated grounds for field trials, providing a unique opportunity for training and competition for field dog breeds.

In concert with this effort of establishing an identity for this park, the Planning Team also developed a Management Zone Plan for the park. From a palette of nine standard zones, we utilized seven and established an additional non-standard zone (Field Trial Course Zone) to address the field trial area and use of the park.

The Management Zone Plan is found on page 26, and a thorough review of all zones accompanies that graphic. A condensed review of all the zones applied at Highland RA is as follows: (note: acreages provided are approximate.)

Primitive Zone – The Haven Hill Natural Area and a large area west and south of Teeple Lake comprise 992 acres (17% of the park). The Haven Hill Natural Area (721 acres) represents all of southern Michigan’s principal forest types, and has remained undisturbed for the past 75 years. The Teeple Lake area (271 acres) represents prairie fen and southern wet meadow communities. Recreation use is limited to foot traffic only (no bicycle or equestrian use allowed), with developed foot trails found in the Haven Hill Natural Area. No designated trails currently exist in the Teeple Lake area.

Backcountry Zone – Totalling 2,285 acres (38% of the park), this largest of all zones is identified in four locations. These areas are ‘natural’ in character and suited for low to moderate density trail use, including bicycle and equestrian. The majority of all current trails in the park are found in this zone. The watercourses along the west park boundary are within this zone, and canoe/kayak use could be expanded.

Field Trial Course Zone – 929 acres of the park (15%) are a Natural Resources Commission (NRC) designated Field Trial Course. Field trial courses are managed for large contiguous open fields where the dogs can run to “objectives” for purposes of flushing target birds that have been set by the field trailers. Fields are managed as open grassland, interrupted by widely scattered and clumped oak trees and thin woods.

Field trialing is not an exclusive use. However, during the active times of the year for field trials (April-June and August-November), the experience of other users will be tempered by any field trial activities that may be taking place.

Natural Resource Recreation Zone – This is the second largest zone with 1358 acres (23% of the park). This zone is utilized for active recreation, including hunting, fishing, trapping, birding, snowmobiling (only in designated areas), and trail usage (biking, hiking, equestrian, cross-country skiing, etc.)

There is still an emphasis on resource quality over recreation, but in this zone, higher levels of use are allowed.

Developed Recreation Zone – Two primary areas total 383 acres (6% of the park). The largest of the two runs from Haven Hill Lake down to Teeple Lake, and takes in the current developed recreation components of the park, including day-use, campground, and horse concession areas. The second area with this zone designation is the Dodge Brothers #10 area of the park, near the west boundary. These areas are prescribed for high use.

The stakeholder groups identified a need for additional camping within the park. The Planning Team supports evaluation of overnight camping opportunities at Teeple Lake and at Dodge #10. The evaluation should also consider the costs and benefits of separating equestrian campers from other campers.

The areas along Livingston Road on the west edge of the park provide ties to the adjacent communities. An enhanced park entrance at this location should be considered, designed in keeping with the heritage of the adjacent Highland Station.

Visitor Services Zone – At two locations in the park totaling 12 acres (0.2%), this zone encompasses the developed areas required for program administration and operations. Typically, it will include offices, contact stations, maintenance facilities and all related land base required to conduct the business of operating a state park or recreation area.

History Education Zone (Overlay) – This zone is mapped only as an overlay across four locations within the Natural Resources Recreation Zone: The Haven Hill Lodge, the original gatehouse, the maintenance complex and the historic sheep barn. Each of these locations is significant due to its prominence in the Ford family story.

This overlay zone recognizes unique opportunities to engage the visitor in a compelling story of our past. In managing these assets, the park staff should be sensitive to the prescribed values of the overlay as well the underlying zones.

Cultural Landscape Zone (Overlay) – This overlay zone reflects the land ownerships of the Ford family and the Dodge Brothers, as well as remnants of the early Spring Mills settlement. The purpose of this zone is to acknowledge the heritage of these past land owners and to respect that cultural impact still evident in the park.

INTRODUCTION

PLANNING PROCESS OVERVIEW

The Management Planning Process develops a series of planning steps, each built upon the previous, that keep all planning and action decisions focused on (1) the mission of the Parks and Recreation Division, and (2) the specific Purpose and Significance of the park.

There are four phases of planning, implemented in the following order:

- **Phase 1** – General Management Plan (GMP) – Long range (20 year) goals
- **Phase 2** – Long-Range Action Plan – Long range (10 year) goals to attain the GMP objectives (requires review of Phase 1)
- **Phase 3** – 5-Year Implementation Plan – specific actions to implement (requires review of Phase 1 and Phase 2)
- **Phase 4** – Annual Plan and Progress Report – what will be done this year and what progress was made on last year’s plan.

This is the **General Management Plan**, the first step in our planning process. In this phase of planning, we are defining what the park will look like in twenty years. What will be the condition of flora and fauna? How will we address historic and cultural resources? What recreational opportunities will be provided? What education and interpretation efforts will meet the visitor? What will guide the manager’s operational decisions? What will be the visitor’s overall experience?

A key tool of this plan is the identification of “Management Zones” which define specific characteristics of the land, addressing management for:

- Natural features
- Historic/cultural features
- Education/interpretation opportunities
- Recreational opportunities

These four elements represent the primary goals of the PRD Mission Statement, and provide guidance for both planning and management decisions. Within the parameters of this guidance, “Purpose” and “Significance” statements are developed for the park that establishes its unique identity and focus. No two parks are the same and this emphasis is directed at ensuring that the differences found from park to park are acknowledged, highlighted and celebrated.

PLANNING OBJECTIVES

The objective of this General Management Plan is to bring together Department staff, impacted and impacting stakeholders, and the public who use the park in a planning process that will defined and clarify the unique “Purpose” and “Significance” of Highland State Recreation Area. Collectively, we will reinforce those attributes in the planning and management decisions that impact the park through the implementation of the Management Zone Plan. Future action plans, whether focused on a development proposal, a resource improvement initiative, an interpretive program, or day-to-day management of the park will be guided by the General Management Plan.

PLANNING TEAM

Accomplishment of our planning objectives was and is dependent upon the valuable input provided by all members of the “Planning Team”. The following persons were participants in the planning process:

DNR Staff

Paul N. Curtis	PRD, Management Plan Administrator
Ray Fahlsing	PRD, Stewardship Program Manager
Paul Yauk	PRD, Lands Program Manager
Luba Sitar	PRD, Pontiac Distric Supervisor
Kristen Bennett	PRD, Pontiac & Bay City Districts Planner
Bill Althoff	PRD, Highland RA Manager
Jeff Braunscheidel	FD, Fisheries Biologist
Sgt. Art Green	LED, Conservation Officer
Julie Oakes	WD, Wildlife Biologist
Earl Cole	FMD, Fire Officer
Janet Canode	METD, Education Unit Manager – South MI
Earl Wolf	METD, Senior Interpreter
Rob Corbett	OLAF, Lands
Mark MacKay	SLP & WD, Southern Ecoteam and Wildlife Division Planner

Local Planning Partners

Patricia Pilchowski	Highland Township, Township Supervisor
Elizabeth Corwin	Highland Township, Planning Director
Jennifer Frederick	Highland Township, Planner
Larry Falardeau	Oakland County Planning & Economic Development Services (OCPEDS), Principal Planner
Ryan Dividock	OCPEDS, Associate Planner/GIS

Stakeholder Representatives

Eugene H. Beach, Jr.	Highland Twp. Historical Society
Pam Sienkiewicz	Friends of Highland Recreation Area (FOHRA)
Robert Hoffmeyer	Highland Field Trial Grounds Association (HFTGA)
Bob Spleet	Michigan Mountain Bike Association (MMBA)
Jeff Muck	Huron Valley Schools (Rec/Ed)

Stakeholder Representatives (Cont.)

Paula Weaver	Highland Equestrian Conservancy (HEC), Michigan Trail Riders Association (MTRA), Highland Trail Riders Association (HTRA)
Sharon Greene	Highland Downtown Development Authority (HDDA), FOHRA, HEC
Dick Russell	Boy Scouts of America/Canton Valley Council (BSA), FOHRA
Caryn Robinson	White Lake Township Parks & Recreation
Jason R. Iacoangeli	White Lake Township Planning Department
Jim Lloyd	Six Rivers Regional Land Conservancy (SRRLC), Highland Conservancy
Patricia Hamlin	Highland Township Parks Committee, Highland Township Planning Commission
Jack Gillies	HTRA
Jane Brown	HTRA
Dorothy Kane	Huron Valley Council for the Arts (HVCA)
Roscoe Smith	HDDA
Leah Ohmer	HVCA
John Gonway	MMBA

CORE VALUES

Guidance for the General Management Plan stems from the mission statements of the department and the division, and the *purpose and significance statements* that have evolved through the planning process. The core values found in these statements must be reflected in this long-range General Management Plan for Highland Recreation Area and subsequently reflected in any shorter range action plans:

DEPARTMENT OF NATURAL RESOURCES MISSION STATEMENT

“The Department of Natural Resources is committed to the conservation, protection, management, and accessible use and enjoyment of the state’s environment, natural resources, and related economic interests for current and future generations.”

PARKS AND RECREATION DIVISION MISSION STATEMENT

“The Parks and Recreation Division’s Mission is to acquire, protect, and preserve the natural and cultural features of Michigan’s unique resources, and to provide access to land and water based public recreation and educational opportunities.”

The core values derived from these statements are the Parks and Recreation Division will acquire, preserve, and protect:

- Natural resources
- Cultural resources
- Provide public recreation
- Provide educational opportunities

PARK PURPOSE

Highland Recreation Area (HRA) is an integral part of the state park system. It is important as a home for wildlife and aquatic species, its role in a diverse local ecosystem, and for its recreational opportunities for people. Park purpose statements are based on park legislation, legislative history, special designations and DNR policy. HRA is designated as a *State Recreation Area*. Recreation areas are defined as large areas convenient to centers of dense population, with a diversity of intensive and extensive recreation, as well as a diversity of natural features and natural beauty. Recreation Areas specifically allow hunting unless closed to that activity by the Director. The following statements reaffirm the reasons why HRA is part of the state park system:

- A special legislative mandate, Section 3, Act 17, Public Acts 1921, authorized the establishment of state parks and state recreation areas in Michigan
- A special session of the Legislature in 1944 appropriated \$4,000,000 to begin acquisition of lands in southeast Michigan for state park and recreation areas.
- To preserve and protect the park's unique natural resources for current and future generations, particularly the Haven Hill wetlands and forest complex, a designated "Natural Area".
- To preserve and protect the park's historic and cultural resources for current and future generations
- To provide educational and interpretive opportunities to the public that reflect the mission of DNR.
- To provide opportunities for recreational uses and experiences that are compatible with the park's resource base
- To provide experiences and opportunities for recreational uses, including mountain biking, horseback riding, hunting, field dog trial competition, hiking, fishing, swimming, and camping to a large urban population

PARK SIGNIFICANCE

Highland Recreation Area contains many significant elements of Michigan's natural and cultural heritage. Its unique features allow park management to achieve park purposes. Park significance statements capture the essence of the park's importance to our state's natural and cultural heritage. These statements describe the distinctiveness of HRA. Understanding these distinctions help managers make decisions that preserve the resources and reflect the values necessary to accomplish the park's purpose:

- Provides large tracts of unfragmented resources, including prairie, woodland, wetlands, a riparian corridor, a variety of water resources as well as many *potential natural areas*, as defined by MNFI^{1,2}.
- Includes the Haven Hill wetlands and forest complex, which is a National Natural Landmark, a Natural Resources Commission

¹ Michigan Natural Features Inventory. *Oakland County Potential Conservation/Natural Areas Report*. 2004

² *Shiawassee & Huron Headwaters Resource Preservation Project*, March 2000

designated natural area, and a State Natural Area. (originally designated in 1952 and re-designated in 1972 under the Wilderness and Natural Areas Act)

- Includes several unique historical and cultural resources, including the foundation of the burned out Ford mansion (lodge), a unique sheep barn, and the original gate house. These structures, and others, are highly deteriorated due to damage from vandalism and the effects of age and weather.
- Offers a prime location for protection of endangered, threatened, and special concern plants and animals due to its large area of undeveloped land
- Gives a home to a wide variety of wildlife and provides great opportunities for viewing of wildlife
- Affords year round park activity to the most populated region in the state, Southeast Michigan
- Serves as an important regional hub for green infrastructure in Oakland County, linking miles of park land, open space, and trails throughout Southeast Michigan
- Supplies public access to a large area for hunting
- HRA is a Natural Resources Commission (NRC) designated grounds for field trials, providing a unique opportunity for training and competition for field dog breeds.
- Adds more than \$2.5 million to the local economy in direct spending.

LEGAL MANDATES

For all park General Management Plans, all legal mandates will be identified and will serve to further guide the development of the General Management Plan and subsequent Action Plans. For our planning purposes, the term *legal mandates* refers not only to state law, but also the administrative tools of *policy* and *directive* of the Natural Resource Commission, the Department, and Parks and Recreation Division. Specific to Highland Recreation Area, the following legal mandates have been identified:

[PA 451 OF 1994, PART 741](#)

[STATE PARK SYSTEM, NATURAL RESOURCE AND ENVIRONMENTAL PROTECTION ACT \(NREPA\)](#)

This act is a recodification of law that established the Michigan State Park System and defined its powers and duties. Notable in this law is the Section [324.74102](#), which identifies the duties of the department and reinforces those core values cited above.

This section reads:

- (1) "The legislature finds:
 - (a) Michigan State Parks preserve and protect Michigan's significant natural and historic resources.
 - (b) Michigan State Parks are appropriate and uniquely suited to provide opportunities to learn about protection and management of Michigan's natural resources.
 - (c) Michigan State Parks are an important component of Michigan's tourism industry and vital to local economies.

- (2) The department shall create, maintain, operate, promote, and make available for public use and enjoyment a system of state parks to preserve and protect Michigan's significant natural resources and areas of natural beauty or historic significance, to provide open space for public recreation, and to provide an opportunity to understand Michigan's natural resources and need to protect and manage those resources."

Within this law, 324.74101 (e), "state park" means a *state park* or *state recreation area* designated by the director.

[PA 57 of 1995 \(addition to NREPA\)](#)

DEDICATION OF FIELD TRIAL COURSES – There are 929 acres designated as the Highland Field Trials Area (HFTA) by the Natural Resources Commission under the authority of NREPA (section 324.42104 of the MCL) This land is dedicated for training, trialing and hunting with field dogs, and is under active stewardship through agreement with user groups to restore native ecosystems and wildlife habitat. The area is used for dog training, hiking, hunting, and other general recreation.

[PA 451 OF 1994, PART 351](#)

NREPA - WILDERNESS AND NATURAL AREAS

DEDICATION OF HIGHLAND HAVEN NATURAL AREA – 721 acres of the HRA are designated as State Natural Area under part 351 of NREPA of 1994. This legislation provides guidelines for the identification, management and protection of Wilderness, Wild and Natural Areas. The legislation prohibits most cutting, gathering or other alteration of vegetation, extraction of minerals,

establishment of commercial uses and easements, and most use of motorized vehicles.

[49 Stat. 666; 16 U.S.C. sections 461-467](#)

HISTORIC SITES ACT OF 1932

FEDERAL REGISTRATION OF HAVEN HILL AS A NATIONAL NATURAL LANDMARK - Haven Hill was registered with the National Park Service in 1976 as a National Natural Landmark. This is a voluntary program, in which areas of high environmental significance are nominated for recognition. The designation is meant to raise public awareness and encourage conservation of areas important to understanding our natural history. It does not restrict specific activities within the designated area.

[PA 451 of 1994, PART 315](#)

NREPA – DAM SAFETY

The Department of Natural Resources is authorized to monitor dams over six feet high, or those resulting in five acre or greater impoundment after a 100 year design storm and further to review and permit construction or modification of such dams. The regulations require periodic inspection and reporting (every 3 to 5 years dependent upon the assigned dam hazard classification) to assess the dam's condition, capacity and structural integrity. Such inspections may be made visually by DNR dam safety staff upon request; however a formal analysis by a professional engineer may be required. The Haven Hill dam is covered under the dam safety program.

[PA 451 of 1994, PART 115](#)

NREPA – SOLID WASTE MANAGEMENT

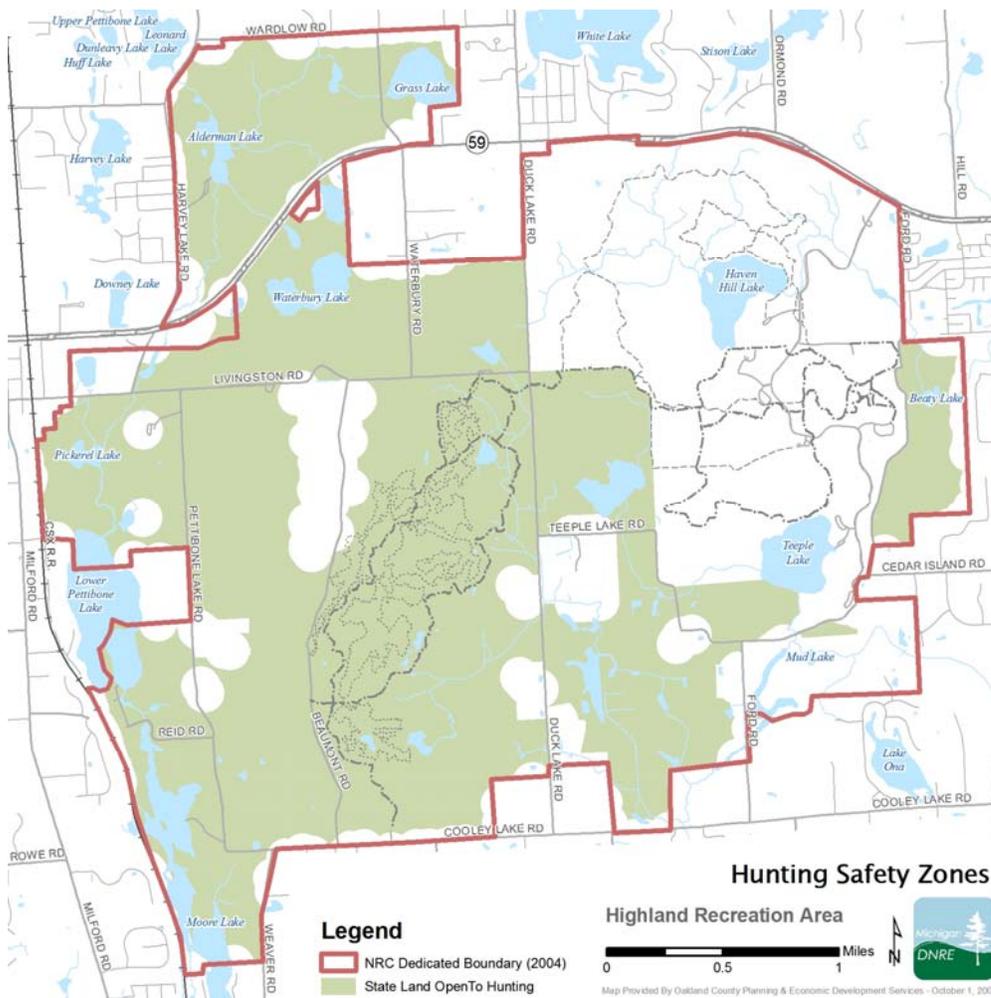
The lease area south of Teeple Lake Road which serves the needs of the remote control flying club was once a licensed landfill. As the site is currently utilized, the status as closed landfill has not created any special management issues. Any plans to intensify the use or for construction in the area should consider rules and regulations under the jurisdiction of the Solid Waste Management Division of the DNR.

[PA 368 of 1978, ARTICLE 12 --ENVIRONMENTAL HEALTH, PART 125 – CAMPGROUNDS](#)

-- Part 125 of the Public Health Code was established to protect and promote the public health by establishing health code requirements specifically addressing campgrounds. The DNR Drinking Water and Radiological Protection Division is the administering agency that is responsible for the promulgation of the Administrative Rules for Campgrounds.

All public (including DNR) and private campgrounds must meet these DNR regulations.

[PA 451 of 1994, NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT \(EXCERPT\) -- 324.41901 Regulation and prohibitions in certain areas; powers of department; area closures; hearings, investigations, studies, and statement of facts; regulations.](#) -- This part of PA 451 establishes the powers of the Department to establish safety zones for hunting. In accordance with the Administrative Rules established by Wildlife Division for hunting safety, a 450 foot "Safety Zone" is established around all occupied dwellings (which includes campgrounds). Under the State Land Rules, the Department also has the authority to expand the application of this 450 foot "Safety Zone" to encompass "Day Use Areas" such as beaches, picnic areas, boat launches and trail head parking areas, should the need arise. This is determined on a case-by-case basis. At Highland Recreation Area, the Hunting Safety Zones are represented below:

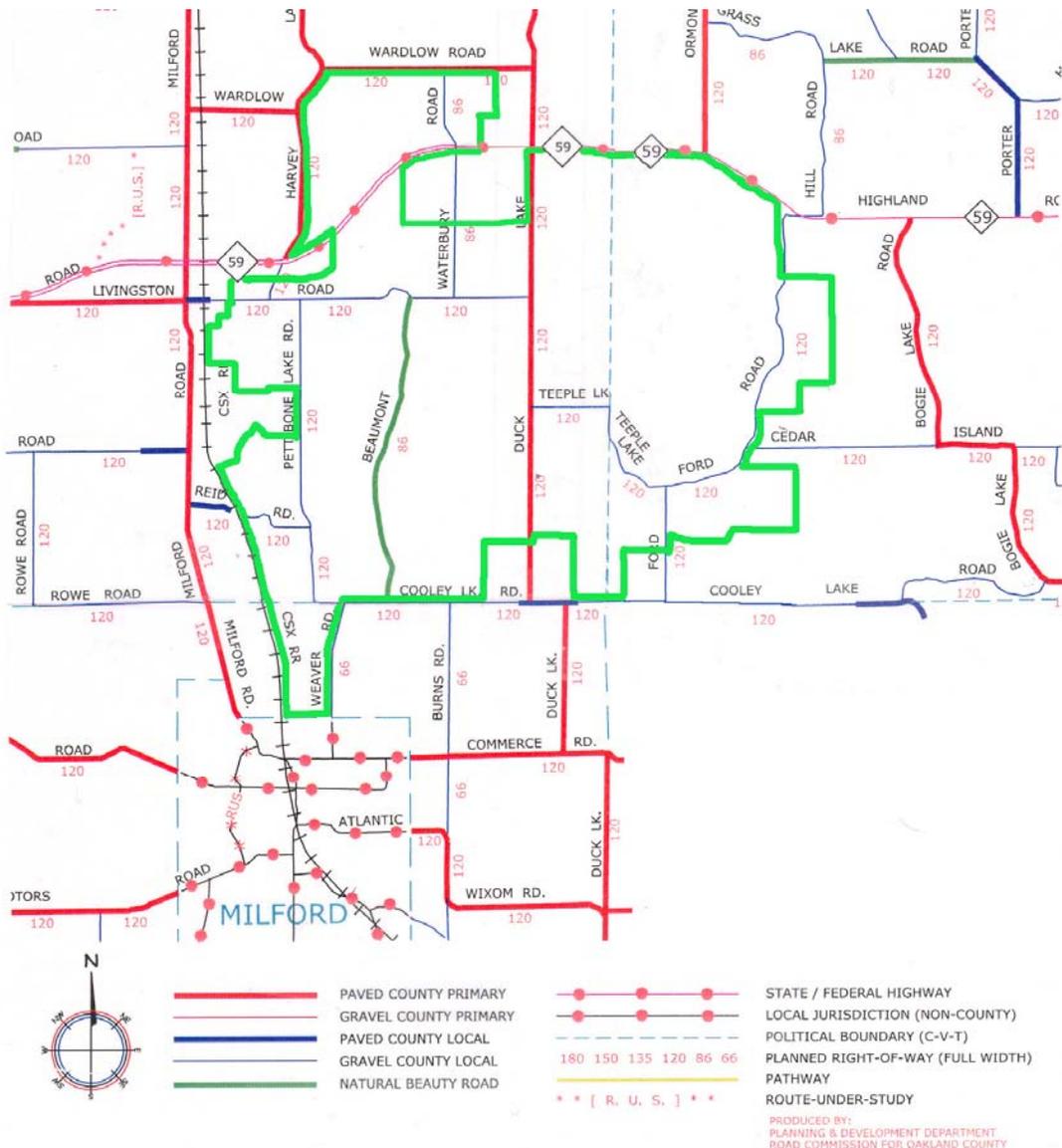


R.O.W. FOR M-59, HIGHLAND ROAD – The Right-of-Way for M-59 (Highland Road) is the only state trunkline impacting Highland RA. The ROW width is variable, ranging from approximately 120 feet to over 200 feet. The cross-section of the road also varies from a four or five lane road to a four lane divided boulevard. Any work within the M-59 ROW requires a permit from the Michigan Department of Transportation, Oakland Transportation Service Center (MDOT-OTSC).

R.O.W. FOR COUNTY ROADS – There are numerous county roads bordering and traversing the Highland RA. The Road Commission for Oakland County (RCOC) maintains the county roads and has authority to require permits for any impacts to their ROW (i.e. crossings or new drives).

R.O.W. widths are typically 66 feet, although the RCOC Master R.O.W. Plan calls for greater widths (up to 120 foot wide for primary routes such as Duck Lake, Wardlow and Harvey Lake Roads). The RCOC has not proposed purchasing right-of-way and has not programmed any improvements for the County Roads within the Highland RA. DNR staff are currently in discussion with the RCOC regarding the possibility of closing Waterbury Road between M-59 and Wardlow Road.

MASTER RIGHT-OF-WAY PLAN FOR OAKLAND COUNTY ROADS



R.O.W. FOR CSX RAILROAD – The CSX Railroad runs north/south along the west edge of Highland RA, approximately paralleling Milford Road. Any work within the railroad R.O.W. is subject to a permit from CSX. The Railroad and MDOT have stated goals to close many at-grade crossings, including pedestrian crossings. The Reid Road crossing in Highland Township was closed in 1999.

R.O.W. AND EASEMENTS FOR UTILITIES

There are several rights-of-way and easements in HRA. The proliferation of utility easements makes the protection of natural resources more difficult. It also damages the aesthetics. Therefore, current management practices discourage them. The number of easements running through the park provides a challenge when considering any new development of infrastructure or stewardship efforts. Knowing what it is underground, overhead, and who holds rights to the land is crucial to the park's development. Ownership of land often is described as a bundle of sticks—one stick for mineral rights, one stick for trespass, one stick for ownership of buildings on the land, etc. In other words, there are numerous parties that hold rights to the land within HRA. There may be more easements than are known by the State of Michigan.

Many of the rights-of-way are located along roads and highways that run through or along the borders of the park. Some bisect the park and create natural boundaries. Most of the easements permit grantees to clear trees and vegetation within their easements. This has implications for stewardship efforts in the park. Also, it restricts what can be developed in the park. For example, buildings and structures cannot be placed on the easements.

Since HRA is an agglomeration of many parcels, individual parcels may contain specific easements or deed restrictions that are not identified here.

Known Easements at Highland Recreation Area

#	Description	DOC # **	Acres	Year Granted	Park Zones*	Township
1	Austin Field Pipe Line Co.	1445	N/A	1948		
2	Consumer Powers Co.	3519	0.28 A	1962		Highland
3	Consumer Powers Co.	6067	3.00 A	1980		Highland
4	The Detroit Edison Co.	1436	N/A	1947		Highland
5	The Detroit Edison Co.	1495	N/A	1948		White Lake
6	The Detroit Edison Co.	1544	N/A	1948		Highland
7	The Detroit Edison Co.	1752	N/A	1949		Highland
8	The Detroit Edison Co.	1775	N/A	1950		White Lake
9	The Detroit Edison Co.	2479	N/A	1954		Highland
10	The Detroit Edison Co.	2694	N/A	1956		White Lake
11	The Detroit Edison Co.	2543	N/A	1955		Highland
12	The Detroit Edison Co.	4558	N/A	1970		Highland
16	The Detroit Edison Co.	1240	N/A	1946		Highland
17	General Telephone Co.	2228	N/A	1952		Highland
18	General Telephone Co.	4502	N/A	1970		White Lake

Known Easements at Highland Recreation Area (cont)

#	Description	DOC # **	Acres	Year Granted	Park Zones*	Township
19	MDOT	4311	N/A	1968		Highland
21	MDOT	4544	N/A	1970		Highland
22	Michigan Telephone Associated	2071	N/A	1951		Highland
23	Michigan Telephone Associated	1811	N/A	1950		White Lake
24	Michigan Telephone Associated	1975	N/A	1951		White Lake
25	Michigan Consolidated Gas Co.	1998	N/A	1951		Milford
26	Michigan Consolidated Gas Co.	3122	N/A	1959		Milford
27	Michigan Consolidated Gas Co.	8282	N/A	1996		Highland
28	Wolverine Gas and Oil Company	7977	N/A	1996		Highland

Source: State of MI, Land Information System

*Park Zones are the

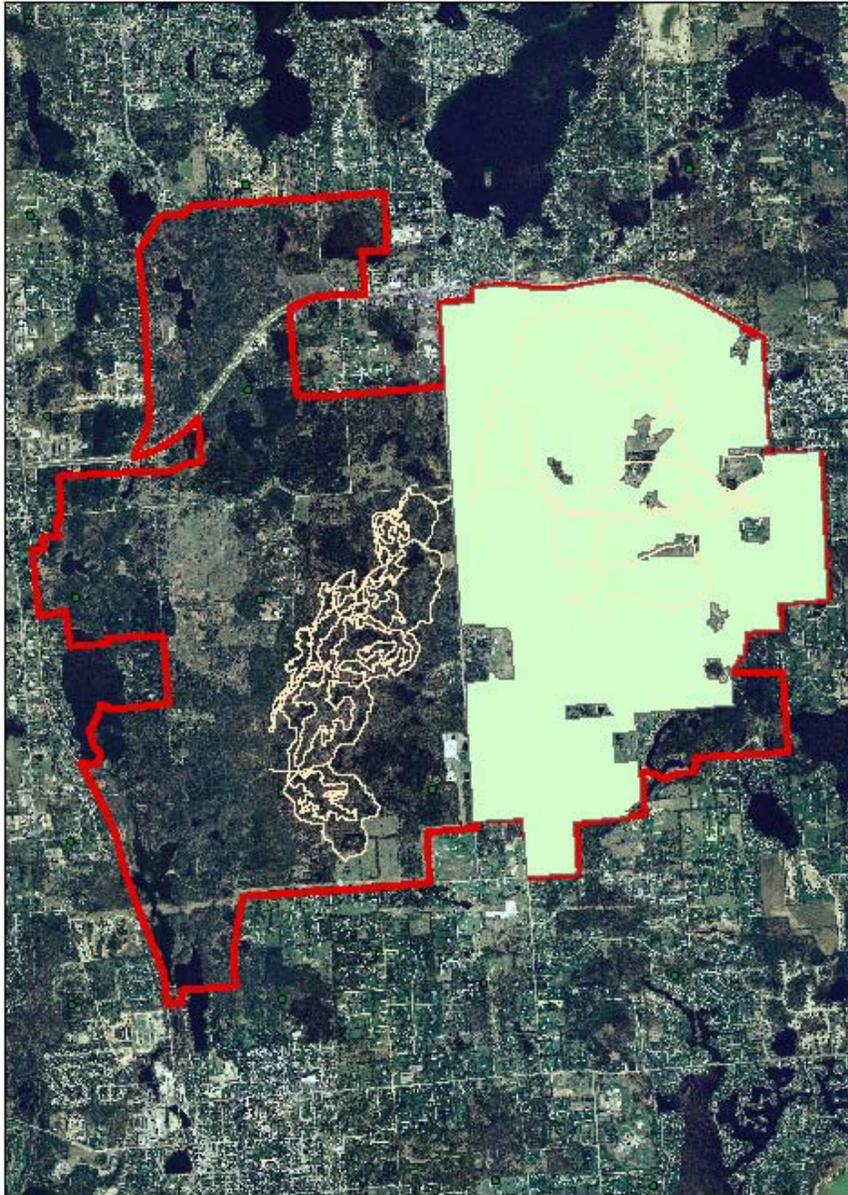
** The DOC # refers to its reference number through the State of MI Land Information System (Liber)

See the appendices for a map highlighting known easement locations.

STEWARDSHIP MANAGEMENT PLAN—The Stewardship program developed a management plan for the Field Trial areas, which was first drafted in January 2000, and later revised in April 2001. This document describes a program to restore the field trial areas to a high quality oak barren ecosystem, while accommodating continued use and enjoyment by field trial organizations. The Stewardship program has worked continually to implement the plan in conjunction with volunteers from the Highland Field Trial Grounds Association and others. The management plan program was considered in developing the zone description for the subject area.

EASTERN MASSASAUGA RATTLE SNAKE HABITAT MANAGEMENT – The Massasauga Rattle Snake has been identified as a Federal “candidate species” under the Endangered Species Act. The Department is currently developing a proposal for habitat management and is expected to enter a Candidate Conservation Agreement (CAA) with the U.S. Fish and Wildlife Service. The proposed management area covers much of the park east of Duck Lake Road, except for those areas most frequented by visitors such as the day use areas at Teeple Lake and Goose Meadows, the horse stable concession area, and the campgrounds.

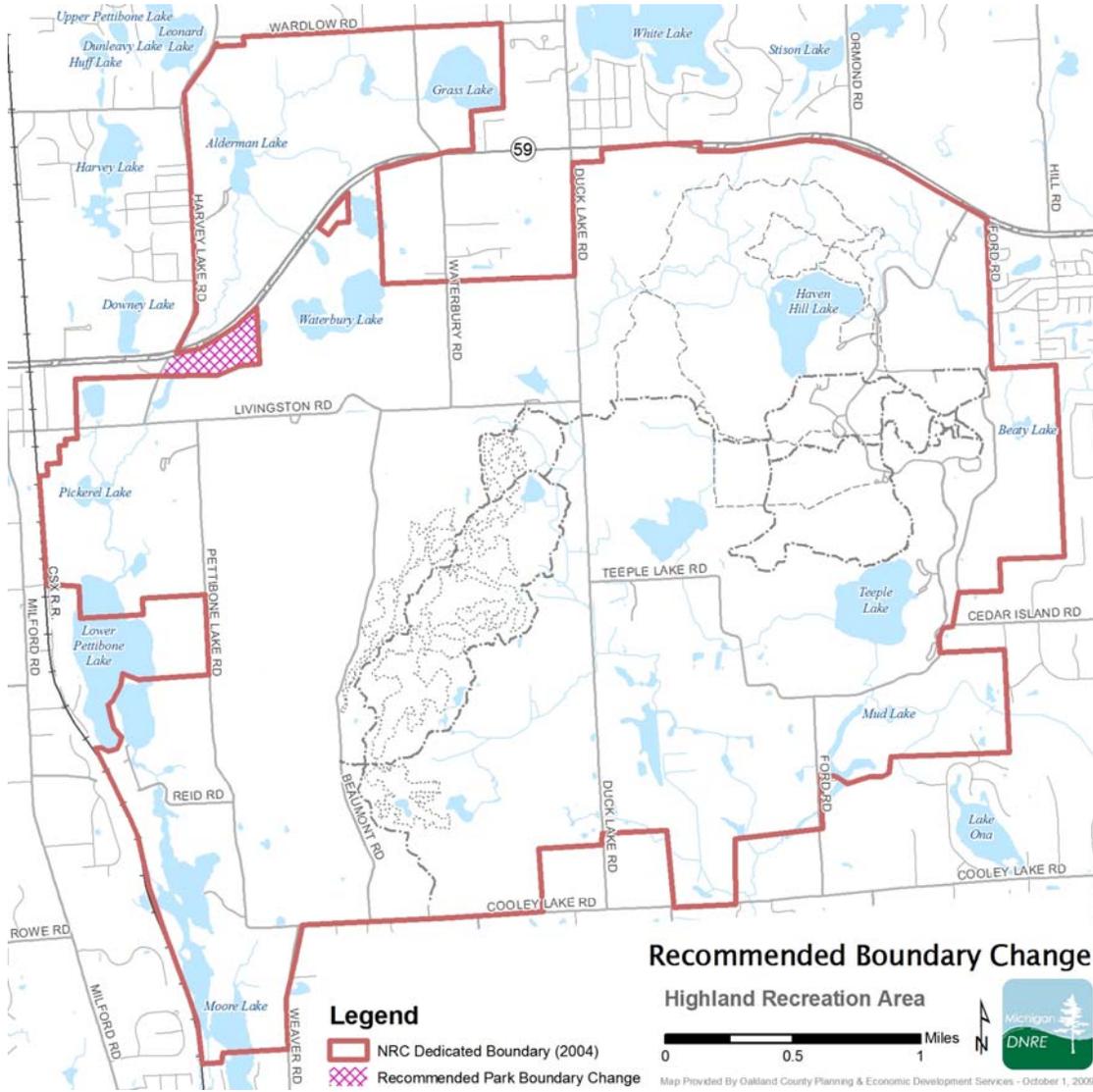
(DRAFT) EASTERN MASSASAUGA CCAA MANAGEMENT ZONE



NRC BOUNDARY—The current park boundary was approved by the NRC in May, 2004.

The Planning Team has reviewed the boundary designation and recommends that the boundary be altered to encompass a pocket of land near Pettibone

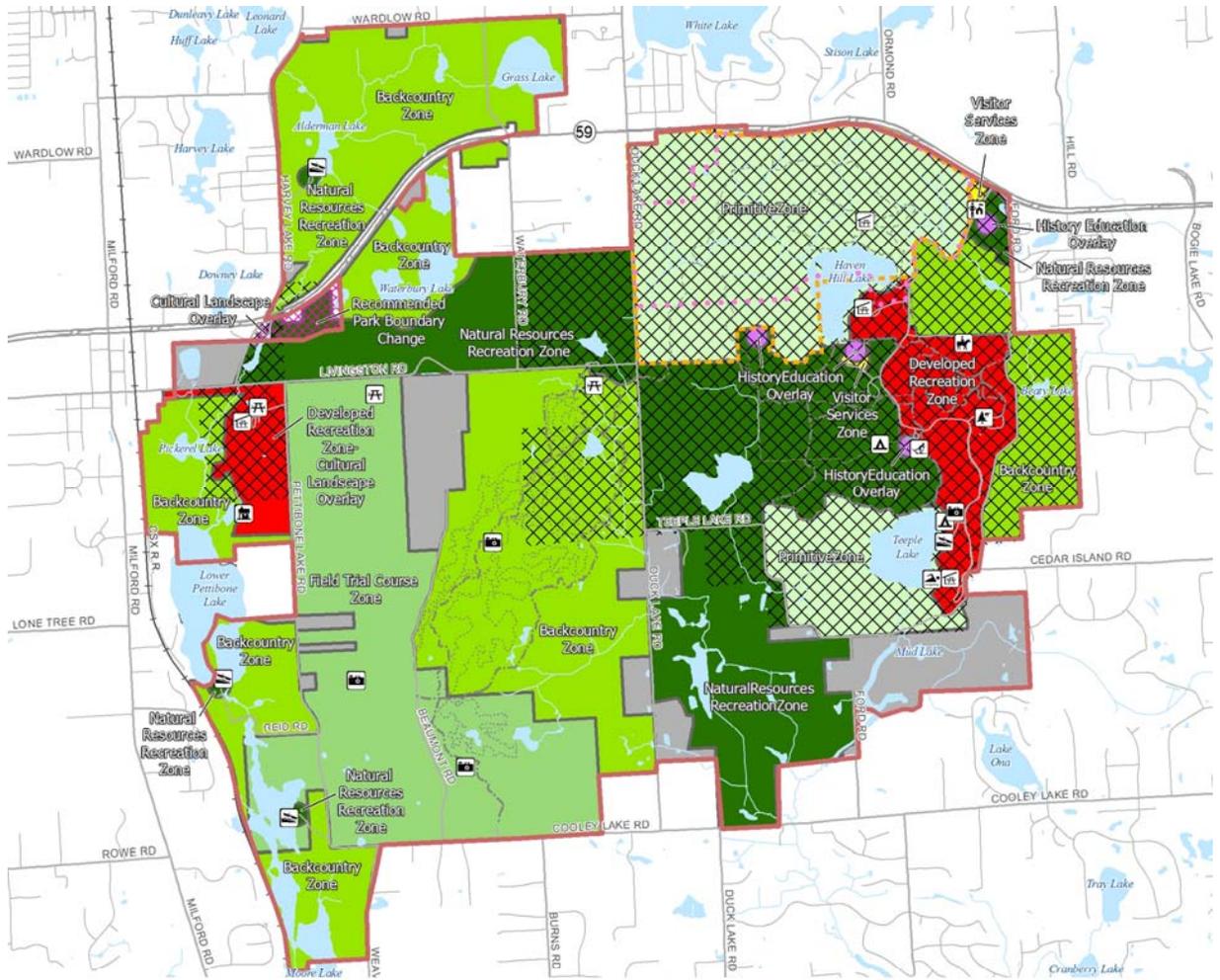
Creek that lies south of M-59, north of Livingston Road and east of Harvey Lake Road.



GENERAL MANAGEMENT PLAN

With the guidance of the Highland RA Planning Team (made up of Department Resource staff, planning partners from Highland Township and Oakland County, and the public), the park “Purpose and Significance” statements were drafted and adopted. These statements established an identity for the park that highlights its unique ecological importance due to the state and nationally designated Natural Area and the variety of unfragmented resources such as woodlands, prairies, wetlands and water resources; the significant historic and cultural assets which reflect the interaction of the Ford family and Dodge Brothers with the land; its importance as one of only two dedicated field dog trial areas in the state; its proximity to the most populated region of the state and its capacity to support a wide variety of year round recreational activities.

Based on this “identity” for the park, a “Management Zone Plan” was subsequently drafted and adopted with stakeholder and public support. The “Management Zone Definitions” apply to each zone designated on the map, with special considerations highlighted in the descriptive narratives of management guidance for each zone of the park.



Legend

- | | | |
|--|-----------------------------------|----------------------------------|
| NRC Dedicated Boundary (2004) | Primitive | Natural Resources Recreation |
| Haven Hill Natural Area Boundary | Field Trial Course | Developed Recreation |
| Haven Hill (National Natural Landmark) | Backcountry | Visitor Services |
| Recommended Park Boundary Change | Cultural Landscape Zone (Overlay) | History Education Zone (Overlay) |
| Potential Acquisition Property | | |

- | | | | | | | | |
|------------------------------|-------------------------|-------------|--------------|--------------|----------------|------------------|------------|
| Horse Concession | Organization Campground | Beach | Mini Cabin | Headquarters | Picnic Shelter | Trail Features | Foot Trail |
| Equestrian Rustic Campground | Boat Launch | Picnic Area | X-Ski Trails | Scenic View | Bike Trail | Equestrian Trail | |

Management Zone Plan

Highland Recreation Area

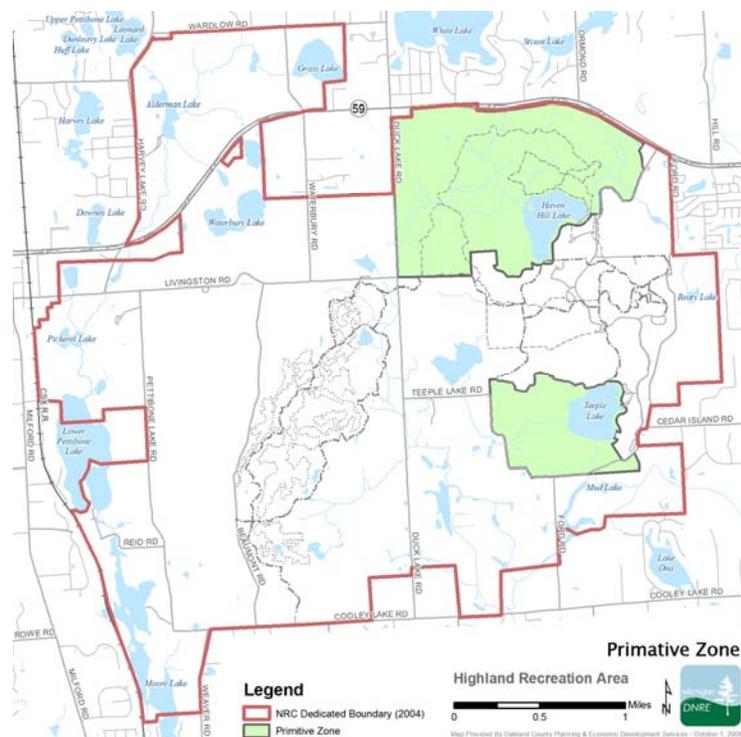
Map Provided By Oakland County Planning & Economic Development Services - October 1, 2009

PRIMITIVE ZONE

The primitive zone emphasizes the park's high quality natural resources, including the area designated as the Haven Hill Natural Area (with the exception of the Goose Meadows day use area) and a second area bounded by Teeple Lake Road on the west, Ford Road on the south, and Teeple Lake on the east. Together these areas comprise 992 acres, or approximately 17% of the park.

The Haven Hill Natural Area has all of southern Michigan's principal forest types within one small area, including swamp forest of tamarack, cedar, beech-maple forest, oak-hickory forest, and mixed hardwood forest. The area has remained largely undisturbed for the past 75 years and has retained its natural character as well as some unusual flora and fauna. The area around Teeple Lake also includes an example of a prairie fen and southern wet meadow.

Attaining and maintaining a high quality natural resource condition dictates the extent to which recreational improvements or uses are allowed. Under the Primitive Zone designation, only dispersed and low frequency use, such as foot traffic, will be allowed. No mountain bike or equestrian uses will be permitted.



Following are the prescribed qualities for the Primitive Zone:

Natural Resources --

This zone will reflect natural processes, with vegetative management only allowed to restore and maintain natural ecological structure and processes (such as removing invasive species like phragmites or prescribed burns), to address hazard trees, and to manage pests and disease.

Historic/Cultural Resources –The Haven Hill Lake dam was constructed by the Ford family to create an impoundment for fishing and other recreational activities.

Recreational Opportunities – Since the focus of this zone is to maintain and restore the high-quality natural systems, only low impact recreational opportunities such as hiking, birding and fishing will be allowed in the zone. Hunting is not allowed within the Haven Hill portion of this zone. Hunting is also prohibited southwest of Teeple Lake as identified in the Hunter Safety Zone map.

Within the zone there is a network of marked footpaths and a boardwalk through the wetlands. No equestrian or mountain bike trails will be allowed.

Education Opportunities – Haven Hills Natural Area is recognized as an excellent educational opportunity which is used by universities and international organizations. Educational kiosks and off-site educational materials could be developed. Specific planning recommendations for education and interpretation will require input from the Marketing, Education, and Technology Division.

Visitor Experience -- These areas will reflect a “natural” feel, a significant sense of solitude, and minimal man-made improvements.

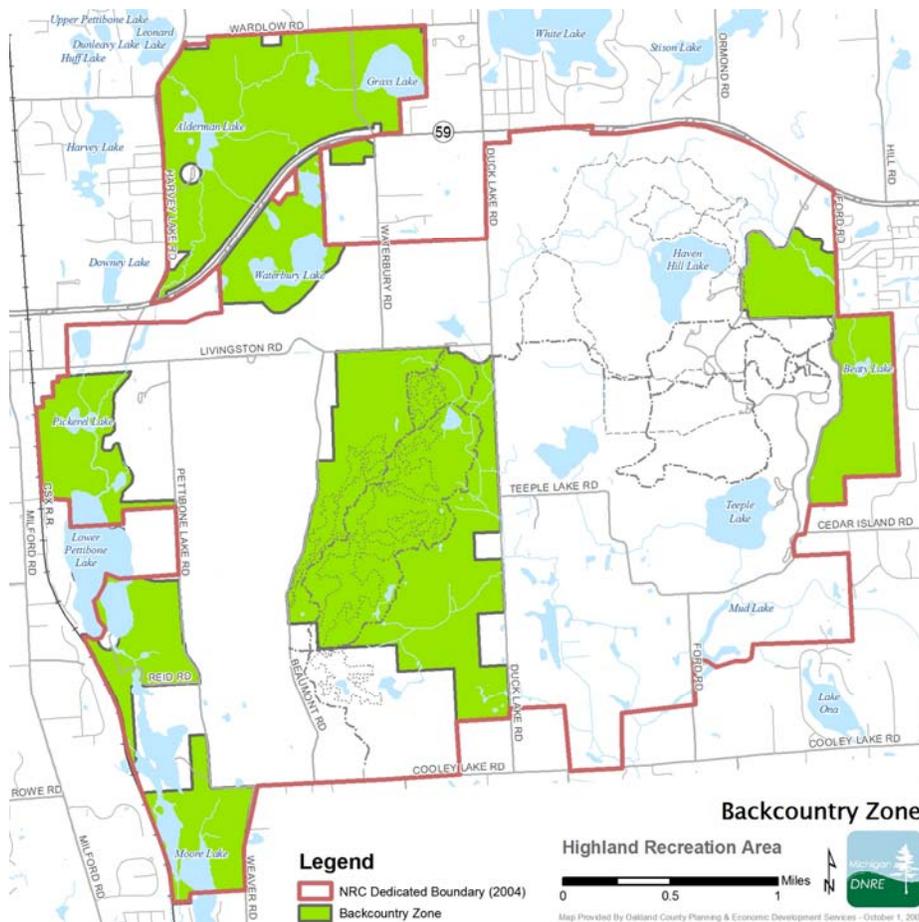
Management Focus -- Management of this zone will be focused on maintaining the low-impact character of these areas with an emphasis on natural resources quality. All activities must comply with the legal mandates and protections afforded through its designation as a National Natural Area, and as a state designated Natural Area.

Development – Only trail improvements (which can include boardwalks and/or overlooks), the existing dam and educational or interpretative signage provide evidence of man-made elements in this zone. Any improvements needed for resource protection, such as erosion control, shall be “natural” in character. The focus is to maintain as little evidence of human activity as possible. Any proposed development in the designated Haven Hills Natural Area must comply with the Natural Areas Act. All development must meet the approval requirements of the planning process.

BACKCOUNTRY ZONE

The Backcountry Zone is the largest zone mapped in Highland RA, totalling 2285 acres or 38% of the park. This zone is designated in four locations, including the northwest corner of the park (all area north of M-59 and some area south of M-59, west of Harvey Lake Road), much of the park south of Livingston Road from the railroad on the west side of the park to Duck Lake Road (except for the Field Dog Trial Areas and the Dodge 10 unit); and much of the park lying east of the main park road.

The character of this zone is natural, with minimal evidence of human impact. The Backcountry Zone allows for low density trail usage, including bicycle, and equestrian trails, and slight modifications of the landscape (e.g. trail development) to accommodate that use. The Backcountry zone also allows for recreational access to watercourses, particularly for non-motorized boats such as canoes and kayaks. The majority of established trails within the park are found in this zone.



Following are the prescribed qualities for the Backcountry Zone:

Natural Resources -- In general, the natural resources can be modified to support visitor activities, provided the modification does not interfere with other identified values or disrupt significant natural communities.

The hilly region off Beaumont Road contains a significant Southern Mesic Forest Natural Community as identified by MNFI. This area is criss-crossed by a network of mountain biking trails, including unauthorized trails worn down through repeated travel of the users. Soil erosion control should be a focus in this area. Non-native shrubs and trees will be controlled throughout the zone.

This zone will reflect natural processes, with vegetative management only allowed to restore and maintain natural ecological structure and processes (such as removing of invasive species), to address hazard trees, and to manage pests and disease.

Historic/Cultural Resources –

A good portion of this zone is overlaid by a Cultural Landscape Zone. Within and adjacent to this zone are the remains of the historic Village of Spring Mill, including a mill pond and raceway (M-59 near Harvey Lake Road), and areas where remnants of the Ford family occupation of the land can still be seen.

The recorded history of the area also suggests that American Indians may have frequently traveled along established trails within the current park boundary.

Any activity in this zone which requires earthwork must first be reviewed and approved by Stewardship to ensure that the project and methods are appropriate for the protection and preservation of any potential artifacts, foundations or the like.

Recreation Opportunities – This zone includes significant number of trails for bikers, hikers, and equestrians, and a water course that can be navigated by non-motorized boats. Boating access is available at Alderman Lake and Moore Lake. The zone also includes two popular rental cabins off Pettibone Lake Road which are available for an overnight or weekly stay.

Hunting, trapping and fishing is permitted throughout much of the backcountry zone.

Coordination will take place with various user groups, to minimize potential conflicts, particularly at boundaries between the Field Trial Course Zone and Backcountry Zone. Some rerouting of trails or new signage may be beneficial.

Education Opportunities – Information regarding the cultural past and natural communities can be made available at areas of congregation and fortified through educational opportunities in the Backcountry Zones. Informational kiosks are one good way to disseminate this information.

Signed kiosks may also be used to teach “proper etiquette” when encountering different trail users, such as what should a biker do when he encounters a horse and rider? The trails are multi-use and also interface with the field dog trial area.

Visitor Experience – While the environment in this zone will seem “natural” or “wild” for the greater part, the visitor can expect to encounter others enjoying the park in any season. Greater solitude may be found along the water courses, with higher concentrations of visitors found along the trail areas and along County maintained roads.

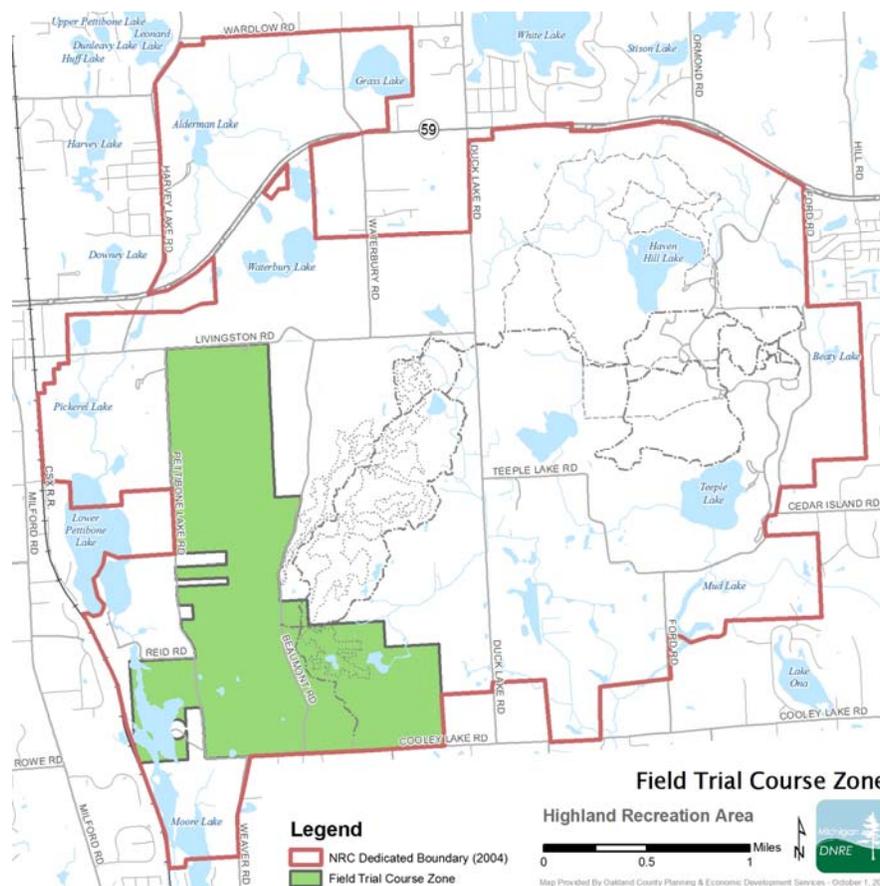
Management Focus –Management of this zone will be focused on the maintaining the low-impact character of these areas, with an emphasis on natural resource quality.

Development – Low level of development activity will focus on any identified restoration/preservation needs, accommodating visitor access to the features, particularly the waterbodies, meeting universal access standards, and educational/interpretation needs. All development will meet the approval requirements of the planning process.

FIELD TRIAL COURSE ZONE

The Field Trial Course Zone covers 929 acres or 15% of the park, lying east of Milford Road and south of Livingston Road. This is a specific (non-standard) zone that recognizes the NRC designation of the Highland RA for 'championship' field trial purposes. The Highland Field Trial Course Zone consists of three courses: The Silo Field Trial Area, with parking off Livingston Road; the Barn Field Trial Area with parking off Cooley Lake Road; and the Moore Lake Field Trial Area with access off Reid Road from Pettibone Lake Road.

The Field Trial Course Zone is under active stewardship through agreement with user groups to restore a high quality oak barrens ecosystem for field trialing. The zone carries with it specific uses, natural resources and visitor use management focus.



Following are the prescribed qualities for the Field Trial Course Zone:

Natural Resources -- Specific to this zone, a Stewardship Management Plan was developed by Parks and Recreation Division staff in 2000 with input from

the field trialers. In general, the premise of natural resource management in this zone is that it will meet the needs of field trialing.

Field trial courses are managed for large contiguous open fields where the dogs can run to “objectives” for purposes of flushing target birds that have been set by the field trialers. Fields are envisioned as open grassland, interrupted by widely scattered and clumped oak trees and thin woods. The vegetative cover of the fields will be managed in accordance with the Stewardship Management Plan” referenced above, which includes restoration through prescribed burns, seeding disturbed areas with native prairie seed mix and through other mechanical means.

Other Stewardship guidance for this zone includes:

- Control of invasive species such as autumn olive, honeysuckle, glossy buckthorn, garlic mustard, phragmites, purple loosestrife and various nonnative pines.
- Eco-system management that promotes the strengthening of native (natural) communities. As such, the habitat values for all endemic species will benefit.

Historic/Cultural Resources – Any activity in this zone which requires earthwork must first be reviewed and approved by Stewardship to ensure that the project and methods are appropriate for the protection and preservation of any potential artifacts, foundations or the like.

Recreation Opportunities – The primary use of this zone is for field trial activities, including the conduct of organized trials and dog training. This is not an exclusive use...the zone is also open for general recreation, including; hunting, fishing, trapping, birding, and trail use for hiking, cross-country skiing and equestrian use.

Coordination will take place with various user groups, to minimize potential conflicts, particularly at boundaries between the field dog trial area and backcountry zone. Some rerouting of trails or new signage may be beneficial.

Education Opportunities – Information regarding the use of the field trial area can be made available at areas of congregation and fortified through educational opportunities in this and in other zones. Informational kiosks are one good way to disseminate this information. The Field Trial parking lots are the staging location for field trial events. Informational kiosks at these location could benefit all.

Visitor Experience – There are two categories of visitor to this zone. One is the field trialer and those who come to watch this activity. Their experience will be one of being able to conduct their sport/recreation at a field trial course of

national caliber. The grounds will be maintained to establish and maintain the proper conditions for field trial activities.

The other category of visitor is the non-field trialer who utilizes this zone for other recreational pursuits. Field trialing is not an exclusive use. However, during the active times of year for field trials (April–June and August–November), the experience of other users will be tempered by any field trial activities that may be taking place. During these timeframes, they can expect encounters with field trialers, dogs and horses. Conflicts impacting hunting, birding, trail and other uses can occur as a result, and are the basis for unique management challenges.

Management Focus –The management focus for this zone is to minimize potential conflicts discussed above. Other areas of focus include implementation of educational efforts, oversight of the conduct of the Highland Field Trial Grounds Association in their management of the trial grounds and their obligations under the lease agreement for the parking areas, and support for the execution of the stewardship management plan.

Development – Development will focus on the reduction of conflict and increased suitability of the Field Trial Zone for that activity. One known need is to address points of conflict between the field trial course route and the existing equestrian and mountain bike trails, which may lead to relocation of some trail segments and/or new trail development. Appropriate signage should be placed cautioning users of the potential for contact with others. Another potential development activity is the placement of fencing to ensure the protection of the dogs.

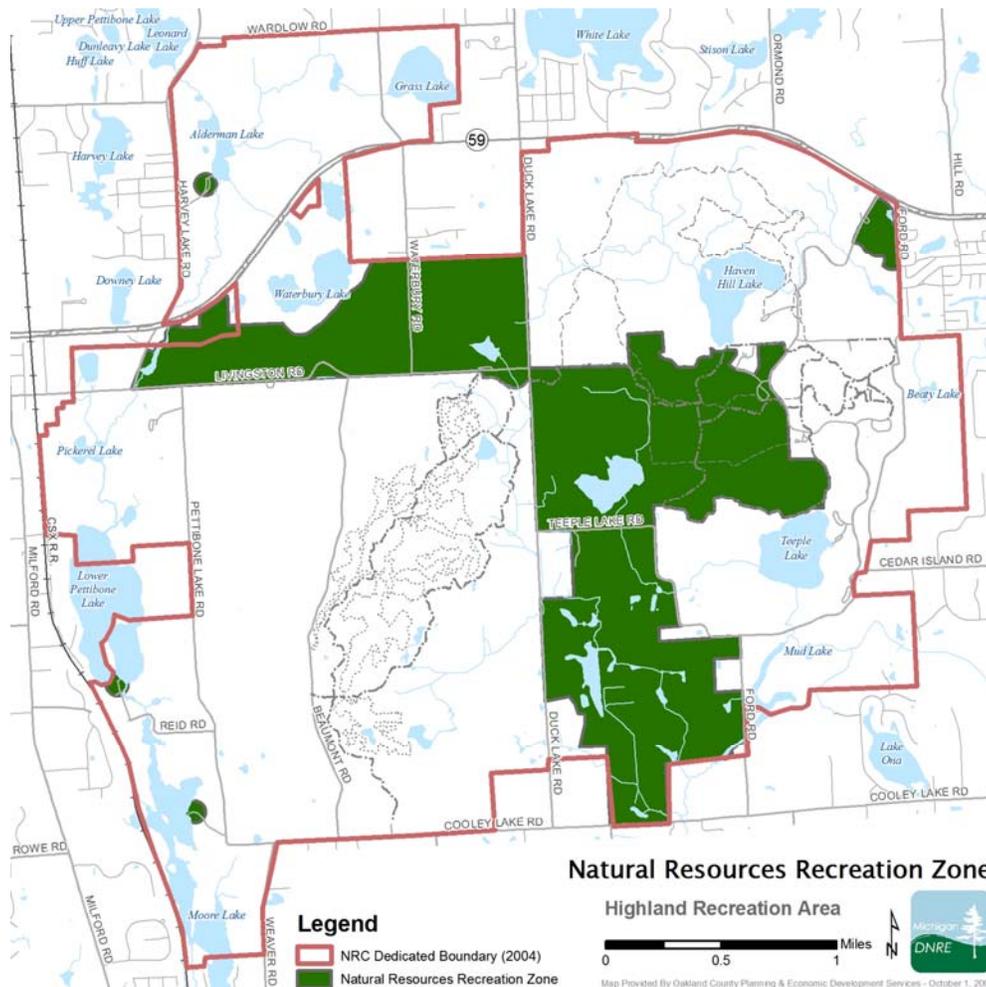
Other development needs include meeting universal access standards, and educational/interpretation needs. All development will meet the approval requirements of the planning process.

NATURAL RESOURCE RECREATION ZONE

The Natural Resource Recreation Zone (NRRZ) is the second largest zone with 1358 acres of the park, or 23 %

NRRZ is mapped in three locations: north of Livingston Road and west of Duck Lake Road; south of Livingston Road and east of Duck Lake Road, and near the park entrance at the northeast edge of the park. Significant portions of the NRRZ are also overlaid with the Cultural Landscape Zone. Within this zone the historic caretaker's cottage/gatehouse still stands, which has been subject of considerable volunteer effort to renovate and restore the structure to a useful purpose. The lease area for the United Flying Organization (UFO) is also within the NRRZ.

NRRZ also applies at each of the boat launch areas.



This zone is utilized for active recreation, including hunting, fishing, trapping, birding, snowmobiling, and trail usage (biking, hiking, equestrian, cross-country skiing, etc.) There is still an emphasis on resource quality over recreation, but in this zone, higher levels of use are allowed.

Following are the prescribed qualities for the Natural Resource Recreation Zone:

Natural Resources – In general, the natural resources can be modified to support visitor activities provided the project is consistent with other identified values.

This zone will reflect natural processes with vegetative management primarily employed to restore and maintain natural ecological structure and processes (such as removing of invasive species), to address hazard trees, and to manage pests and disease. Vegetation may also be managed to facilitate recreational use and maintaining an aesthetically appealing landscape.

Historic/Cultural Resources -- Within and adjacent to this zone are the remains of the historic Village of Spring Mill, including a mill pond and raceway (M-59 near Harvey Lake Road), and areas where remnants of the Ford family occupation of the land can still be seen.

This zone contains the burned out foundation of the Haven Hill Lodge, which is covered with a history/education overlay. The Friends of the Highland Recreation Area (FOHRA) have plans to restore or enhance this areas, and provide interpretative displays to share the story of the Ford family on the land, and their connections with the automotive industry, arts, and outdoor recreation.

This zone also contains the original gatehouse and caretaker's cottage, which once greeted visitors to the park, which are also covered with a History/Education Zone overlay.

The recorded history of the area also suggests that American Indians may have frequently traveled along established trails within the current park boundary.

Any activity in this zone which requires earthwork must first be reviewed and approved by Stewardship to ensure that the project and methods are appropriate for the protection and preservation of any potential artifacts, foundations or the like.

Recreation Opportunities – This zone is utilized for general recreation including hunting, fishing, trapping, birding and trail usage (hiking, biking, equestrian, cross-country skiing, etc). Snowmobiling may be allowed in

designated areas. Hunting is not allowed within 450' (Hunting Safety Zone) of campgrounds or buildings.

Education Opportunities – Information regarding the cultural past and natural communities can be made available at areas of congregation and fortified through educational opportunities in the NRRZ. Informational kiosks and interpretative displays at historical/cultural landmarks are good ways to disseminate this information.

Signed kiosks may also be used to teach “proper etiquette” when encountering different trail users, such as what should a biker do when he encounters a horse and rider? The trails are multi-use and also interface with the field dog trial area.

Visitor Experience – The visitor can expect encounters with other park visitors during all four seasons. Hunting and fishing is popular, and the multi-use trails cover the majority of areas within the park.

Management Focus –Management of this zone will be focused on minimizing potential user conflicts.

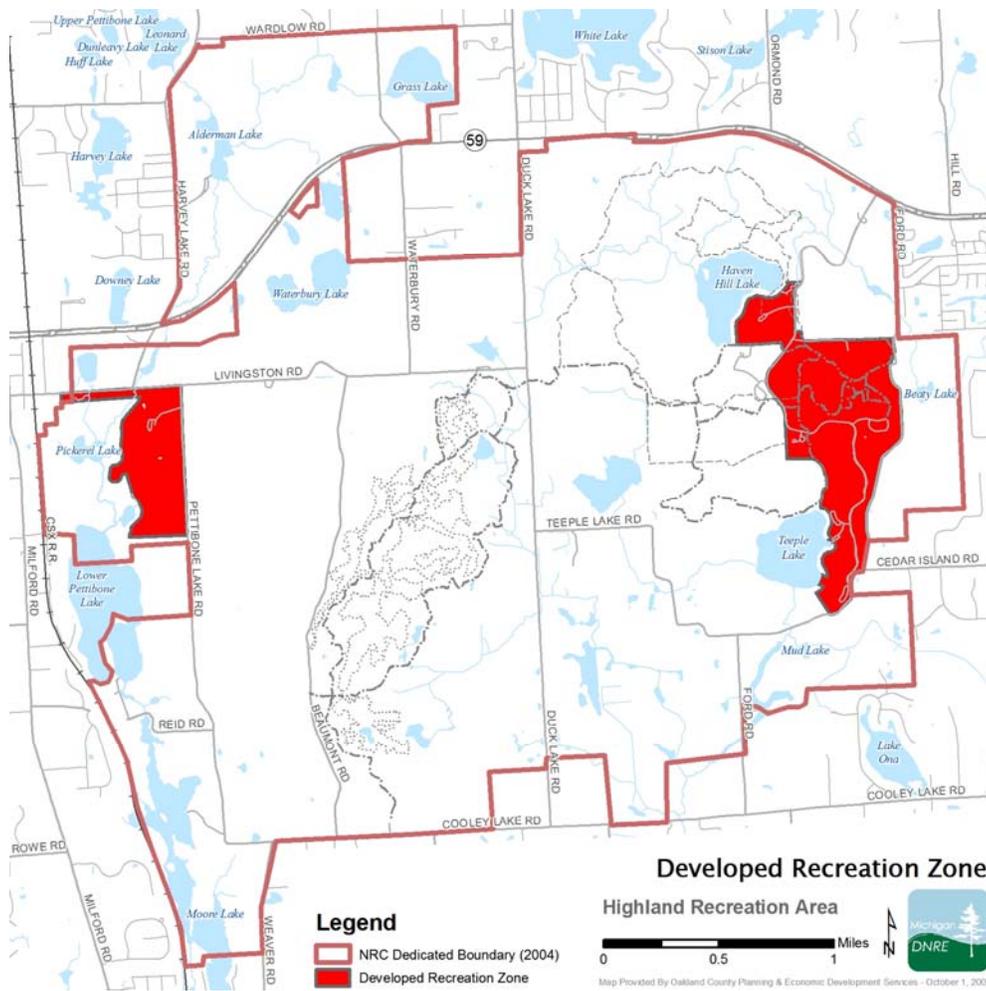
Development – The NRRZ on the west edge of the park abuts the Livingston Road entrance. Part of this area is also covered by a History/Education Zone overlay. Development in this zone should be designed to complement local history, and should focus on enhancing the visitor entrances to the park and improving trail connectivity to other parts of the park.

DEVELOPED RECREATION ZONE

The Developed Recreation Zone (DRZ) is mapped in two segments of the park, one along the park road on the east side of the park, and the second across the Dodge Brothers No. 10 Unit on the west side of the park. The DRZ is 383 acres, or 6% of the park.

The DRZ covers the most intensively used portions of the park, including Goose Meadows picnic area, Teeple Lake beach and boat launch, the equestrian stable, organizational camp and campground. The Sheep Barn is also included in the zone.

The “Dodge 10” unit is currently used primarily for the picnic shelter, which includes a modern kitchen and restrooms. The area has potential for increased use and a greater diversity of day uses. The area once included a campground and boat launch. The unit still includes a caretaker’s cottage and garage which might be rehabilitated for some use.



Following are the prescribed qualities for the Developed Recreation Zone:

Natural Resources – In general, the natural resources can be modified to support visitor activities provided the project is consistent with other identified values.

Vegetative management in this zone will address hazard trees, invasive species, and pests and disease. Vegetation may also be managed to facilitate recreational use and maintaining an aesthetically appealing landscape.

Historic/Cultural Resources -- A good portion of this zone is overlaid by a Cultural Landscape Zone, particularly those areas most utilized by the Ford family during their occupation of the land.

The Dodge Brothers Unit No. 10 includes a picnic shelter with stone fireplace which dates back to the 1920's.

The recorded history of the area also suggests that American Indians may have frequently traveled along established trails within the current park boundary.

Any activity in this zone which requires earthwork must first be reviewed and approved by Stewardship to ensure that the project and methods are appropriate for the protection and preservation of any potential artifacts, foundations or the like.

Recreation Opportunities – This zone is utilized for general recreation including hunting, fishing, trapping, birding and trail usage (hiking, biking, equestrian, cross-country skiing, etc). The zone also includes a toboggan hill, boat launch and swimming area. Snowmobiling may be allowed in designated areas. Hunting is not allowed within 450' (Hunting Safety Zone) of campgrounds, buildings or areas where people congregate.

Education Opportunities – Stakeholders have suggested partnerships with educational institutions to develop "Artist in Residence" programs or to host seminars at the park.

The vision of FOHRA for the sheep barn includes a pavilion as well as restoring the remaining sheep barn structure where feasible. This vision could include potential classroom or gathering places where educational activities might be scheduled

A volunteer mentoring program designed to introduce youth and others to camping, hunting and/or fishing would be expected to increase the user base for this and other parks, and could be implemented in this zone.

Information regarding the cultural past and natural communities can also be made available at other areas of congregation and fortified through educational opportunities in the DRZ. Informational kiosks are one good way to disseminate this information.

Signed kiosks may also be used to teach “proper etiquette” when encountering different trail users, such as what should a biker do when he encounters a horse and rider? The trails are multi-use and also interface with the field dog trial area.

Visitor Experience – With the focus of this zone being the developed campgrounds, stable concessionaire and other attributes, the visitor will experience a high number of encounters with other park visitors throughout the year, but especially during the summer.

Visitors can expect to enjoy a variety of public events and educational opportunities.

Management Focus –Management of this zone will be focused on maintaining the infrastructure that serves the intense public uses of this zone. Additional efforts should be focused on providing educational opportunities in this zone to complement the entire park, on developing universal access (ADA access) throughout the zone, and on maintaining public safety and good hospitality services.

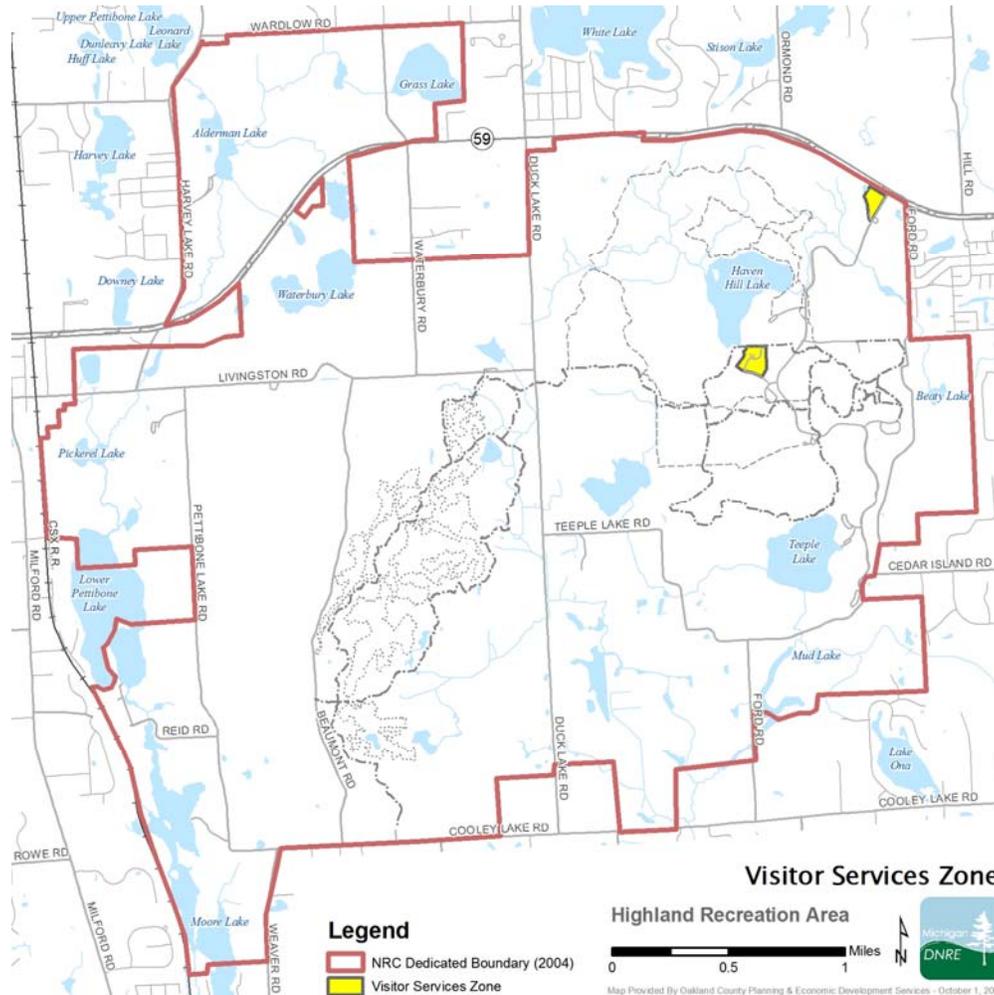
Development – The stakeholder groups identified a need for additional camping within the park. The Planning Team supports evaluation of overnight camping opportunities at Teeple Lake and at Dodge 10. The evaluation should also consider the costs and benefits of separating equestrian campers from other campers.

The Planning Team further supports evaluation of “resort” cabins at Teeple Lake, for overnight rental or to use in partnership with an “Artist in Residence” program that might be developed by higher educational institutions. Additional opportunities may exist for overnight rentals in Dodge 10, similar to the existing cabin at Bass Lake.

The DRZ areas along Livingston Road on the west edge of the park provide ties to the adjacent communities. An enhanced park entrance at this location should be considered, designed in keeping with the heritage of the adjacent Highland Station.

VISITOR SERVICES ZONE

The Visitor Services Zone (VSZ) is mapped in two locations in the park; one at the park entrance and offices, just south of M-59 on the east edge of the park, and the second at the maintenance shop, west of the park entrance road and south of Livingston Road. The VSZ is 12 acres, or only 0.2% of the park.



This zone encompasses the developed areas required for program administration and operations. Typically, it will include offices, contact stations, maintenance facilities and all related land base required to conduct the business of operating a state park or recreation area.

Following are the prescribed qualities for the Visitor Services Zone:

Natural Resources – In general, the natural resources can be modified to support the administrative needs of the park.

Vegetative management in this zone will address hazard trees, invasive species, and pests and disease. Vegetation may also be managed to facilitate development and recreational use and to maintain an aesthetically appealing landscape.

Historic/Cultural Resources – The existing maintenance shop is part of a complex of buildings constructed by the Ford family and later converted to park use. The historical integrity of these structures should be maintained.

Recreation Opportunities – None

Education Opportunities –Educational materials are made available in the office “public space” and office staff can provide further verbal information. There are opportunities to direct visitors to other educational opportunities throughout the park.

Currently, the State partners with the local school district to host a summer “latchkey” operation at the maintenance complex.

Visitor Experience – While the public is welcome at the office for administrative and informational purposes, most visitor interaction at the maintenance building complex is discouraged.

Management Focus –Provide public universal access to all administrative and maintenance buildings and parking areas. Assure security of offices, facilities and equipment (including outdoor equipment). Provide a safe working environment for park staff.

Development – Development in this zone will be for the purposes of complementing the administrative needs of the park, and meeting the needs for ADA compliance. All development will meet the approval requirements of the planning process.

The Planning Team further supports evaluation of “resort” cabins at Teeple Lake, for overnight rental or to use in partnership with an “Artist in Residence” program that might be developed by higher educational institutions. Additional opportunities may exist for overnight rentals in Dodge 10, similar to the existing cabin at Bass Lake.

The DRZ areas along Livingston Road on the west edge of the park provide ties to the adjacent communities. An enhanced park entrance at this location should be considered, designed in keeping with the heritage of the adjacent Highland Station.

HISTORY EDUCATION ZONE (OVERLAY)

The History Education Zone (HEZ) is mapped only as an overlay across four locations within the Natural Resources Recreation Zone: The Haven Hill Lodge, the original gatehouse, the maintenance complex and the historic sheep barn. Each of these locations is significant due to its prominence in the Ford family story.

This overlay zone recognizes unique opportunities to engage the visitor in a compelling story of our past. In managing these assets, the park staff should be sensitive to the prescribed values of the overlay as well the underlying zones.

Natural Resources – In general, the natural resources can be modified to support the visitor activities, provided the actions are sensitive to other identified values.

Vegetative management in this zone will address hazard trees, invasive species, and pests and disease. Vegetation may also be managed to facilitate development and recreational use and to maintain an aesthetically appealing landscape.

Historic/Cultural Resources –This overlay zone is designated over four of the highest value historic/cultural assets of the park. Many of the remaining structures and the grounds show the influence of renowned Landscape Architect Jens Jensen, who oversaw the development of the Ford estate. There are photographic records and some architectural plans for many of these buildings.

The Haven Hill Lodge foundation, with its standing stone fireplace and the associated carriage house mark the location of the Ford family retreat, and are located at one of the highest points of the land. Haven Hill was the sanctuary of Edsel Ford and his family during the 1920s and 1930s. Esteemed visitors to the estate included the Prince of Wales, Charles Lindbergh, and Thomas Edison.

The original gatehouse stands near the existing entrance to the park. This gatehouse was the point of entry and security for the Ford family estate, and later served as the park entrance until the widening and relocation of M-59 in

The sheepbarn is a “one of a kind” structure. Although it was partially destroyed in a windstorm in 2008, there is still a significant portion of the barn standing.

The shop area includes buildings that were originally part of the Ford Estate, and which now provide valuable space for park staff to stage their maintenance activities and complete woodworking and similar projects.

Recreation Opportunities – Potential for social activities, particularly at the sheep barn location.

Education Opportunities – Oakland County PEDS and Friends of Highland Recreation Area (FOHRA) have expressed interest in developing an interpretative program at the foundation of the Ford family lodge and sheep barn. The vision includes panels describing the history of the Ford family on the land, and ties to the automotive industry. The sheep barn is envisioned as an area where events and classes could be held.

Educational materials are made available in locations where the public gathers. There are opportunities to direct visitors to other educational opportunities throughout the park.

Currently, the State partners with the local school district to host a summer “latchkey” operation at the maintenance complex.

Visitor Experience – The historic and cultural features in this zone are unique to the area and to the Ford family story and would be appreciated by visitors with an interest in history. Given the vision of an ever evolving interpretative display, and the development of a pavilion at the sheep barn, the visitor should be pleased to participate in a variety of entertaining, educational and social activities.

Management Focus – Preserve and protect historic and cultural assets in the zone. Provide universal access where feasible. Foster partnerships with FOHRA and other committed user groups to leverage resources and promote the park.

Provide a safe working environment for park staff.

Development –All development will meet the approval requirements of the planning process.

The Planning Team supports continued partnership with FOHRA in order to preserve and protect historic assets, and to further goals of making history education accessible to all visitors. Possible projects include restoration of the sheep barn to provide classroom space, warming house and event pavilion and restoration of the gatehouse to provide opportunities for a camp store or gift shop, offices for the Friends group or as a location to offer classes. Any

development of these structures should respect principles of historic preservation and universal accessibility.

CULTURAL LANDSCAPE ZONE (OVERLAY)

The Cultural Landscape Zone (CLZ) is mapped as an overlay at two locations crossing numerous zones: much of the park east of Duck Lake Road to reflect the Ford family ownership of the land, and a smaller area near Livingston Road and Pettibone Lake Road to reflect the Dodge Brothers ownership on the west end of the park as well as the remnants of the Spring Mills settlement.

This overlay zone is intended to acknowledge the heritage of these land owners and to respect the cultural impact that is still evident in the park. In managing these assets, the park staff should be sensitive to the prescribed values of the overlay as well the underlying zones.

Natural Resources – In general, the natural resources can be modified to support visitor activities, provided the actions are sensitive to other identified values.

Vegetative management in this zone will address hazard trees, invasive species, and pests and disease. Vegetation may also be managed to facilitate development and recreational use and to maintain an aesthetically appealing landscape where the underlying zone would allow such activity.

Historic/Cultural Resources – This overlay zone encompasses not only the four historic landmarks identified in the History Education Zone, but also the surrounding land, which comprised the working farm that supplied the Ford family retreat. While much of the land has reverted to forest cover, one can still find subtle signs of former agricultural activity, of recreational assets developed by the former owners, and even remnants of park amenities that are no longer used or maintained such as the Dodge 10 Unit campground.

Recreation Opportunities – Recreational opportunities within this overlay zone vary in accord with the underlying zones, providing a large range of possibilities, ranging from passive trails and wildlife observation to swimming, camping and developed trails.

Education Opportunities – While those areas specifically designated with the History Education Zone overlay may provide the focus for more highly developed interpretative and educational opportunities, there are many opportunities throughout the Cultural Landscape Zone to identify and mark the impacts of prior landowners and visitors, and lead the visitor to a greater appreciation of our heritage in Southeast Michigan.

Educational materials are made available in locations where the public gathers. There are also numerous potential locations for interpretative activities.

Visitor Experience – The cultural resources of this area should appeal to those with an interest in history, or even nostalgia. Within this overlay zone are opportunities to experience solitude in a natural setting or to take part in organized social and recreational activities.

Management Focus –Preserve and protect historic and cultural assets in the zone. Provide universal access where feasible. Foster partnerships with FOHRA and other committed user groups to leverage resources and promote the park.

Provide a safe working environment for park staff.

Development –All development will meet the approval requirements of the planning process.

Development opportunities have been discussed in each of the underlying zones. The Planning Team supports continued partnership with FOHRA in order to preserve and protect historic and cultural assets.

FUTURE PLAN INSERTS

10-Year Long-Range Action Goals Plan (LONG-RANGE GOALS TO ATTAIN GMP) – Phase-2 of the Management Planning Process. Includes review and update of General Management Plan.

5-Year Implementation Plan (SPECIFIC ACTIONS TO IMPLEMENT) – Phase-3 of the Management Planning Process. Includes review and update of General Management Plan and Phase 2 Plan.

Annual Action Plan and Progress Report – Phase-4 of the Management Planning Process.

Operational/Management Resources -- The following categories are established as a guide for the park manager to use to supplement this working document. Other categories can be added as needed.

- Annual Work Plan (NOTE...this should tie-in with Phase 4 –Annual Report of Management Planning)
- Phase III Natural Resources Management Plan
- Staffing plan
- Budget plan
- Equipment inventory and needs
- Training (required and desired)
- Public relations/marketing/outreach
- Programming (Special events, MCCC activities, volunteers, etc.)
- Public Health, Safety and Welfare
 - Water system
 - Wastewater system
 - Electrical system
 - Law enforcement
 - Emergency access plans
 - Wildfire management plan
 - Dam safety reports
- CRS
- FOIA
- Infrastructure inventory (when available)
- Raster Image Index
- Raster Images of historic park plans
- Parcel mapping of land ownership
- Other...

SUPPORTING ANALYSIS

PARK SETTING

LOCATION AND SURROUNDING COMMUNITY

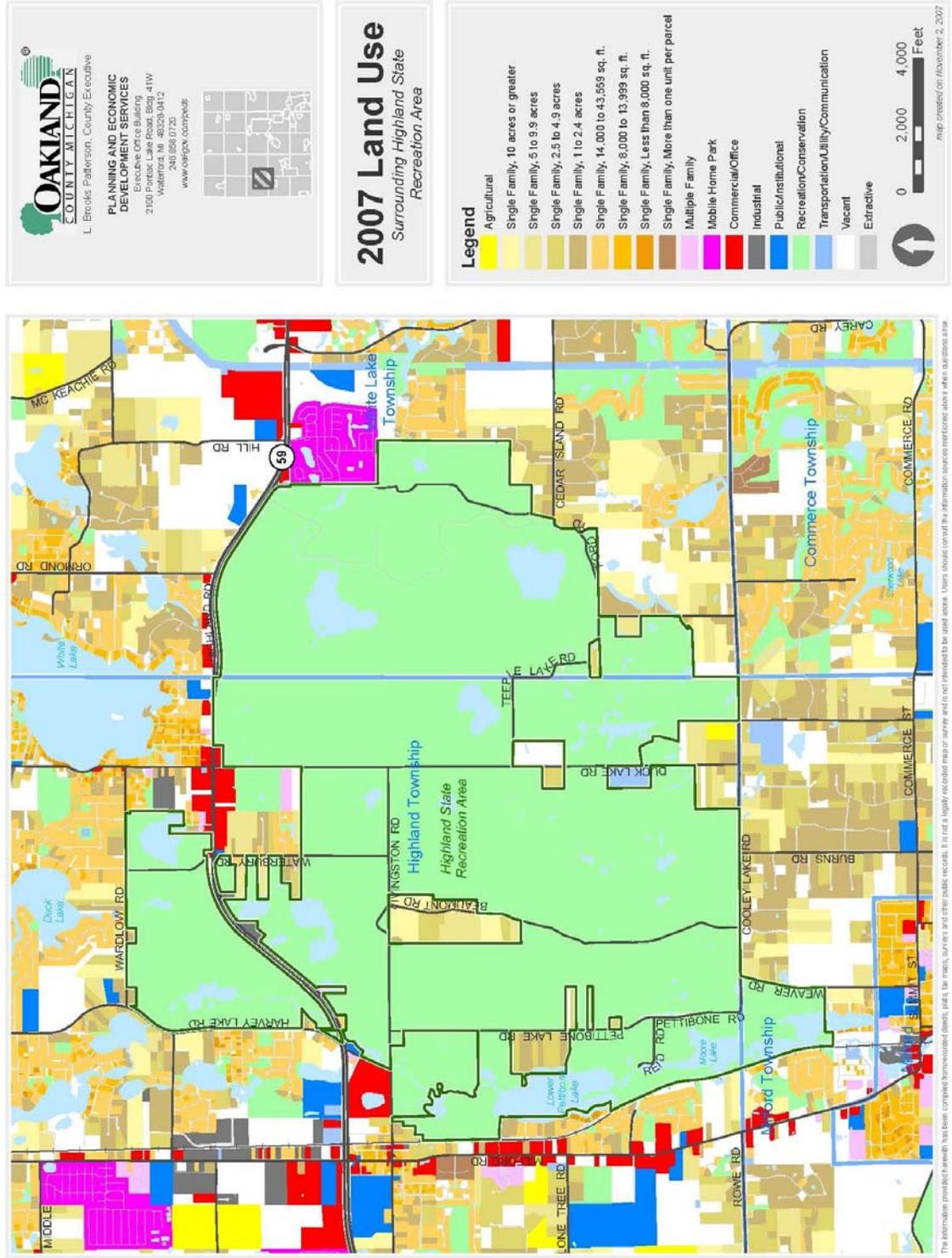
Highland Recreation Area (HRA) lies in the northwest section of Oakland County in Southeast Michigan. Oakland County's current population is over 1.2 million and continues to grow, along with other outlying counties in the Detroit area. The park lies within close proximity to several large urbanized regions. It lies approximately 30 miles north of Detroit, 30 miles south of Flint, 15 miles west of Pontiac, and 50 miles east of Lansing.

The park is roughly bordered by M-59 to the north, Cooley Lake Road to the south, Ford Road to the east, and Milford and Harvey Lake Roads to the west. The park is approximately 5,900 acres in size. Although the park lies within an urbanizing county, it maintains many significant natural resources, including the Haven Hill wetlands and forest complex, covering approximately 721 acres. Haven Hill is a National Natural Landmark, and an NRC-designated natural area, and a State Natural Area. The park also includes several lakes and manmade impoundments including Moore Lake, Lower Pettibone Lake, Pickerel Lake, Waterbury Lake, Grass Lake, Alderman Lake, Teeple Lake, Haven Hill Lake, Bass Lake and others.

The park has unique topography due to the recession of glaciers. Mount Kanzer, located in the southwest quadrant of HRA (off Pettibone Lake Road) is one of the highest elevations in Oakland County, at 1150 feet, whereas Teeple Lake has a base flood elevation of about 946 feet. Vegetation ranges from upland oak-hickory forests and grasslands to tamarack swamp forests and lowland bogs. Much of the acreage has been cultivated in the past, and there is an active stewardship effort underway to restore natural ecological processes such as fire, control invasive non-native plants, and re-establish native vegetation to support wildlife habitat.

Neighboring land uses include low-density residential uses on all sides. There is a large manufactured housing community on the east boundary of HRA at Ford Road. Relatively small scale commercial and office land uses lie to the east, north and west. An 80 acre tree farm lies along the northwest boundary line at M-59. Livingston Road and the Dodge 10 Park are considered a gateway to the Highland Station commercial district in Highland Township.

EXISTING LAND USE MAP



Population

All of the surrounding communities have grown steadily in the past 40 years. Most of the surrounding townships have grown by over 100 percent. Highland Township has contained growth in the last decade. The area around the rest of HRA is still becoming increasingly populated. This increases the chance for more users as well as for more user conflicts.

Population Comparison, 1960-2000 Surrounding Communities of Highland Recreation Area

Community	1960	1970	% Change, 1960-1970	1980	% Change, 1970-1980	1990	% Change, 1980-1990	2000	% Change, 1990-2000	% Change, 1960-2000
White Lake Township	8,381	14,311	70.8%	21,870	52.8%	22,608	3.4%	28,219	24.8%	236.7%
Commerce Township	9,608	14,556	51.5%	18,789	29.1%	22,228	18.3%	34,764	56.4%	261.8%
Highland Township	4,855	8,372	72.4%	16,958	102.6%	17,941	5.8%	19,169	6.8%	294.8%
Independence Township	10,121	16,327	61.3%	20,569	26.0%	23,717	15.3%	32,581	37.4%	221.9%
Milford Township	5,871	7,255	23.6%	10,187	40.4%	12,121	19.0%	15,271	26.0%	160.1%
Springfield Township	2,664	4,388	64.7%	8,295	89.0%	9,927	19.7%	13,338	34.4%	400.7%
Waterford Township	47,008	59,123	25.8%	64,250	8.7%	66,692	3.8%	73,150	9.7%	55.6%
Oakland County	690,259	907,871	31.5%	1,011,793	11.4%	1,083,592	7.1%	1,194,156	10.2%	73.0%

Source: U.S. Census 1960-1990

Future Population in Surrounding Communities of Highland Recreation Area

Community	2000	May 2006	% Change, 2000-2006	2030	% Change, 2006-2030
White Lake Township	28,219	30,597	8.43%	34,313	12.14%
Commerce Township	34,764	35,936	3.37%	41,019	14.14%
Highland Township	19,169	19,972	4.19%	21,681	8.56%
Milford Township	15,271	16,223	9.52%	17,923	10.48%
Independence Township	32,581	34,707	6.53%	38,103	9.78%
Springfield Township	13,338	14,364	7.68%	20,326	41.53%
Waterford Township	73,150	70,771	-3.25%	72,863	2.96%
Oakland County	1,194,156	1,217,372	1.94%	1,333,573	9.55%

Source: SEMCOG

Growth is expected to continue over the next 25 years. This will likely bring pressure to develop more infrastructure in the area to accommodate new residents. This could include widening roads, water, sewer, utilities, waste treatment, etc. There could be pressure Department of Natural Resources (DNR) to allow more utility easements on HRA. Currently, there are few sewer lines that run north of M-59 in White Lake and south through Milford Township. Lack of sewers has been a principal impediment to more intense growth.

Future Population for Neighboring Counties of Highland Recreation Area

County	1990 Census	2000 Census	January 2000 SEMCOG	2030 Forecast
Livingston County	115,645	156,951	185,097	282,552
Macomb County	717,400	788,149	835,357	930,420
Monroe County	133,600	145,945	154,947	196,554
Oakland County	1,083,592	1,194,156	1,220,487	1,333,573
St. Clair County	145,607	164,235	173,342	203,255
Washtenaw County	282,937	322,770	345,207	448,020
Wayne County	2,111,687	2,061,162	2,003,724	2,013,975

Source: SEMCOG

Oakland County has undergone sustained growth from 1960 to 2000. Population continues to migrate from Wayne County out to the surrounding counties around Detroit. Oakland County has the second largest population in metro Detroit. HRA lies in the middle of that growth.

Oakland County Population by Race and Hispanic Origin, 1990-2000

Race	1990 Census	2000 Census	2000 Census Alone or Combined
White	970,674 (90%)	988,194 (83%)	1,007,744 (83%)
Black	77,488 (7%)	120,720 (10%)	126,811 (10%)
American Indian	3,948 (0%)	3,270 (0%)	9,324 (1%)
Asian	24,967 (2%)	49,402 (4%)	54,764 (4%)
Pacific Islander	136 (0%)	295 (0%)	858 (0%)
Other Race	6,379 (1%)	10,064 (1%)	18,204 (1%)
Multi-Racial	n/a	22,211 (2%)	n/a
Total Population	1,083,592	1,194,156	1,217,705***
Hispanic Origin	19,630 (2%)	28,999 (2%)	n/a
Not of Hispanic Origin	1,063,962 (98%)	1,165,157 (98%)	n/a

Source: SEMCOG

***2000 total here will exceed total population as those persons marking more than one race are counted in each race category they marked.

The majority of Oakland County residents are white, 83 percent. The black population has increased to 10 percent between 1990 and 2000. Also, the Asian population increased by 2 percent for a total of 4 percent. The new category, multi-racial, was included on the 2000 census. It accounts for 2 percent of the population in the county.

Income

Income in the Surrounding Area of Highland State Recreation Area

Geographic Area	Median Income	Households in Poverty	Total Households
Oakland County	\$61,907	25,607 (5%)	471,115
Southeast Michigan*	\$49,979	183,181 (10%)	1,845,218
White Lake Township	\$65,894	293 (8%)	10,092
Highland Township	\$62,805	310 (5%)	6,786

Source: SEMCOG (2000 Census)

*SEMCOG's 7-county region (Oakland, Wayne, Macomb, Livingston, Washtenaw, St. Clair, Monroe Counties)

Oakland County is a wealthy county in the metro Detroit Area. Its median income is over \$10,000 more than the Southeast Michigan region. Its poverty rate is half that of the rest of the region. White Lake Township, has a much higher than average median income that is over \$15,000 more than the rest of the region. Likewise, Highland Township also has an average median income exceeding that of the region and of Oakland County. The level of income in this area affects the lifestyles of people that visit the park and their type of recreational interests.

Employment

Top Five Employers in Oakland County

Firm	Location	Employees	Product
Chrysler Technology Center	Auburn Hills	7,000	Minivan, sm & lg car eng & prd
General Motors Corp	Lake Orion	4,600	Automobile assembling
General Motors Corp	Pontiac	4,000	Truck assembly
General Motors Corp	Milford	4,000	Testing, research & dvlpt: autos
Ford Motor Co	Wixom	3,700	Automobile assembly

Source: Michigan Economic Growth Corporation (1998 data)

Manufacturing jobs continue to be lost in southeast Michigan. In January 2006, Ford Motor Co. announced that it will close its Wixom assembly plant. This meant the loss of 3,700 jobs to the immediate area of HRA. The economic downturn of 2008-2010 has led to unemployment rates topping 15% in Southeast Michigan. Job losses continue to alter the demographics of this area.

Employment by Industrial Class in Oakland County

Industrial Class	1990	2000	2030 Forecast
Agriculture, Mining, and Natural Resources	8,397 (1%)	9,565 (1%)	11,625 (1%)
Manufacturing	116,987 (17%)	131,353 (14%)	119,175 (11%)
Transportation, Communication, and Utility	30,089 (4%)	32,793 (4%)	37,723 (3%)
Wholesale Trade	46,746 (7%)	62,864 (7%)	71,940 (7%)
Retail Trade	130,230 (19%)	150,971 (17%)	184,394 (17%)
Finance, Insurance, and Real Estate	70,704 (10%)	98,237 (11%)	104,053 (10%)
Services	268,006 (39%)	407,625 (45%)	535,892 (49%)
Public Administration	9,878 (1%)	16,955 (2%)	22,597 (2%)
Total Employment	681,037	910,363	1,087,399

Source: SEMCOG

A decrease in agriculture and manufacturing are the biggest trends in employment for Oakland County. Also, there is an increase in service related employment. The service category includes both skilled and unskilled workers. For example, unskilled food preparation workers are included in this category as well as skilled health care workers.

Household Size

Household Size in Highland Recreation Area's Surrounding Area

	1990 Census	2000 Census	May, 2006 SEMCOG	2030 Forecast
White Lake Township	2.87	2.77	2.70	2.50
Highland Township	3.02	2.82	2.70	2.50
Southeast Michigan*	2.66	2.58	2.51	2.35
Oakland County	2.61	2.51	2.44	2.26

Source: SEMCOG

*Southeast Michigan includes SEMCOG's 7-county region—Oakland, Macomb, St. Clair, Monroe, Livingston, Washtenaw, and Wayne counties.

Another trend taking place throughout the country is the shrinking household size. Despite the fact that the total number of households continues to increase, the size of them decreases. This has been attributed to many things: divorce, couples deciding to wait to have children, alternative families, two-income families, people living longer, and today's economy, which may affect the number of workers that are necessary to fill today's jobs. For example, an agricultural economy requires families to have many children to help on the farm. The manufacturing economy of the 20th century required many workers to do labor-intensive work. The information-based economy of today requires less workers overall, but highly skilled ones. As these changes have taken place, the family size has continued to decrease and is predicted to continue to do so.

Recreational Land Use in Oakland County (1990-2000)

Cultural, Outdoor Recreation, and Cemetery	1990 acres	2000 acres	Change	Pct Change
Public Assembly/Cultural or Sport Facility	681.2	685.9	4.7	0.70%
Outdoor Recreation	15,582.80	20,432.00	4,849.30	31.10%
Cemetery	1,614.70	1,668.80	54.2	3.40%

Source: SEMCOG

Recreational Land Use in Southeast Michigan* (1990-2000)

Cultural, Outdoor Recreation, and Cemetery	1990	2000	Change	Pct Change
Public Assembly/Cultural or Sport Facility	1,358.30	1,351.50	-6.8	-0.50%
Outdoor Recreation	53,716.40	67,611.60	13,895.20	25.90%
Cemetery	6,013.90	6,177.40	163.5	2.70%

Source: SEMCOG

*Southeast Michigan includes SEMCOG's 7-county area—Macomb, Oakland, Wayne, Washtenaw, Livingston, Monroe, and St. Clair counties.

Between 1990 and 2000, there was a 31 percent increase in land used for outdoor recreation in Oakland County. In southeast Michigan the increase in outdoor recreation land was 25.90 percent. It is helpful to compare the

amount of land being developed for other uses with the amount of land set aside for outdoor recreation. The category *outdoor recreation*, according to SEMCOG, is determined by aerial photography, not by property ownership. The outdoor recreational use most often discerned by aerial photography is that of a golf course. This means that there has likely been an increase in the number of golf courses in Oakland County, rather than passive recreation land.

ESTABLISHMENT OF THE PARK

Highland Recreation Area was officially designated as part of the state park system in 1943. The state incorporated its Dodge #10 unit into the park, a 78-acre parcel donated by the Dodge Motor Company in 1922. Other farm and woodland parcels were acquired through funds made available by a special session of the state legislature in 1944. The most significant single purchase was the Edsel Ford Estate, consisting of 2,422 acres purchased for \$300,000. The property value was estimated at \$3,000,000. Other parcels were tax reverted properties. Today, the park totals approximately 5900 acres.

GENERAL HISTORY OF THE PARK

The history of state parks in Michigan mirrors that of the U.S. Department of Interior's National Park Service. As the country has developed so have its parks. Over time, the agencies charged with overseeing the park system have developed according to public needs, administrative efficiency, and political climate. The parks movement has been closely related to the growth of cities and the growth of railroads and highways.

The National Park system was created in 1872, when Yellowstone National Park was placed under the jurisdiction of the U.S. Department of the Interior. This marked the first time that the federal government acted to preserve a large area of land as a park. The growing preservation movement sought to preserve cultural landmarks, national monuments, as well as to preserve nature and promote tourism. The National Park Service was officially designated in 1916 as a part of the Department of the Interior.²

Many states, including Michigan, followed this trend. In 1915, Michigan authorized a newly-created Public Domain Commission to accept gifts, grants, and devises of real property to be used for park purposes. One of the first purchases was a 200 acre stand of virgin pine near Interlochen.

Act 218 of 1919 established the Michigan State Park Commission. The commission was created to establish a comprehensive statewide system of parks, rather than a few scattered ones. Act 17 of 1921 created the Department of Conservation, overseen by the Michigan Conservation

² National Park Service website.

Commission. The Department of Conservation was designated as the single state agency to administer and plan the park system. There were 23 parks in 1921 when the Department of Conservation succeeded the Michigan State Park Commission. Between 1921 and 1956, the state park system grew to a total of 73 parks and recreation areas, totaling 176,991 acres.

Between 1927 and 1931, the Department of Conservation began a survey of the entire Southeast Michigan area, a radius of approximately 35 to 65 miles of downtown Detroit. Their goal was to determine the possibilities of acquiring land for parks and recreation purposes. Again in 1941, the Department of Conservation surveyed land in Southeast Michigan. In general, the plan proposed to acquire 100,000 acres of land in Southeast Michigan, divide into 16 different areas, including Waterloo, Pinckney, Brighton, Island Lake, Highland, Proud Lake, Pontiac Lake, Holly, Ortonville, Metamora, Bald Mountain, and Rochester-Utica State Recreation Areas.

A special session of the Legislature in 1944 appropriated \$4,000,000 to begin acquisition of lands. The Conservation Commission added \$600,000 from the Game Protection Fund. The Regular Session of 1945 appropriated \$1,000,000 for development in all state parks, a majority of which was spent in Southeast Michigan parks. The Special Session of 1946 appropriated \$750,000 for further parks development. In addition, the Michigan United Conservation Clubs (MUCC) pressed the Michigan state legislators to preserve farms, fields, wetlands, and woodlands around southeast Michigan by establishing state recreation areas. The land was acquired by various means over a long period of time. Some of the property was tax-reverted property. Other property was purchased through the Pittman-Robertson Fund, a fund established by hunters, which paid for the acquisition of certain lands to be set aside as public hunting property or as a shooting range.

The Department of Conservation officially defined state park policy in 1954.³ This policy created different classes of park lands, state parks, state recreation areas, and historic sites. State recreation areas were defined as large areas convenient to centers of dense population, with a diversity of natural features and impressive natural beauty. They are suitable for many types of intensive and extensive recreation, including swimming, picnicking, camping, group camping, boating, fishing, hiking, horseback riding, nature study, enjoyment of scenery, and even hunting.

Most state parks are centered around a dominant feature or a limited number of attractions. State Recreation Areas are not. They are diverse.

³ Michigan Department of Conservation. *State Parks of Michigan: A Report of the Past, A Look to the Future*. 1957

Time Line of Events at Highland Recreation Area

- 1921 A land survey is undertaken by the Department of Conservation of potential recreational land in Southeast Michigan
- 1922 Dodge Motor Company donates the 78-acre Dodge #10 unit to the State of Michigan. The parcel provides access to a little stream and Pickerel Lake.
- 1925 Major park development in the Dodge #10 State Park included a park roadway, campgrounds, two toilet buildings and the Caretaker's Residence. 450 small deciduous trees were planted.
- 1927 A group camp building was added and the park was opened for winter sports, including a toboggan slide and a jr. ski jump. Playground equipment, tables, benches and outdoor stoves were installed. 2000 Jack and Norway pine seedlings were planted.
- 1933-38 The Civilian Conservation Corps invested 5000 man-days of labor into improvements including repair and remodeling of the Caretaker's Residence and construction of the Garage and Workshop. The men planted extensively and installed a boat dock at Pickerel Lake. Other improvements included a wading pool and combination stone and hewn timber shelter and toilet building.
- 1941 Continuation of land survey begun in 1921.
- 1943 Edsel and Eleanor Ford Estate was acquired. Existing structures included a family lodge and garage, a gate house, several tenants' dwellings, a farm complex, a sheep barn, a swimming pool, a wading pool, a tennis court, a ski tow and toboggan run. The lodge was constructed between 1924-26, and was located atop a hill overlooking the country side and Haven Hill Lake, a 62-acre impoundment built by Edsel Ford. The property consisted of approximately 2,422 acres, and was originally used by the family as a country retreat.
- 1949-63 State operates the lodge as a self-supporting convention center, separately from the management of the Highland Recreation Area. The lodge was closed in 1963 due to political pressure and perception that lodge was used as an exclusive retreat.
- 1952 Alderman Lake dam is constructed.

- 1970 The Ford Lodge Annex is converted to an environmental education center.
- 1980 State acquires a small parcel just south of the Dodge #10 unit which includes a small family cabin and stone outdoor stove. The cabin appears to date to the 1940's. The cabin is available to the public for rental as a rustic cabin.
- 1999 The Ford lodge is destroyed in a fire. The perpetrators were later apprehended and convicted of arson.

LAND OWNERSHIP AND ISSUES

Funding Sources

The lands that comprise the HRA have been acquired by the state through a variety of funding sources. Often, conditions attached to the original funding source or other details of the property transaction encumber the future use or disposition of the land.

The funding source map that follows this section identifies the varieties of sources used in acquiring land within the HRA. Multiple sources may have been utilized, particularly in areas where small fragmented parcels were aggregated.

[General Fund](#)

Acquisitions through the General Fund include properties that were purchased with monies from the state's general fund, and not associated with a specific revenue stream or bond program.

[Michigan Natural Resources Trust Fund \(MNRTF\)](#)

The trust fund was established in 1976 to provide a source of funding for public acquisition of lands for resource protection and public outdoor recreation. Funding is derived from royalties on the sale and lease of state-owned mineral rights. It is utilized for general program purposes.

[Game and Fish Funds \(a.k.a. the State Game and Fish Protection Fund\)](#)

This fund was established in 1921 and is financed principally by the sale of hunting and fishing licenses. The license fees are set by statute and their purpose is to support the conservation program for preservation and control of fish and wildlife. The fund also receives funding from the investment earnings of the Game and Fish Protection Trust Fund. The fund provides financial support for state-wide hunting and fishing programs, including resource management, research, enforcement of hunting and fishing laws, and acquisition of lands to be used for hunting and fishing purposes.

[State Game and Fish Protection Trust Fund](#)

The Game and Fish Protection Trust Fund was created under the provisions of Public Act 73 of 1986. The Game and Fish Protection Fund provides revenues for the operation of the DNR's Fish, Wildlife, and Law Enforcement programs in the Department. Management, research, enforcement of fishing and hunting laws and acquisition of lands to be used for hunting and fishing purposes are examples of uses of this fund.

Pittman-Robertson Fund

The program was designed for wildlife restoration and hunter education and may be used for range development programs. The intent of the act is to conserve and manage wild birds and mammals, and to enhance the safety, marksmanship and sportsmanship with firearms and bows and arrows. Therefore, in 1937 Congress enacted specific legislation to provide funds to states to carry out these programs. By law, (16 USCA 669a-i) the Interior Department is authorized to cooperate with the various states in wildlife restoration projects and hunter education, provided that the various states assent to the Federal provisions and pass laws for the conservation of wildlife, which will include a prohibition against the diversion of license fees paid by hunters for any purpose other than the administration of the State Fish and Game Department. (Sec. 669).

Recreation Bond Fund

This fund was established in 1988 and operates under Parts 196 and 715 of P.A. 451 of 1994, as amended. The fund was created from the proceeds and investment earnings of a bond package approved by the voters in November 1988 to finance state and local public recreation projects.

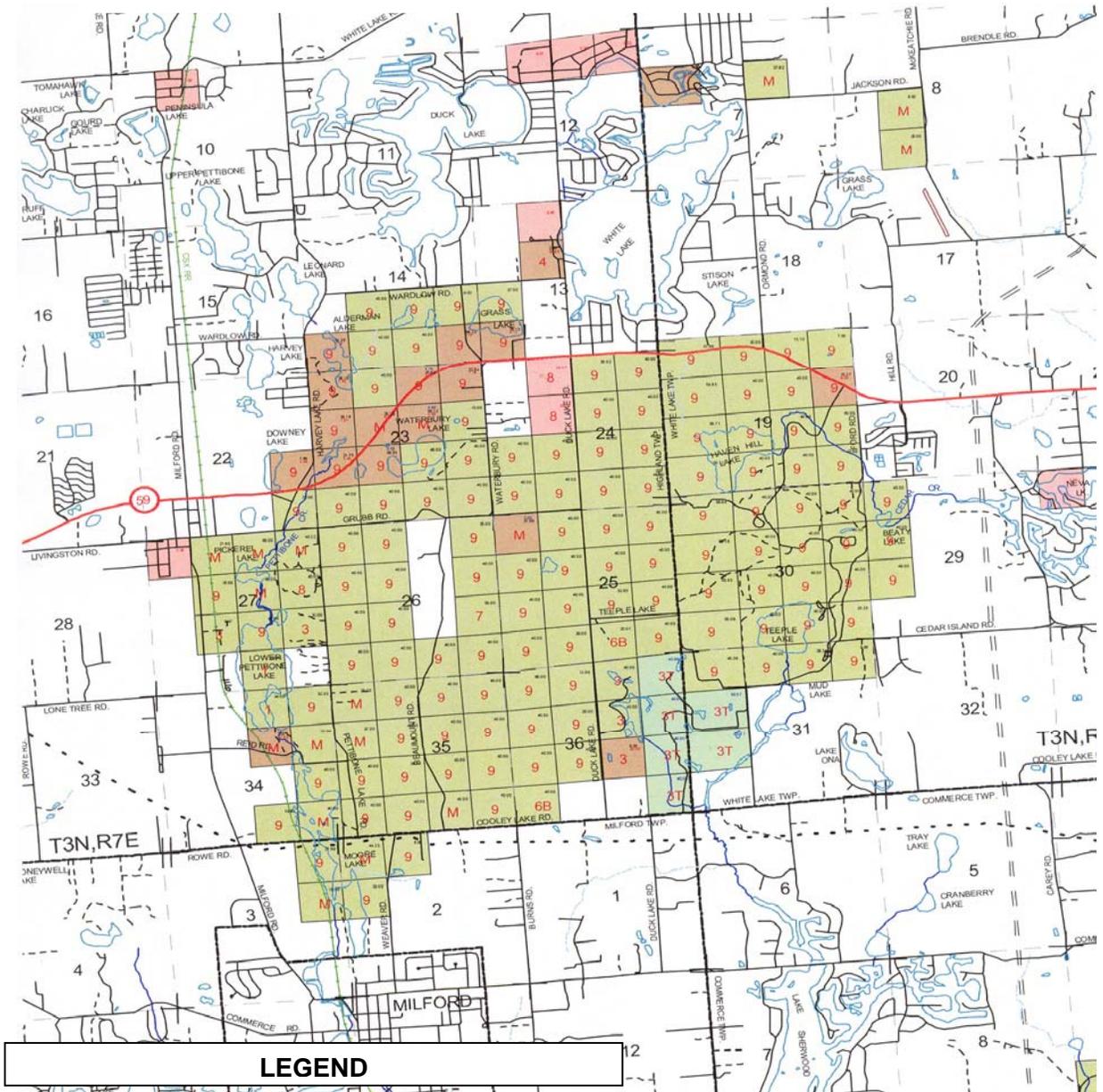
Michigan Land Trust Fund

The State Constitution was amended in 1984 to provide for a "Michigan Natural Resources Trust Fund" which was implemented in 1985. Most rentals, royalties, and other revenues derived from mineral, coal, oil, and gas interests on State-owned land are credited to the fund. Public Act 451 of 1994 redirected a portion (\$10 million per year) of these revenues previously committed to this fund, to the Michigan State Parks Endowment Fund. Appropriations are used to fund grants to local units of government as well as State agencies to acquire or develop outdoor public recreation facilities.

Gift

These properties were provided to the state as a donation from private individuals or entities.

FUNDING SOURCES FOR HIGHLAND RECREATION AREA



LEGEND

<p>FUND CODES</p> <ul style="list-style-type: none"> 1 State Game Fund 3 Michigan Land Trust Fund 3T Michigan Natural Resources Trust Fund 4 Game and Fish Fund 6B Recreation Bond Fund 7 Pittman-Robertson Fund 8 Gift 9 General Fund/Game & Fish Fund M Multiple Funding Sources 	<p>TRANSPORTATION</p> <ul style="list-style-type: none"> Two-Track and Seasonal Roads Highways Residential Roads Railroads Paved Airports Unpaved Airports County Roads <p>UTILITY</p> <ul style="list-style-type: none"> Pipelines and Transmission Lines Electric Transmission Lines <p>POLITICAL</p> <ul style="list-style-type: none"> Township Boundaries Great Lakes Shoreline County Boundary Section Lines <p>HYDROLOGY</p> <ul style="list-style-type: none"> Lakes and Ponds Rivers and Streams Drains and Intermittent Streams 	<p>DNR OWNERSHIP</p> <ul style="list-style-type: none"> Surface Mineral and Surface Minerals Mixed Ownership Other Rights <p>40.00 Acres of Surface Ownership 40.00 Acres of Mineral and Surface Ownership 40.00 Acres of Mineral Ownership</p> <p>MAP INFORMATION</p> <p>DNR Land Ownership and Fund Source information is derived weekly from the MDNR's Land Ownership Database. Parcel information is compiled to the quarter-quarter section level.</p> <p>COMPLETENESS AND QUALITY The data does not reflect platted parcels, Private Claims, or parcels within the City of Detroit and/or Saint Clair County Plats.</p> <p>The amount of acreage owned within a quarter-quarter section is identified by acreage labels in the upper right corner of each quarter-quarter section.</p> <p>The quality and completeness of this data is unknown. It is suggested that this data be combine with a second source, such as plat maps, to further identify ownership.</p> <p>The information displayed on this map is intended for general planning purposes only. Specific ownership or funding source information should be verified by contacting the MDNR.</p> <p style="text-align: right;"> MICHIGAN DEPARTMENT OF NATURAL RESOURCES Forest, Mineral and Fire Management</p> <p style="text-align: right;">DATE: 02/28/2006</p>
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Private In-Holdings

There are a large number of private in-holdings within HRA. These include:

- Vector Pipeline Compressor Station on Duck Lake Road (19 acres),
- Hi-Mill Manufacturing Company on M-59 (5.25 acres),
- Individual single family parcels scattered about the Recreation Area (approximately 30 parcels totaling 200 acres).

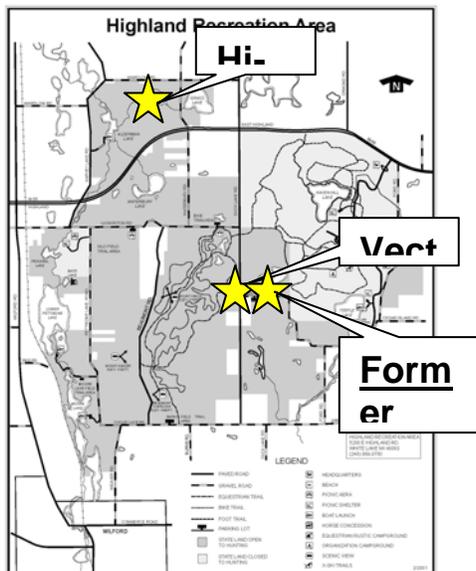
In addition, Highland Township owns a 20-acre parcel on Duck Lake Road that was purchased from the State of Michigan in 2000 for use as a compost site. The parcel is surrounded by state land on the north, east and west, and is located near the southern boundary of the HRA. This facility was closed in 2005/06 and was offered for resale to the State. The State has not chosen to exercise its right to purchase the parcel and the Township has no current plans for its use.

This fragmented patchwork of private/public ownership impacts the availability of state lands for hunting, since State law places limits on how near one may hunt in proximity to residential or other occupied properties.

Vector Pipeline Compressor Station
2282 S. Duck Lake Rd
19 acres



Vector Pipeline Compressor Station
 2282 S. Duck Lake Rd
 19 acres



Hi-Mill Manufacturing
 1704 E. Highland Rd
 5.25 acres



Former Compost Site
S. Duck Lake Road
20.0 acres



Management of Adjacent Lands

RESIDENTIAL

HRA neighbors mostly residential land and some limited commercial property along M-59. One issue regarding residential neighbors is the use of state park land for their own purposes. Often residents create their own paths within the park leading to their own lot or encroach on state land through their mowing and lawn maintenance activities.

HIGHLAND TOWNSHIP/WHITE LAKE TOWNSHIP

Highland Township and the Highland Equestrian Conservancy have expressed an interest in establishing an equestrian ‘theme’ for the Highland CBD, located just west of the Recreation Area, and have also expressed interest in making and expanding equestrian facilities in Highland RA.

Highland and White Lake Townships are also working with Oakland County on a Green Infrastructure Plan that would include open space and trail linkages to the HRA. The County-wide Green Infrastructure Plan includes a potential trail connection from the South at Cooley Lake Road in Milford Township, and safety paths along M-59 which would border the park in several areas. Additionally, White Lake Township is seeking grant funding to develop a multi-use (including equestrian) trail connection from Highland RA to Pontiac Lake RA.

Land use patterns for properties adjacent to the recreation area in Highland Township are well established, with few vacant properties abutting the park.

In White Lake Township, properties along the north side of M-59 at the northeast corner of the recreation area are planned for a mixed use commercial project that could feature 300,000 square feet of retail space, including two or three “big box” stores, live-work units and multiple family housing. The developer is exploring the potential for creating a pedestrian overpass that would provide cross access between the development and the south side of M-59, which would include Highland Recreation Area.

MICHIGAN LAND USE LEADERSHIP COUNCIL

In 2003, Governor Granholm formed the Michigan Land Use Leadership Council to study and make recommendations about land use in Michigan. The council’s report makes several recommendations that affect HRA. It recommends protection of headwater areas, incentives to build trailways, supplements to the Michigan Natural Resource Trust Fund, and several other recommendations regarding natural resource industries, including forestry, agriculture, mining, and tourism.⁴

⁴ Michigan Land Use Leadership Council. *Final Report of the Michigan Land Use Leadership Council*. 2003

RELATIONSHIP OF HRA TO OTHER PARK RESOURCES

Highland Recreation Area is situated in an area near abundant park land. This section describes those park lands that are located within this region, including state, regional, and county parks.

State Parks and Recreation Areas

There are approximately 19 state parks and recreation areas totaling approximately 78,765 acres within a 60 mile radius of Highland Recreation Area. In Oakland County, there are approximately 31,000 acres of state park land.

State Parks and Recreation Areas within 60 Miles of HRA

Park	Type	County	Acres
Sleepy Hollow	State Park	Clinton	2,678
Waterloo	State Recreation Area	Jackson, Washtenaw	20,500
Metamora-Hadley	State Recreation Area	Lapeer	723
Island Lake	State Recreation Area	Livingston	4,000
Brighton	State Recreation Area	Livingston	4,947
Pinckney	State Recreation Area	Livingston, Washtenaw	11,000
Wetzel	State Recreation Area	Macomb	900
Sterling	State Park	Monroe	1,000
Bloomer	State Park 4	Oakland	28
Dodge No. 4	State Park	Oakland	139
Maybury	State Park	Oakland	944
Proud Lake	State Recreation Area	Oakland	4,700
Holly	State Recreation Area	Oakland	7,817
Seven Lakes	State Park	Oakland	1,434
Bald Mountain	State Recreation Area	Oakland	4,637
Ortonville Recreation Area	State Recreation Area	Oakland	5,400
Pontiac Lake State Rec. Area	State Recreation Area	Oakland	3,700
Lakeport	State Park	St. Clair	565
Algonac	State Park	St. Clair	1,450
TOTAL			78,765

Oakland County Parks

There are 11 major parks within Oakland County. There are also 54 golf courses. These parks offer multiple recreational opportunities such as golf, tennis, athletic fields, picnicking, mountain biking, and a water park.

Oakland County Parks

Park	Type	Municipality	Acres
Addison Oaks	multi-use	Addison Township	794
Glen Oaks	golf	Farmington Hills	N.A.
Groveland Oaks	multi-use	Holly Township	360
Independence Oaks	multi-use	Clarkston	1,088
Lyon Oaks	multi-use, golf	Lyon Township	1,024
Orion Oaks	multi-use	Orion Township	27
Red Oaks	water park	Madison Heights	N.A.
Rose Oaks	undeveloped	Rose Township	620
Springfield Oaks	golf	Davisburg	N.A.
Waterford Oaks	multi-use	Waterford Township	145
White Lake Oaks	golf	White Lake Township	N.A.

Oakland County has completed purchase of additional acreage in Highland Township, approximately 1.5 miles north of the HRA. The park is comprised of approximately 250 acres used for fairly passive recreation such as trailriding and hiking. A limited amount of bowhunting will be permitted, whereas use of firearms is prohibited. The Oakland County Parks and Recreation Department will be working on a master development plan for this park in the coming years.

Huron-Clinton Metropolitan Authority (HCMA) Parks

There are also 13 Metro Parks in the southeast Michigan region, totaling 23,844 acres. They are managed by the Huron-Clinton Metropolitan Authority, which is funded by a tax paid for by residents of the five-county metro Detroit area, including Wayne, Oakland, Macomb, Washtenaw, and Livingston Counties. These parks contain many natural areas, but offer multiple recreational opportunities such as mountain biking, athletic fields, boating, fishing, golfing, and horseback riding. There is no camping or hunting allowed in Metro Parks.

Huron-Clinton Metro Parks

Name	Acres	Name	Acres
Delhi	53	Lower Huron	1258
Dexter-Huron	122	Metro Beach	770
Hudson Mills	1,549	Oakwoods	1,756
Huron Meadows	1,540	Stoney Creek	4,461
Indian Springs	2,215	Willow	1,531
Kensington	4,357	Wolcott Mill	2,625
Lake Erie	1,607		
		Total	23,844

NATURAL RESOURCES

ENVIRONMENTAL PROTECTION

HRA contains wildlife and natural areas that need to be protected. The Haven Hill Natural Area is comprised of approximately 721 acres located south of M-59 and west of Ford Road, is designated as a National Natural Landmark and is further protected as an NRC designated and legally dedicated Natural Area.

The Haven Hill Natural Area has all of southern Michigan's principal forest types within one small area, including swamp forest of tamarack, cedar, beech-maple forest, oak-hickory forest, and mixed hardwood forest. Haven Hill Lake, although created through the Ford family impoundment of a local creek, provides a high quality water resource restricted to non-motorized activities. The area has remained largely undisturbed for the past 75 years and has retained its natural character as well as some unusual flora and fauna.



There are also several listed species, as determined by Michigan Natural Features Inventory (MNFI).

MICHIGAN NATURAL FEATURES INVENTORY

Michigan Natural Features Inventory (MNFI) is an effort by Michigan Department of Natural Resources and Michigan State University Extension to survey and inventory significant natural features in state parks and recreation areas.⁵ MNFI reports provide the majority of information on natural features within this report.

⁵ Michigan Natural Features Inventory. <http://mnfi.anr.msu.edu/>

MNFI reports frequently point out the *Endangered* (E) and *Threatened* (T) plant species of Michigan, which are protected under the Endangered Species Act of the State of Michigan (Part 365 of PA 451, 1994 Michigan Natural Resources and Environmental Protection Act). Also included in many MNFI reports are plant species of *Special Concern* (SC). While not afforded legal protection under the Act, many of these species are of concern because of declining or relict populations in the state. Should these species continue to decline, they would be recommended for *Threatened* or *Endangered* status. Protection of *Special Concern* species now, before they reach dangerously low population levels, would prevent the need to list them in the future by maintaining adequate numbers of self-sustaining populations within Michigan. Some other potentially rare species are listed as of *Special Concern* pending more precise information on their status in the state; when such information becomes available, they could be moved to threatened or endangered status or deleted from the list.

In addition, MNFI reports detail the *Endangered* (E), *Threatened* (T), and *Probably Extirpated* (X) animal species of Michigan, which are protected under the Endangered Species Act of the State of Michigan (Part 365 of PA 451, 1994 Michigan Natural Resources and Environmental Protection Act). As with plant species, included in this list are animal species of *Special Concern* (SC), which are afforded special attention.

MNFI most recently conducted field surveys at HRA from 1996 through 2000 and published a report of its findings and management recommendations in March, 2001.

Natural Community Inventories

As one element of the MNFI field inventories, ground surveys were conducted to identify the types of natural communities occurring within the HRA. Natural communities are areas characterized by distinct combinations of topography, soils, hydrology, vegetation and wildlife. Eight significant natural communities were identified, including those listed below.



- southern wet meadow
- mesic sand prairie
- relict conifer swamp
- southern swamp
- hardwood – conifer swamp
- dry-mesic southern forest
- mesic southern forest
- prairie fen

photo source: MNFI Staff

PLANT LIFE

There are a wide variety of plant types present throughout the HRA, consistent with what might be expected given the many landforms and ecosystems. A number of rare or unique plants were spotted during the MNFI field surveys, including those listed below.



Photo Source: USFS

Listed Plant Species that May be at Highland Recreation Area

Scientific Name	Common Name	Status
<i>Jeffersonia diphylla</i>	twinflower	SC
<i>Hydrastis canadensis</i>	goldenseal	T
<i>Angelica venenosa</i>	hairy angelica	SC
<i>Panax quinquefolius</i>	ginseng	T
<i>Castanea dentata</i>	American chestnut	E
<i>Galearis spectabilis</i>	showy orchis	T

Status: E – State listed Endangered, T - State listed Threatened, SC - Special Concern

WILDLIFE

Rabbits, squirrel, grouse, woodcock, ducks, geese, raccoon and deer are common in the park. Also, a variety of amphibians such as turtles and frogs are found there. Possum, skunk, fox, coyote, bats, mink, muskrat, wild turkey, hawks, owls, and a variety of migratory songbirds are seen there too.



Listed Animal Species that May be at Highland Recreation Area

Scientific Name	Common Name	Status
<i>Emydoidea blandingii</i>	Blanding's turtle	SC
<i>Dendroica cerulea</i>	cerulean warbler	SC
<i>Accipter cooperii</i>	Cooper's hawk	SC
<i>Sistrurus catenatus catenatus</i>	eastern massasagua	SC
<i>Wilsonia citrina</i>	hooded warbler	SC
<i>Seiurus monticella</i>	Louisiana waterthrush	SC

Source: MNFI

Status: E – State listed Endangered, T - State listed Threatened, SC - Special Concern

No rare or endangered snakes or invertebrates were documented during the MNFI field survey efforts. Prairie warbler (E), tamarack tree cricket (SC) and red-legged spittlebug (SC) were all documented at HRA in 2003, after the MNFI report was published.

VEGETATION

Much of Highland Recreation Area has been modified due to logging, agriculture, and recreational development. Much of the original pre-settlement vegetation pattern was black oak barren, with areas of mixed oak forest on the south and pockets of mixed conifer swamp and wet prairie as well.⁶

An oak barrens community is characterized by widely scattered and clumped oak trees and shrubs in a matrix of prairie grasses and forbs, which is often referred to as a savanna. Typically, small pockets of black oak and white oak are prevalent, with some northern pin oak and hickories. Grasses and forbs include big and little bluestem and Pennsylvania sedge, with a variety of forbs present.

Wet prairies were historically found in many depressions of the oak barrens. Wet prairies are characterized by grasses such as blue-joint, cordgrass, Indian grass and big bluestem, as well as sedges and prairie forbs. These plants tolerate dry summer conditions as well as wet conditions. Wet prairies are considered a very rare ecosystem globally and imperiled in Michigan.

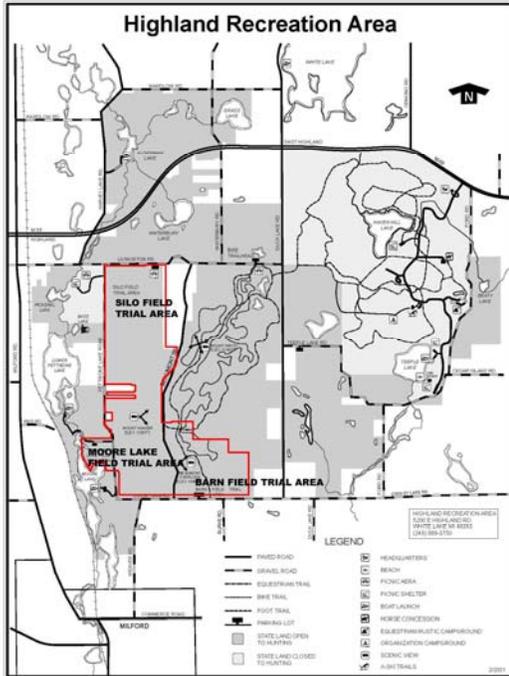
Mixed conifer swamps are essentially forested wetlands in peat and muck soils. Typical tree species include tamarack, white cedar, white elm, basswood, red maple, black ash, yellow birch and white pine. Dense shrub groupings include spicebush, leatherwood, highbush blueberry and poison sumac. In bog areas, a thick carpet of sphagnum moss can be found.

When parcels comprising the park were acquired beginning in the 1940's, much of the land had been cultivated for crops, for sheep grazing or as orchards. Early aerial photos (see appendix) show a typical patchwork pattern of farmed fields and fence rows, interrupted by tree cover primarily in wetlands areas and by waterbodies. After the state acquired the farmland, it was essentially left to revegetate with non-native invasive grasses and shrubs. Large areas of second-growth oak forest also emerged.

Wetlands and swamp ecosystems were also disrupted, largely due to the influence of manmade dams at Lower Pettibone Lake, Moore Lake, and Haven Hill Lake; as well as through road building and other construction

⁶ MNFI Inventory and Management Recommendations for Highland State Recreation Areas's Natural Communities, Rare Plants and Rare Wildlife, March 19, 2001

activities. Much of the tamarack population is gone. The Haven Hill wetlands and forest complex is still considered to be a high-quality natural ecosystem, although diversity of vegetation is threatened by invasive species.



The DNR is actively working through the State Park Stewardship Unit (SPSU) with the Highland Field Trial Grounds Association (HFTGA) to restore a sustainable, functioning, high quality oak barrens ecosystem to the 929 acres of the recreation area known as the Highland Field Trial Area (Silo North, Silo South, Barn and Moore Lake). This effort is guided by a Stewardship Management Plan prepared in January 2000, and revised April 2001.⁷ Stewardship activities have included invasive species removal, planned burns and mowing, seeding with native prairie plant seeds, and seed collection and propagation for future plantings.

INVASIVE SPECIES

Invasive species have affected HRA. The Federal Executive Order on Invasive Species defines an invasive species as "an alien species (plant, animal, insect, bacteria, and fungi) whose introduction does or is likely to cause economic or environmental harm or harm to human health". In turn, an alien species is defined with respect to a particular ecosystem and is considered any species "that is not native to that ecosystem" (Executive Order 13112, 1999). Alien species are also known as exotic, non-native, or introduced, however the term alien also applies to native species outside their natural range or ecological boundaries. The terms noxious, nuisance, or invasive characterize alien species when these organisms cause harm.⁸



Emerald Ash Borer (EAB) is an exotic, aggressive beetle that has already been responsible for the death of approximately 15 million of Michigan's 700 million ash trees since it was discovered in 2002. All of the

⁷ Stewardship Management Plan/Highland Field Trial Area, Fahlsing, et.al, Jan., 2000.

⁸ Michigan Invasive Plant Council.

counties of southeast Michigan fall within the state's quarantine area. There is to be no movement of wood out of these counties. Also, it has been necessary in some cases to eradicate ash trees to prevent a large outbreak of EAB. The EAB is found in HRA as evidenced by dead and dying ash trees in the park. Its destructive impacts will have future implications at HRA.

Purple Loosestrife is another invasive species that can be found throughout Oakland County wetlands. Purple loosestrife (*Lythrum salicaria*) is a perennial plant native to Europe and Asia which has become widely established in the US and Canada. It grows and reproduces prolifically in wetlands and other moist habitats. Each mature 4-7 foot tall plant produces 30 or more beautiful purple flower spikes that bloom in late summer and can produce over 2.5 million seeds per year. Once it becomes established, purple loosestrife frequently becomes the dominant vegetation by out-competing native plants. As native plant communities are reduced, so too are wildlife species that depend on them. Declines in ducks, geese and other wetland birds as well as muskrats, mink and some amphibians have all been noted. There is also concern that purple loosestrife may reduce spawning habitat for some fish. Recently, there have been successful attempts to eradicate purple loosestrife with the release of three species of plant feeding beetles, *Galerucella californiensis*, *Galerucella pusilla* and *Hylobius transversovittatus*.



Garlic mustard is an exotic invasive plant from Europe that invades woodland habitats in North America and impacts forest biodiversity. In some woodlands, dense stands of garlic mustard in the spring threaten showy spring blooming ephemerals like spring beauty, trilliums and trout lilies. Other research points toward potentially negative impacts on timber species and forest health. Many land managers consider it to be one of the most potentially harmful and difficult to control invasive plants in the region. It readily invades forested habitats where it can displace native plants, compete with timber species regeneration, alter soil composition and structure, impact natural associations between plants and fungi, and result in cascading ecosystem impacts.



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The Gypsy moths another invasive species affecting the entire state. It can be found throughout both peninsulas. Michigan Department of Agriculture have been following a policy of containment of the Gypsy Moth. During high population levels, total defoliation can occur. During the months of June and July, defoliating populations cover sidewalks, homes, children’s play equipment and other objects making outdoor activity in residential and recreational areas almost impossible. Existence of Gypsy moths may mean expense and pesticide use to eliminate egg masses from plant material slated to go into areas without gypsy moth.

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Figure 2. *Sirex noctilio*—adult male.

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The United States Department of Agriculture is becoming increasingly concerned about the threat posed by the exotic Sirex woodwasp. This insect is native to Europe, Asia and northern Africa, and was introduced to the United States with wood packing materials in port areas. The female wasp attacks living pines by injecting the tree with a fungus, and laying her eggs. Together, the larvae and fungus act to kill the tree. Infected trees change color from dark green to yellow to red, while retaining their needles. The pest can be managed using a parasitic worm, injected into infected trees. The USDA has approached Highland Township to begin a monitoring program to detect and manage the pest if they emerge as a threat to the area.

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¹² Photo Source: WMNH

¹³ Photo Source: usfs



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Phragmites is a reed that spreads aggressively through a wetland community, disturbing the natural ecosystem. It is characterized by a dense root mat that blocks other plants from growing, water from flowing freely, and birds and animals from feeding. The plants quickly take over trails and boardwalks, growing laterally through its root mat as well as through seed dispersion. The plants grow tall with an impressive seed head. When the plants die off, the decaying reeds create a mucky sludge, adding unwanted nutrients to the wetlands. The only effective means of control is through the careful use of chemical herbicides.

Oriental bittersweet is an invasive exotic that closely resembles the native plant which is becoming less and less common. Both varieties are popular additions to floral displays. Bittersweet is a deciduous woody perennial, which grows as climbing vines and trailing shrubs. Female plants produce clusters of small greenish flowers that yield three-valved yellow capsules that split open at maturity to reveal the red orange fruits which contain one or two seeds. Male plants do not



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produce the fruits. American bittersweet produces larger fruits, whereas the Oriental bittersweet produces larger quantities of smaller fruits. The aggressive spreading Oriental bittersweet takes over other vegetation, blocking out sunlight and smothering trees under its weight.

¹⁴ Photo Source: Paul Curtis, MDNR 9/07

¹⁵ Photo source: NPS



¹⁶

Black or Louis swallow-wort (pictured above) and pale swallow-wort (pictured below) are aggressive, twining perennials that grow in extensive patches and easily overtake old-field habitats, crowding out goldenrod and grasses and destroying the vegetation and habitat that many grassland birds and butterflies rely on. These plants are part of the milkweed family and resemble other native plants such as the honeyvine.



Glossy or common buckthorn are non-native woody shrubs that can grow to 20 feet in height. Glossy buckthorn typically invades wetlands including swamps, bogs, fens and wet meadows but also occurs in upland habitats such as woodland edges, old fields and roadsides. Common buckthorn is primarily an invader of upland sites including open woods, woodland edges, prairies and open fields. Both species are capable of growing in full sun as well as heavily shaded areas. They produce abundant flowers and seeds, spread and form thickets which leaf out early in the season and shade out native species.



¹⁷

¹⁶ Photo source: [nps.gov](https://www.nps.gov)

¹⁷ Robert H. Mohlenbrock @ USDA-NRCS PLANTS Database / USDA SCS. 1989. *Midwest wetland flora: Field office illustrated guide to plant species*. Midwest National Technical Center, Lincoln.



Autumn Olive is drought tolerant shrub that thrives in a variety of soil and moisture conditions. Since it is so adaptable, it has invaded grasslands, fields, open woodlands and disturbed areas. It threatens native ecosystems by out-competing and displacing native plant species.

AQUATIC RESOURCES

There are several lakes within HRA, as well as numerous wetlands including the Highland Havens wetlands complex. The HRA is at the headwaters of the Kent Lake Subwatershed of the Upper Huron River.

Named Lakes within Highland Recreation Area

Name	Location	Size (acres)
Alderman Lake	Highland Twp. Sec. 14/23	15
Grass Lake	Highland Twp. Sec. 13	33
Waterbury Lake	Highland Twp. Sec. 23	31
Pickerel Lake	Highland Twp. Sec. 27	9
Bass Lake	Highland Twp. Sec. 27	3
Lower Pettibone Lake	Highland Twp. Sec. 27/34	100
Moore Lake	Highland Twp. Sec. 34	83
Haven Hill Lake	White Lake Twp. Sec.	51
Teeple Lake	White Lake Twp. Sec.	49
Beaty Lake	White Lake Twp. Sec.	3

Huron River

The headwaters of the Kent Lake subwatershed of the Upper Huron River lie within the Highland Recreation Area. There are two significant local watersheds. Approximately 1/4 of the park is tributary to Pettibone Creek, which flows south from Upper Pettibone Lake, through Alderman Lake, Pickerel Lake, Lower Pettibone Lake and Moore Lake and through a series of other unnamed lakes before flowing into Kent Lake. The remainder of the park is better characterized as several wetland complexes, with a series of

¹⁸ Photo source: James H. Miller, USDA Forest Service

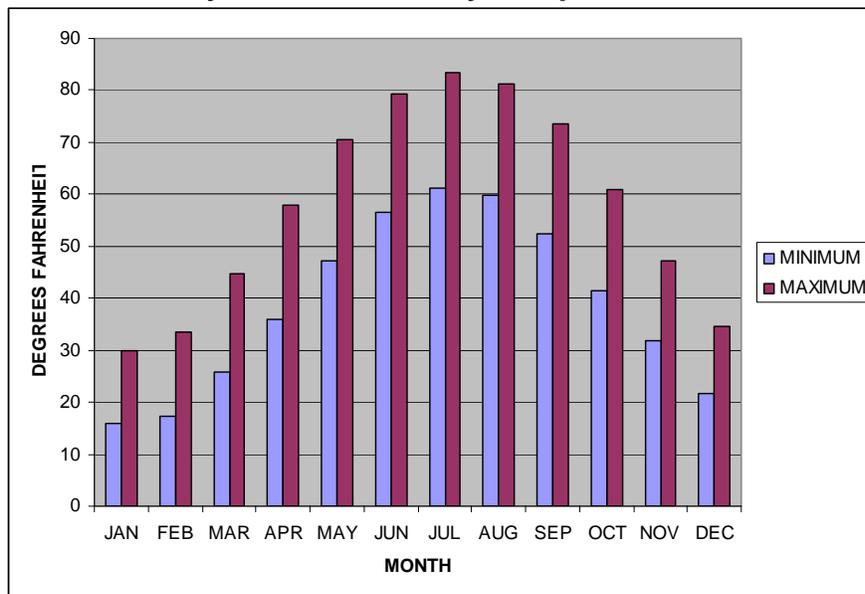
small waterbodies, wetlands and vernal pools that may or may not be interconnected.

The Haven Hill wetlands complex is of national significance, and has earned several national landmark designations as discussed previously.

CLIMATE

Highland Recreation Area in Oakland County has cold winters and warm summers, typical of southeast Michigan. In January, the average minimum and maximum temperatures are 15 and 30 degrees Fahrenheit. In July, the average minimum and maximum temperatures are 61 and 84 degrees Fahrenheit. Oakland County gets 29 inches of rainfall and 35 inches of snowfall annually. The county has a 163 day growing season. Also, it has an average of 11 days above 90 degrees and 7 days below 0 degrees Fahrenheit.¹⁹

28-Year Summary of Mean Monthly Temperatures for Pontiac, MI



Source: Michigan State's Climatologist's Office

¹⁹ Michigan Economic Development Corporation.

Climate Summary of Oakland County

MONTH	AVG. MIN TEMP	AVG. MAX TEMP.
January	15F./-9C.	30F./-1C.
July	61F./16C	84F./29C.
PRECIPITATION	RAINFALL	SNOWFALL
Average Annual	29in./74cm.	35in./89cm.
GROWING SEASON	DAYS ABOVE 90F/32C	DAYS BELOW 0F/-18C
163	11	7

Source: NOAA Climate Summary, 1995

GEOLOGY AND TOPOGRAPHY

Within the park, the topography is typified by rolling hills, with elevations vary from approximately 1150 feet at Mount Kanzer (just west of Beaumont Road) to 946 feet above sea level at Teeple Lake (southern end of the park). The park includes a ridge of very steep hills (including Mount Kanzer, Mount Omich and the Beaumont Overlook) running from the north to south along the center of the park. The former Ford estate was situated to take advantage of the sweeping views of the surrounding land.

Highland Recreation Area consists mainly of *glacial outwash*, *ice-contact terrain*, and *end moraines*, as evidenced in the steep slopes and extensive low wet areas throughout the park.

SOILS

Soils throughout the park vary considerably. Soils are predominantly loamy sands, except within wetlands areas, where more hydric soils types are prevalent.

The majority of the land area is mapped as the Oshtemo soils series, which includes well drained soils on outwash plains, beach ridges and moraines, with sandy and loamy material in underlying sand and gravelly sand; and Spinks soils series, which includes well drained, moderately rapidly permeable soils on outwash plains and moraines, formed in sandy material. Both soils series are found in slope ranges varying from 0 to 35 percent.²⁰

Wetlands areas in the park are primarily found in the Houghton soils series, which consists of very poorly drained, moderately slowly to moderately rapidly permeable soils in bogs or depressions on moraines, till plains, or outwash

²⁰ *Soil Survey of Oakland County Michigan*, United States Department of Agriculture, March 1982.

plains, formed in organic sediments. The soils are found in slope ranges varying from 0 to 1 percent.

There are pockets of other soils types as well, and the predominant soils types are mixed with others in typical associations (such as Oshtemo-Boyer loamy sands or Houghton-Adrian-Napolean mucks). The soil characteristics generally impact issues such as the suitability for onsite sewage disposal, structural design and erosion potential.

FLOODPLAINS

A floodplain is an area adjoining a lake, stream, river, or pond that receives excess water from occurrences such as rainstorms. A floodplain exists where flooding occurs with frequency and predictability based on natural topography and proximity to a body of water. The areas affected by floodplains are those areas that immediately surround the many lakes and Pettibone Creek.

GROUNDWATER

Highland and White Lake Townships rely on systems of wells to provide municipal water supplies, and individual wells for individual homeowners not served by the townships. There are 18 community well fields and over 4,000 individual wells. Most of the area has high or moderate soil permeability. Therefore, it has high groundwater vulnerability. Within HRA, most of the park has high groundwater vulnerability with a small amount having moderate vulnerability. In addition, both Highland and White Lake Township have identified wellhead protection areas, although none of the delineated areas encompass lands in HRA. HRA has wells located in its modern campground.

WATERSHEDS

A watershed is the land that catches rain or snow and drains or seeps into a common marsh, stream, river, lake, or groundwater. The headwaters of five major drainage areas begin in Oakland County—the Clinton, Huron, Rouge, Flint, and Shiawassee. HRA falls within the Huron River Watershed. Development around HRA matters to the resources within the park. For



Lower Pettibone Lake

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example, stormwater runoff from M-59 and the commercial areas along the north end of HRA may result in silt, salt and other contaminants being introduced into the Huron Watershed.

In 1997, six communities in northwestern Oakland County collaborated on the Shiawassee and Huron Headwaters Resource Preservation Project (S&H Project).²² Under increasing demand for residential and recreational development, these municipalities contracted the Michigan Natural Features Inventory to conduct an inventory of the area and identify significant natural areas. None of the sites within HRA were selected for a full inventory, although an MNFI survey was completed later in 2001. Many of the recommendations and tools identified in the S&H Project are applicable within the HRA and apply to surrounding lands.

In 2001-02, the participants in the S&H Project banded with other communities and the Huron River Watershed Council (HRWC) to undertake a planning process to create a Kent Lake Subwatershed Management Plan (TMDL plan) to address the mandated Total Maximum Daily Load of phosphorus in Kent Lake. This plan offers strategies to reduce phosphorus loading, such as the installation of structural improvements, which do not necessarily impact the operations of the HRA at this time, and public education plans. The HRA can play a vital role in raising public awareness of water quality issues and this could be an important education/interpretation opportunity in the park.

The Steering Committee for the TMDL planning efforts continued on to address a broader range of water quality issues through a voluntary watershed based approach to the mandated Phase II National Pollutant Discharge Elimination System (Ph II NPDES) Stormwater permit. Thirteen communities, Oakland County, Southeast Michigan Council of Governments (SEMCOG), the Huron Valley School District, Huron-Clinton Metropark Authority, and HRWC all participated in the planning process. Many of the strategies outlined in that plan (published in 2005) deal with raising public awareness of water quality issues through enhancing visitor interaction with the watershed. Again, the HRA can play a vital role, particularly given the national significance of the Haven Hill complex.²³

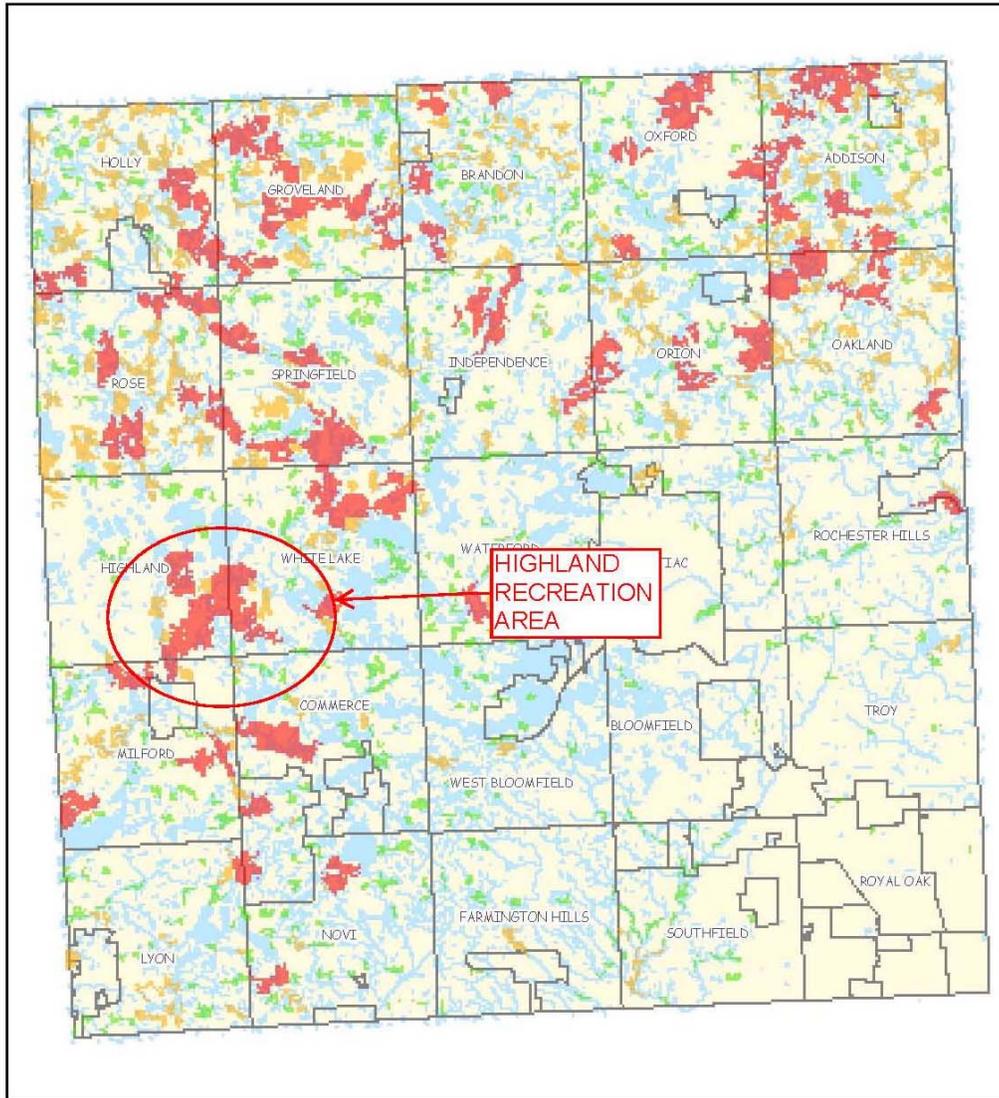
WETLANDS

The term *wetlands* refers to a variety of wet environments, inland marshes, wet meadows, mudflats, ponds, bogs, bottomland hardwood forests, and wooded swamps. There is a significant amount of wetlands at HRA. These include open water, scrub/shrub, emergent growth, and forested. Wetlands provide flood control, wildlife habitat, filtration of potential contamination of local aquifers, and aesthetic beauty.

POTENTIAL NATURAL AREAS

The term *potential natural area* is not to be confused with the legal term *dedicated Natural Area*, as described in Part 351, Wilderness and Natural Areas, of the Natural Resources and Environmental Protection Act of 1994, which gives land special legal protection. Instead, a potential natural area is a term used by MNFI to define places that are dominated by native vegetation and that have a high level of potential for harboring natural areas and unique natural features. MNFI uses a process to rank these areas based on the area's total size, size of its core area, the absence or presence of a stream corridor, its landscape connectivity, the restorability of surrounding lands, the quality of the vegetation, parcel fragmentation, and the number of element occurrences. MNFI uses these criteria to establish three levels of priority for *potential natural areas*—Priority One, Two, and Three.²⁴ Many acres of HRA fall within Priority One and Two categories, including the areas mentioned in the S&H Project: the Haven Hill Complex, the Waterbury Lake Complex, the Pettibone Lake Complex and the Alderman Lake Complex.

MAP OF POTENTIAL CONSERVATION/NATURAL AREAS



Oakland County 2004 Potential Conservation/Natural Areas

Planning & Economic Development Services
 Executive Office Building
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Environmental Stewardship Program 
 Planning & Economic Development Services
Map Created: April, 2004

Conservation/Natural Areas

-  Priority One
-  Priority Two
-  Priority Three
-  Lakes & Rivers

0 1 2 3 4 Miles 

HISTORIC/CULTURAL RESOURCES

ARCHAEOLOGICAL RESOURCES

As of 1980, Oakland County had 246 archaeological sites recorded, including several in White Lake Township. These sites range from the earliest Paleo-Indian period, through the Archaic, Woodland and Historic periods.²⁶ The majority of artifacts found in Oakland County come from the Archaic period and occur along the interface between the glacial lake bottom in Southeast Oakland County and the hilly upland glacial moraines and till plains to the northwest. HRA falls within this interface. Future discovery is possible. Also, metal detecting is permitted in certain areas of the park. Any items found must be reviewed by park staff and may be retained for further archeological investigation.

HRA may potentially have areas of archaeological significance since it is near the headwaters of the Huron River, it is on the site of several glacial moraines, has a lot of undeveloped land, and it is close to the Detroit area.

BUILDINGS AND STRUCTURES

There are a variety of structures and remnants of structure of historic interest within the park.

Edsel Ford Estate

Much of the park was acquired from the Edsel Ford Estate. There are a variety of unique structures within the park that were originally constructed by the Fords as a retreat from urban life. Most of the buildings require substantial restoration efforts due to changing use trends and vandalism.

The *Gate House* was located at the entry to the Ford property. It was originally the residence of Edsel Ford's farm superintendent, and then later was occupied by the manager of Highland Recreation Area. The exterior is wood shingled. There is a unique weathervane on top of the garage. The garage and house are connected by a roofed walkway. This structure has been badly vandalized and is no longer in use.

The *Ford Lodge* was constructed between 1924 and 1926. It was built with cedar logs reportedly transported from Ford Company's timber holdings in the Upper Peninsula, wrapped in burlap and sawed into half logs on the property. The lodge included five fireplaces and chimneys made of Vermont stone. The wrought iron hardware was handmade in the Upper Peninsula.

An adjacent garage (*Annex*) was constructed of similar materials to the garage. It housed family cars during the Ford era and served as a residence for the chauffer.

The Lodge was converted to a conference center from 1949 until 1963, when legislators responded to criticism that the State was catering to wealthy interests, at the expense of the public and closed the Lodge to future rentals. The Lodge Annex was used as an Environmental Education Center in the 70's.

The Lodge was rented to a film crew in the 1990's as location for a horror film. The film crew damaged the Lodge and surrounding areas, and left without restoring the harm.

In 1999, the Lodge was lost to fire. The perpetrators were later caught and prosecuted. All that stands today are the fireplaces, stone steps, and foundation.

There are also remnants of a *kidney shaped swimming pool*, a *wading pool* and the foundations of a *bathhouse*. There are also the remnants of a *clay tennis court* made of clay imported from France.

The annex still stands, but is vacant and has been vandalized. Staff made the effort to wire peeling bark back to the underlying logs in the 90's, which appears to have preserved the integrity of the log structure.

There is a *pump house* built in the side of the hill at the Lodge which still contains a Model T engine used to power the pumps during power outages. Water was drawn from a well 318 feet below the surface by a turbine pump, and stored under pressure in two 9000 gallon tanks. The pump house is in excellent condition.

The *Farm Group Buildings* included buildings which housed thoroughbred riding and jumping horses and milk cows. The unit also included the residence for a stableman, a milk room and a tack room. A riding ring for Edsel's children was located east of the Farm Group Buildings. These buildings were converted to a workshop area for use of the park staff.



The *Sheep Barn* is a unique structure which originally housed 1500 sheep. Edsel Ford disposed of the sheep, since they were prone to disease, and used the barn to store feed for cattle and horses. At one time, the Sheep Barn was used as an area warehouse by the Department of Natural Resources. The exterior is finished with wood shingles. The Sheep Barn is no longer used. The roof is collapsing and many windows are missing. In 2007, the Friends of Highland Recreation Area was organized, with an initial mission of stabilizing the barn. The roof was secured for the winter season, but then was partially destroyed by high speed straight line winds that Spring. The group intends to pursue significant fundraising and undertake additional restoration projects in hopes that the barn can be opened for future public purposes.



Haven Hill Dam was constructed in 1926, creating a 62-acre impoundment by damming Cedar Creek. The dam is in acceptable condition, and is inspected regularly under the dam safety inspection program.



Dodge 10 Park

The *Caretaker's House* was built in the mid 1920's. It is built with a stone foundation and wood siding. The bungalow was renovated between 1933-34 by the CCC. The house was used as a residence of a park employee for many years. It is now vacant and in need of renovation.



The *Caretaker's Garage/Office* was built by the CCC. It's exterior is wood sided, and has double-wide wooden garage doors. It is currently vacant, and needs repairs to the roof.



The *Combination Shelter* is a stone and hewn wood structure also built by the CCC in the late 1930's. There is now a dropped ceiling, which hides the original wood rafters. The shelter is in good repair, with a working kitchen and bathrooms. It is rented for picnics.



There is also a waist high cast iron stove with the embossed letters of "Michigan State Parks"

The state still rents a *Rustic Cabin* on Pettibone Lake Road to the public. The cabin is constructed on a concrete block foundation. Its exterior is sided with small half logs placed vertically. Inside, the walls are covered with knotty pine siding. It has two bedrooms, a sleeping balcony, a living-dining room and small kitchen. The concrete basement includes a full bathroom, added by the DNR.

There is also an outdoor stove at the cabin, constructed of stone and cement. Two small stone wings flank the stove.

Other sites of interest include:

- The Alderman Lake Dam, constructed in 1952
- An empty house with aluminum siding at 1010 Livingston Road
- An empty house with aluminum siding and several outbuildings at 2284 Livingston Road
- A vacant house on Duck Lake Road

EDUCATION AND INTERPRETATION

The MDNR operated the Haven Hill Nature Center at the site of the Edsel Ford estate from 1973 through the 1980's. Currently, the DNR does not operate interpretative or educational programs within the HRA. The Nature Center has fallen into disrepair and has been subject to vandalism.

RECREATIONAL RESOURCES

DEVELOPED OPPORTUNITIES

Day Use Areas

There are a variety of day use areas within the HRA, including the following:

Teepie Lake: Swimming beach, boat launch, picnic shelter with restrooms, water, and hiking trails.



Moore Lake: Boat Launch



Lower Pettibone Lake: Boat Launch, fishing docks.



Dodge 10: Picnic shelter with kitchen, modern bathrooms, running water, ball field and open field game area. Also access to walking trails from abandoned horseman’s camp and boat launch. A paved parking lot is available for use by users. A run-down caretakers cabin and garage are also located at the site.



Alderman Lake: Boat Launch, fishing docks.



Goose Meadow (Haven Hill Lake): Picnic Area with vault toilets, potable water, ball fields and a paved parking lot.



Camping

There are 25 rustic/equestrian campsites. The equestrian campground has vault toilets and pressurized water supply. There is also an organizational campground, which provides an open field area adjacent to Teeple Hill for the exclusive use of groups such as boy scouts, girl scouts, etc. Vault toilets are available.

At Bass Lake, a rustic cabin is available for rental for a small party. The cabin is accessible from a long private drive off Pettibone Lake Road. There is no boat launch at this site.

Hunting

Rabbits, squirrel, grouse, woodcock, ducks, geese, raccoon and deer may be hunted during their respective seasons within designated areas.

Fishing

Several lakes offers excellent fishing for bass, pike, and panfish.

Bridle Trails and Riding Stable

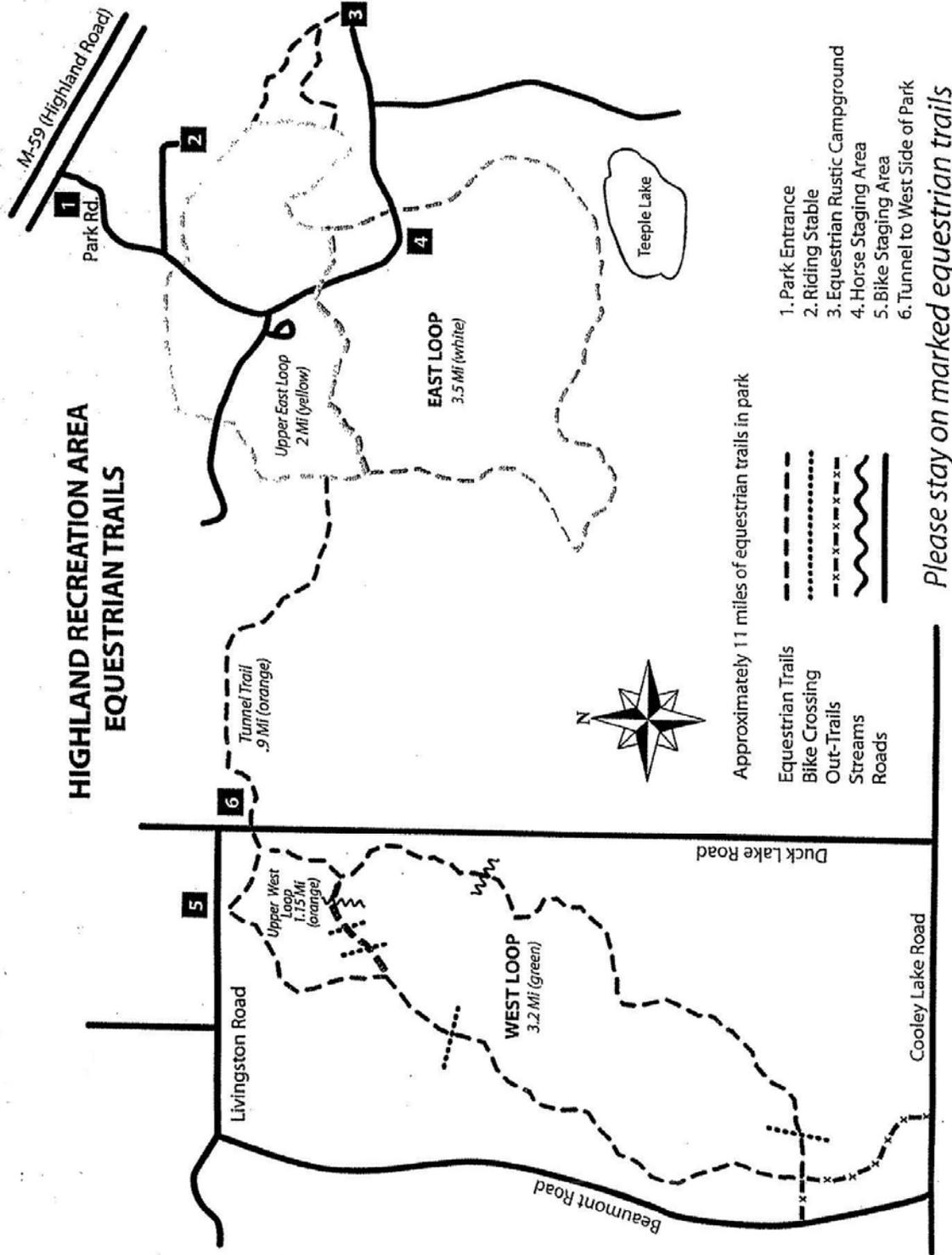
There are 12 miles of trails for use by equestrians. The Highland Trail Riders Association is an active partner in maintaining trails through their stewardship activities. The trails cross under Duck Lake Road in a culvert large enough to allow passage of a horse. Trailers may be parked at the Horse Stable off the main park road or at the horse staging area indicated on the map that follows.

The State of Michigan also leases a riding stable and equestrian concession stand within the park to a private individual who operates a business providing equestrian lessons and trail riding horses for hourly use to the public and providing boarding for privately owned horses. The facilities include a barn, pastures and trails. The operator provides food, riding accessories, sports wear and riding souvenirs to the public.



Trail Crossing under Duck Lake Road

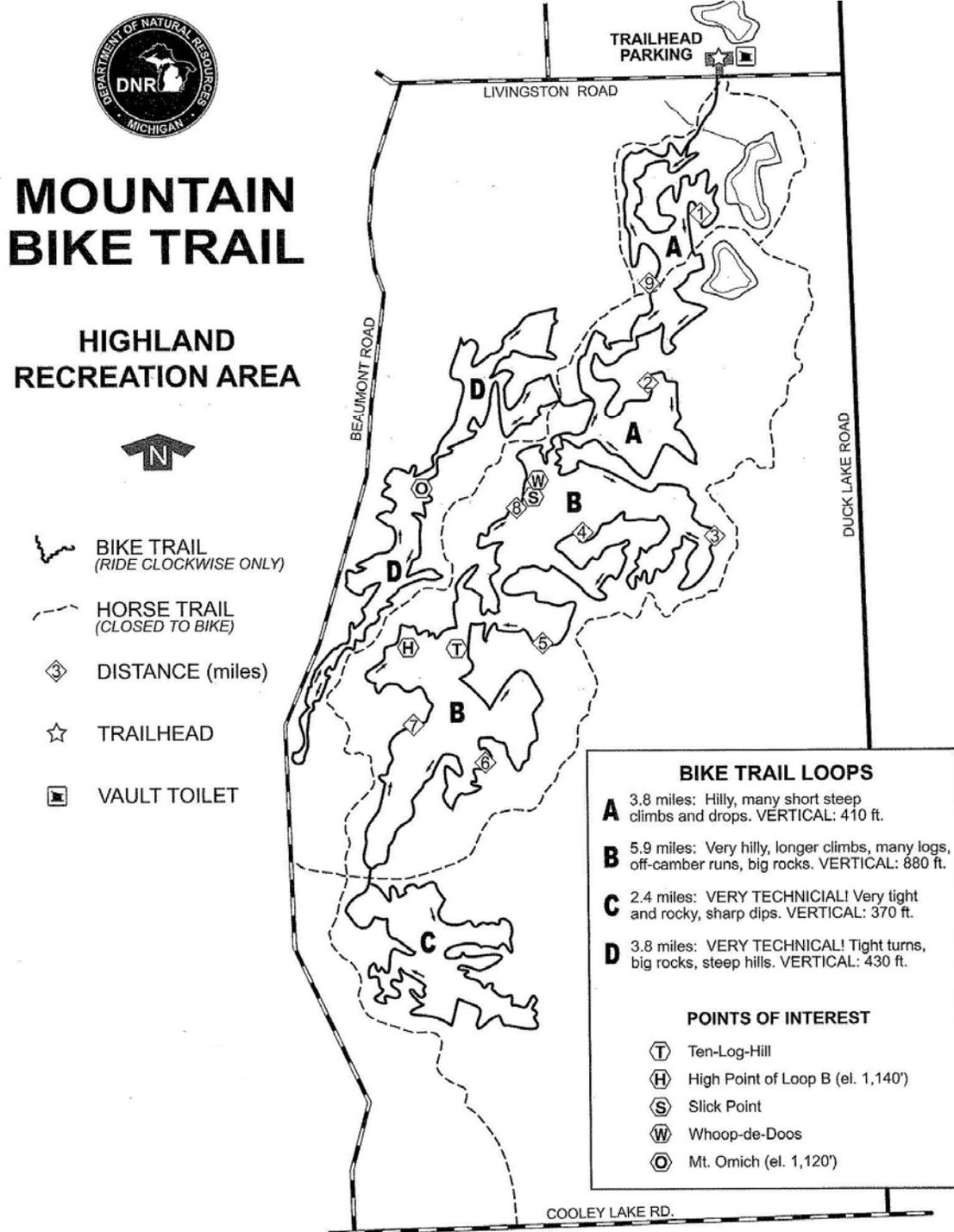
MAP OF HORSE TRAILS



Mountain Biking

There are 16 miles of mountain bike trail. Equestrian and mountain bike trails are separate to promote safety for all users.

MAP OF MOUNTAIN BIKING TRAILS



Hiking & Cross Country Skiing

There are approximately 17 miles of hiking trails, including the Haven Hill Trail that crosses the Haven Hill Lake Dam and includes an extensive boardwalk across the wetlands. There are trailheads for foot trails at Goose Meadow and at the old Sheep Barn near Teeple Hill. The trailhead for skiers is located at Goose Meadow.

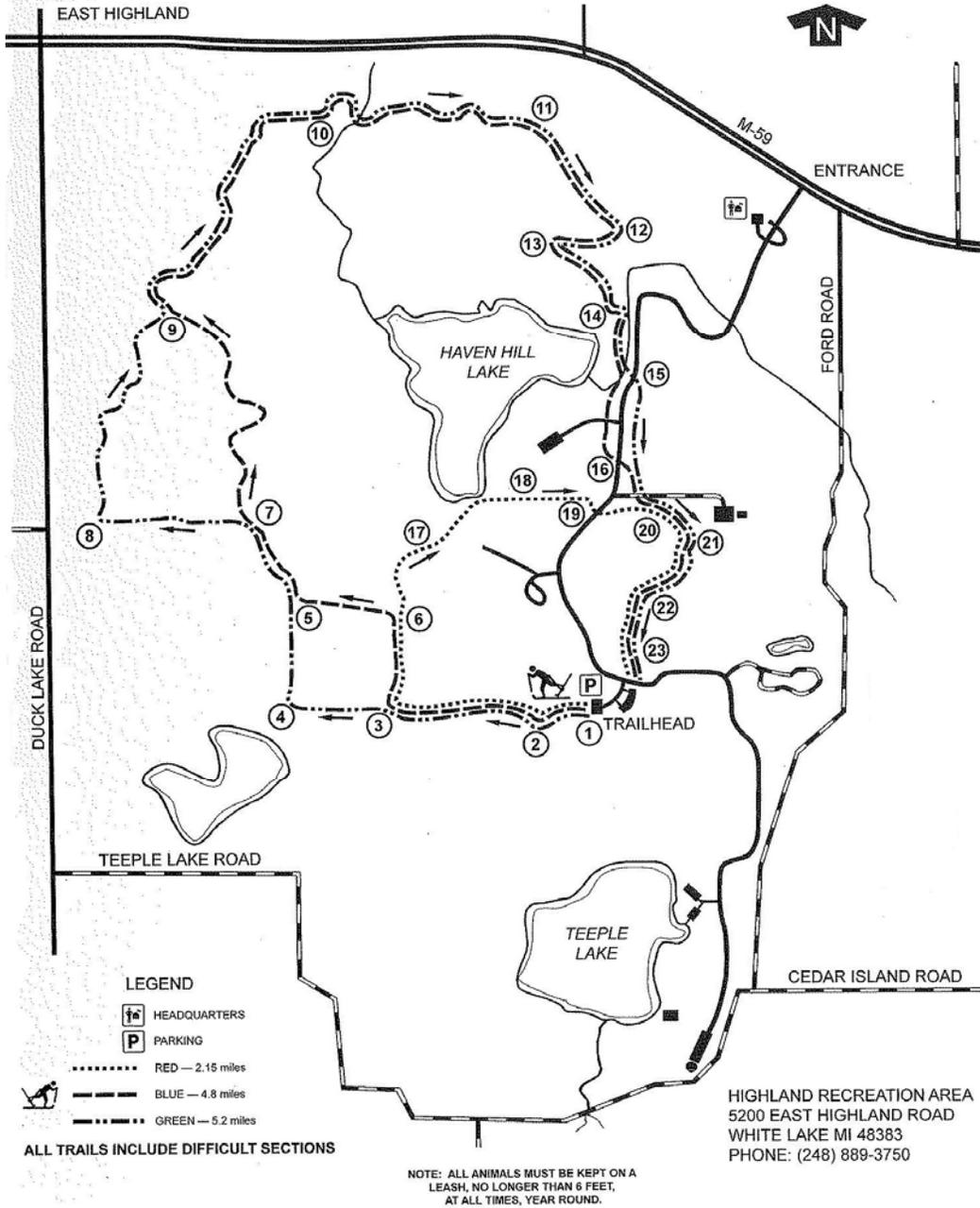
The Boy Scouts of America use a trailhead at the Organizational Camp as the beginning of the Chief Pontiac Trail, a 16.7 mile narrow foot trail that runs through Highland Recreation Area south to the Proud Lake Recreation Area and ending at Kensington Metro Park. Literally thousands of scouts have hiked the trail over the years, and have completed a written essay to earn their credential medal.

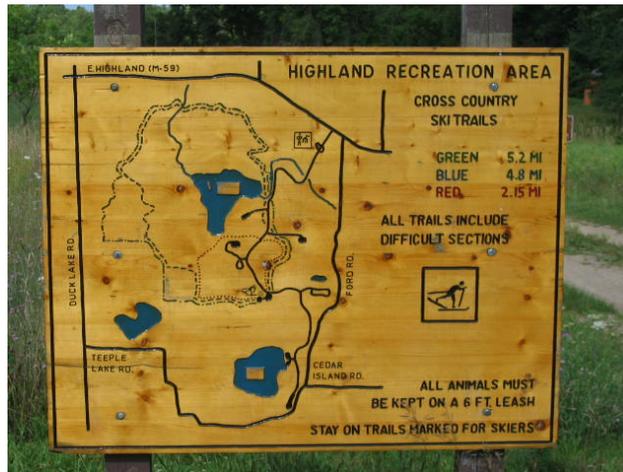


MAP OF CROSS COUNTRY SKI TRAILS

DNR Michigan Department of Natural Resources
Parks and Recreation

Highland Recreation Area Cross Country Ski Trail





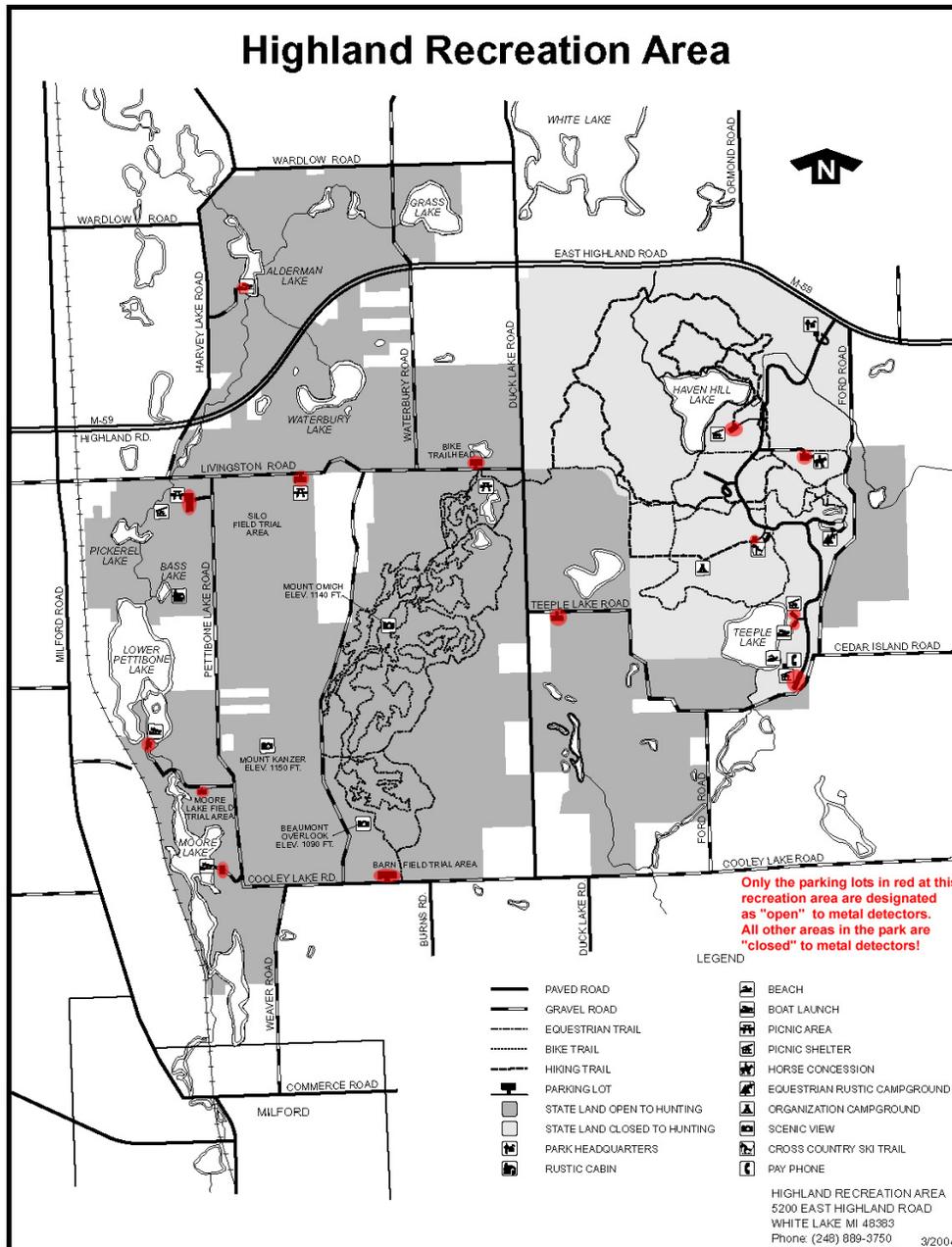
Snowmobiling

Snowmobiling is permitted in designated areas of the park, provided there is a base of snow four inches deep.

Metal Detecting

Metal detecting is recognized as a legitimate recreational activity when it is conducted in ways that do not damage the natural and cultural resources in Michigan State Parks nor violate applicable state statutes. Metal detecting is allowed only in certain areas. Any items found must be reviewed by park staff and may be retained for further investigation.

AREAS WHERE METAL DETECTING IS ALLOWED



Radio-controlled Airplane Flying

The State of Michigan leases a building and gated area known as the “Flying Field” to the United Flying Organization (UFO) to provide a safe location for the flying of model aircraft. The members are granted a lease for non-exclusive access to this area for monetary consideration, subject to rules that dictate the hours of operation, flying season limitations, noise levels, and obligations for payment of utilities and telephone services and insurance. The site is accessed from Teeple Lake Road.

This location was the site of the now closed “Willard Landfill”. There are no active remediation efforts at this site, but it is presumed that environmental considerations may impact planning of any potential uses or development at this location.



Birdwatching

There is ample habitat for birds and other wildlife, especially forest-interior songbirds in the various oak forests and the Haven Hill Natural Area, wetland birds, and grassland-dependent birds at the field trial area. Bird watching is a popular activity in the park.

Field Dog Trials

Field dog trialing is a competitive sport where hunting dogs with their human partners, often on horseback, demonstrate their mastery of skills such as tracking, flushing and retrieving game birds. Rules and scoring systems are established for each breed. Field dog trials can be sanctioned by national organizations such as the American Kennel Club.

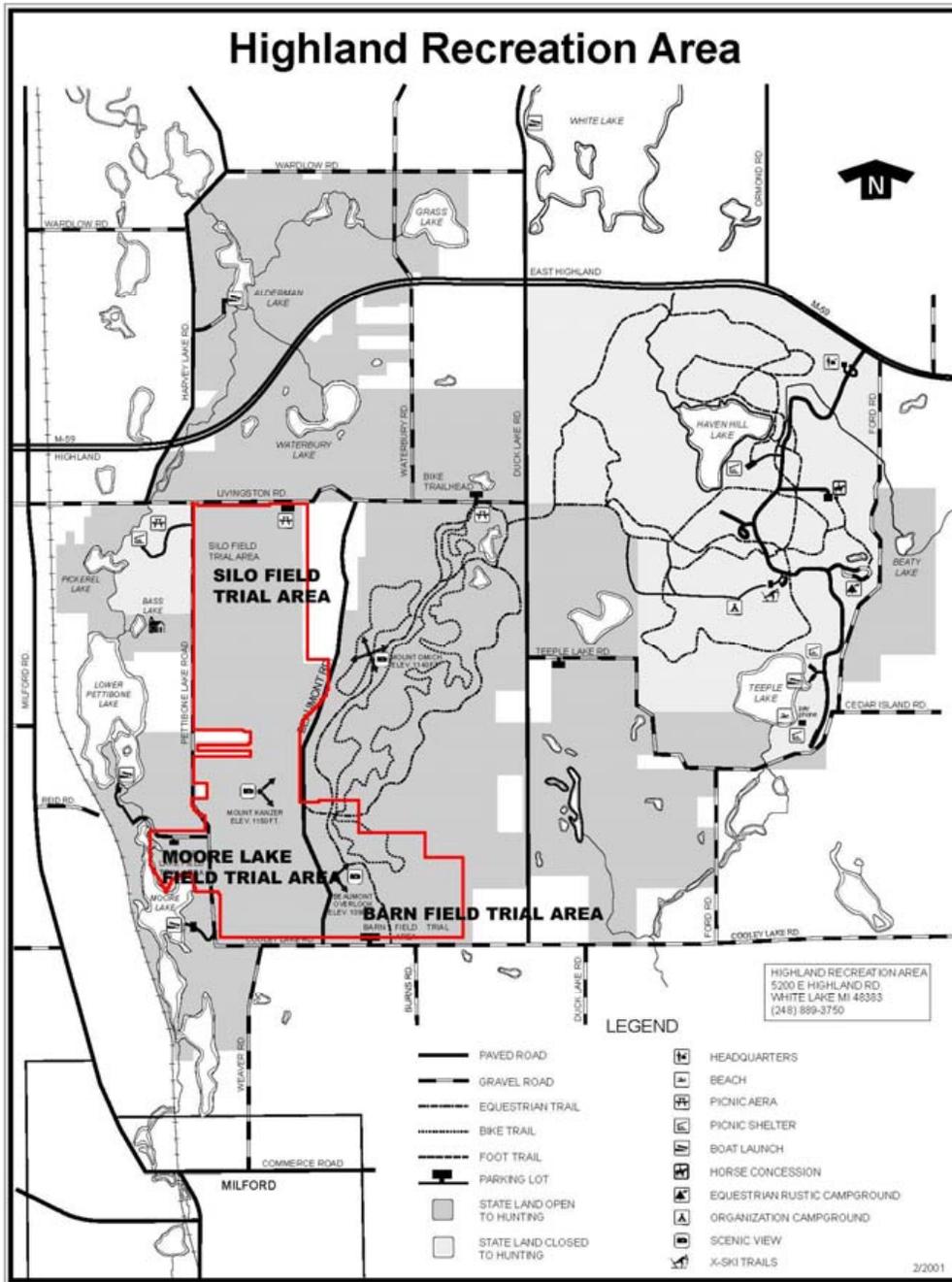
There are 929 acres designated as the Highland Field Trials Area (HFTA) by the Natural Resources Commission under the authority of Act 57 of the Public Acts of 1995 (section 324.42104 of the MCL) This land is dedicated for training, trialing and hunting with field dogs, and is under active stewardship

through agreement with user groups to restore native ecosystems and wildlife habitat. The area is used for dog training, hiking, hunting, and other general recreation.

The Highland Field Trial Grounds Association is an active user group representing 14 dog clubs that utilize the HFTA. In 2006, the group was awarded the “Partners in Conservation” award by the MDNR to honor the more than 2000 hours of volunteer work that the group has spent in clearing 9.5 acres of invasive species and planting 13 acres with native plants. Generally speaking, each of the 14 dog clubs is specifically dedicated to the promotion and betterment of a specific breed of hunting dog, but work cooperatively in the scheduling of training and competitive events at the site.

With 14 dog clubs, there are competitive events scheduled many weekends of the year, some drawing competitors from throughout the state and throughout the country.

MAP OF FIELD TRIAL AREA



AREAS OF CONFLICT

Trails

The major recreational issues faced by HRA involve trail use, hunting, ORVs, and snowmobiles. Largely through the stewardship activities of user groups, hiking, mountain bike, and equestrian trails have been realigned to satisfy each group. However, the popularity of trail-related recreation has future implications. There remains pressure on HRA to increase the number and configuration of trails. Trails, like other features of the built environment, are durable. They last a long time. Any change to trails can upset a dynamic balance in the ecosystem for a long time. Although user groups have worked to manage trails through volunteer efforts, the repercussions of increased trail density to habitat may be unknown and beyond the efforts of those engaged in trail maintenance. For further analysis of trail development see DNR's *Southern Michigan Trails Program Management Plan*, completed in 2000.

Hunting

Hunting is one of the major uses of HRA, particularly in the Highland Field Trial Area. However, newer residents, who are often not as familiar with hunting, may object. Noise and perceived danger are part of the objection. The growth of population and increased use of the park may increase conflicts among hunting and non-hunting groups. Parts of HRA were purchased with Pittman-Robertson funds and other 'Game Fund' sources, which were specifically intended to provide public hunting access.

ORVs

Off-road vehicles (ORV's) are prohibited within the Highland Field Trial Area and Haven Hill Natural Area. Due to the growth in population and close proximity of houses to the park, it is quite accessible to ORVs. There is some evidence of ORV use in areas throughout HRA. Any type of trail can be used by an ORV, which is often a four-wheeled "quad" or a two-wheeled "dirt bike." Any increase in trails may have the effect of increasing ORV use. Also, it is difficult to control ORV usage. HRA rangers patrol the park on foot or in trucks. ORVs can simply outrun or outmaneuver park rangers, due to their size and speed.

Snowmobiles

Snowmobiles are permitted in some areas of HRA, provided that there is a four inch base of snow. With the unpredictability of weather and the relatively moderate level of snowfall in Southeast Michigan, it is difficult to estimate the total number of days in a year in which snowmobilers can legally access the park. However, there is evidence of ruts and tracks left by riders who have not observed the four inch snow base limit. Like ORVs, snowmobiles are fast and highly maneuverable. Enforcement is difficult. They may also access areas and trails within the park that are not meant for their use.

Camping

This campground is a multi use campground that accommodates equestrian campers and others. Equestrian groups often complain that other campers do not understand or respect the needs of horses and their owners, creating excessive noise and violating the privacy of the horse owners by approaching the horses without permission. Consideration should be given to review and revision of rules, increased enforcement effort or providing a separate camping facility specifically for horses and their riders.

Beach Use

The beach has never been closed at HRA due to E. Coli. It is tested regularly by the Oakland County Health Department, in accordance with DEQ and EPA regulations.

LAND USE ORDERS OF THE DIRECTOR

There are legal requirements at all state recreation areas and state owned facilities that are classified as *land use orders of the director*. These specifically allow or restrict certain recreational uses and activities at the park.

By authority conferred on the Director of the Department of Natural Resources by Section 504 of Act No. 451 of the Public Acts of 1994, as amended, being section 324.504 of the Michigan Compiled Laws and in accordance with R 299.671 and R 299.922 of the Michigan Administrative Code, the Director of the Department of Natural Resources orders that the following order of the Land Use Orders of the Director shall read as follows:

Chapter V - State Parks and Recreation Areas

5.1 State parks and recreation areas, certain conduct prohibited.

5.1. A person shall not do any of the following in any state park or recreation area:

(1) Possess or use fireworks in a manner prohibited by section 243a of Act No. 328 of the Public Acts of 1931, being § 750.243a of the Michigan Compiled Laws.

(2) Have more than 1 horse for each registered camper at any designated horsemen's campground without first obtaining proper written permission from the department.

(3) Without first obtaining proper written permission, peddle or systematically solicit business of any nature; distribute handbills or other advertising matter; post signs on any lands, waters, structures or property; or use any portion of a state park or recreation area for commercial operations.

History: Iss. Sept. 17, 1993; Am. 10, 1995, Post Oct. 23, 1995.

Chapter VIII - Department Administered Lands and Facilities

8.2 State-owned lands, prohibited conduct, exceptions.

Order 8.2. A person shall not do any of the following upon state-owned lands administered by the department when the land is posted against such conduct except with written permission or when such conduct is performed as an official duty by a federal or state employee or local officer or member of an organized rescue or fire fighting force:

(1) Possess ash wood (*Fraxinus* spp.) upon any state lands unless that ash wood is without bark attached.

(2) Possess regulated deciduous cut firewood on state lands outside of a regulated area.

(3) A regulated area means those areas as defined by the emerald ash borer interior quarantine, published by Michigan Department of Agriculture under the authority of insect pests and plant diseases, 1945 PA 72.

History: Iss. Am. 1, 2005, Post May 6, 2005

Note that there are no specific additional requirements related to Highland Recreation Area, although there are certain prohibitions at state owned boat launches in the near vicinity that are administered by staff at HRA (White Lake access, site 63-6 and Tipsico Lake access, site 63-18)

PARK USE STATISTICS AND ECONOMIC IMPACTS

PARK USE

Highland RA, proximate to metropolitan Detroit, is located within one hour drive of 42% of the population of Michigan. There were 243,040 recreational visits to HRA in 2005. Of those visits, 97 percent were to the day-use area, while the other 3 percent are attributed to camping. Total revenue for 2005 was \$132,804.

Characterization of park use is described as follows: (based on DNR-Park Attendance Statistics for 2005)

- Summer Use Season – This is defined as the five month period of May through September. 90% of all camping and 62% of all day-use takes place during these months. 91% of cabin use takes place in this period.
- Fall Use Season – At Highland RA, the fall season is defined by the months of October through November. October is the highest use month of this season that accounts for 4% of all camping activity in the park. The same is true of day-use, with 12% of all day-use taking place primarily in October. During this season, cabin use is only 2%.
- Winter Use Season – December through February marks another decline in park camping activity, accounting for only 1% of camping use and no cabin use. Day-use activity is relatively strong, with 14% of day-use during this season.
- Spring Use Season – March through April shows increasing park use in camping and cabin use. Camping use is at 5%, day-use is at 12%, and cabin use is at 7%. In this season, use continually increases as the weather warms up. April is the busiest spring month for day-use.

From “MI CRS Statistics 2005“ report by Spherix (most recent report), the state contractor that administers the Campground Reservation System (CRS), Highland RA was the lowest ranking park in Michigan with 592 campground reservations in 2005. (Reflects the limited opportunity provided with only 25 campsites)

From the same source, the following statistics (2005 data) are attributable to Highland RA:

- Highland RA had gross revenues from camping in 2005 of only \$11,957.
- The average amount paid per reservation at Highland RA was \$25.17, well below the state average of \$66.49. The high in the state system was \$134.08 at Grand Haven SP on Lake Michigan, and the low was \$22.10 at Newaygo State Park.
- The average number of people per reservation was 3.9, well above the state average of 2.7, and the highest in the state.
- The average length of stay was 1.7 days, well below the state average of 2.5 days.

Camping

HRA has \$104,926 revenue from camping over the last five years.(2001-2005) and a total gross revenue for the park of \$632,017 for the same time period. While camping represents only 3% of total use, revenues generated by camping average 16.6% of the total for the park.

Economic Summary of Highland Recreation Area

Year	Total Reservations	Number of Visitors	Gross Revenue
2001			\$115,727
2002			\$112,990
2003			\$127,441
2004			\$143,055
2005			\$132,804

Source: MI CRS Statistics and PRD

Revenue: Park Improvement Fund

NAME of UNIT	2001	2002	2003	2004	2005	AVERAGE
HIGHLAND RECREATION AREA	\$115,727.00	\$112,990.65	\$127,441.50	\$143,055.57	\$132,804.70	\$126,403.88
SEVEN LAKES STATE PARK	\$150,862.88	\$189,856.37	\$174,632.68	\$230,077.90	\$245,694.28	\$198,224.82
PONTIAC LAKE RECREATION AREA	\$333,800.65	\$399,646.57	\$367,588.05	\$439,094.95	\$445,768.31	\$397,179.71
BRIGHTON RECREATION AREA	\$278,172.95	\$373,463.93	\$375,509.60	\$338,373.52	\$449,434.25	\$362,990.85
PROUD LAKE RECREATION AREA	\$333,441.93	\$383,686.28	\$313,545.66	\$405,329.94	\$355,906.95	\$358,382.15
STERLING STATE PARK	\$476,812.64	\$151,909.59	\$574,182.75	\$814,223.15	\$756,624.24	\$554,750.47
HOLLY RECREATION AREA	\$322,799.27	\$434,687.86	\$413,046.40	\$415,510.08	\$445,258.75	\$406,260.47
PINCKNEY RECREATION AREA	\$476,708.01	\$612,923.64	\$572,319.70	\$662,127.90	\$685,001.71	\$601,816.21
METAMORA HADLEY REC. AREA	\$302,947.09	\$448,482.75	\$435,566.00	\$437,857.44	\$532,937.00	\$431,558.06
LAKEPORT STATE PARK	\$369,200.56	\$589,129.39	\$624,071.25	\$682,678.20	\$555,936.62	\$564,203.20
ALGONAC STATE PARK	\$335,169.26	\$621,652.98	\$599,485.88	\$440,737.68	\$743,705.11	\$548,150.18
TOTAL	\$3,495,642.24	\$4,318,430.01	\$4,577,389.55	\$5,009,066.33	\$5,349,071.92	\$4,549,920.01

ECONOMIC IMPACTS

Michigan State University (Dr. Dan Stynes) developed an economic analysis model known as "[MGM2](#)". This model is an update of the MGM model developed by Dr. Ken Hornback for the National Park System in 1995. The purpose of the updated MGM2 model is to estimate the impact of park visitor spending on the local economy. These economic impacts are reflected in terms of sales, income, employment, and value added.

This analysis tool, like others, relies on three primary factors in the common equation:

Economic Impact of Tourism Spending = Number of Tourists (x)
Average Spending per Visitor (x) Multiplier (to estimate extended effects of direct spending).

For our purposes of conducting a very basic review of impacts, we have utilized the "MGM2-Short Form" version of the program, which simplifies the extent of analysis required for input, and utilizes more generalized multipliers for spending outputs. For the non-economist, this provides an excellent tool for establishing a baseline assessment of the economic impacts of our parks.

Economic impacts of Pontiac Lake State Recreation Area to the local community are substantial. Following are the relative economic impacts (based on 2005 data) of the park to the surrounding community.

Direct Economic Effects to the Community

- Direct spending attributable to HRA visitors totaled \$2,542,000 of which \$2,313,000 came from day-use, and \$229,000 came from camping.
- Jobs totaled 67, with 61 related to day-use activity and 6 to camping.
- Personal income total is \$882,000, with \$803,000 associated with day-use of the park and \$79,500 associated with camping
- Value added (total income plus business taxes) totaled \$1,337,000. Day-use accounted for \$1,217,000 and camping accounted for \$120,000.

Total Economic Effects to the Community

(NOTE...this reflects *Direct Effects* plus the *Secondary Effects* of visitor spending on the local economy. *Secondary Effects* (sometimes called *Multiplier Effects*) capture economic activity that results from the recirculation of money spent by the park visitors in the community.

- Total Spending = \$3,670,000 (44% over direct spending)
- Jobs = 84 (25% over direct job impacts)
- Personal Income = \$1,289,000 (46% over direct personal income)
- Value added = \$2,041,000 (53% over direct value added)

STAKEHOLDER INPUT

DNR PROGRAMS

Highland RA maintains a relationship of cooperative management with other Department programs.

The Forest Management Division (FMD) administers prescribed burns at Highland RA. Ecologists evaluate possible sites and prepare an ecological prescription for FMD. The fires are coordinated and monitored by trained officers who follow a burn plan. The oak barrens restoration program associated with the Field Trial Courses is conducted by Stewardship and is dependent on fire to maintain the natural ecosystem.

Marketing, Education and Technology Division (METD) will play a vital role in partnership with the County and private sector partners to implement new interpretative programs envisioned for the former Ford Estate.

The Office of Land and Facilities (OLAF) is responsible for all land ownership records on DNR land, as well as land transactions. OLAF is responsible for the purchase and disposition of parcels to consolidate state holdings within the park boundary.

The Land and Water Management Division (LMWD) is responsible for overseeing dam safety inspections.

The Water Bureau (WB) is responsible for overseeing public water and wastewater treatment/disposal for the campgrounds and day use areas.

The Law Division provides enforcement of state law and Natural Resource regulations on the park property.

LOCAL AGENCY PROGRAMS

There are several local agencies within the surrounding area that serve as stakeholders.

Local Fire Departments – Highland Township, White Lake Township and Milford Area Fire Departments each serve as first responders to various areas of the park. Ambulance services stage their services at the local stations.

Local Law Enforcing Agencies – The Oakland County Sheriff’s Department, White Lake Township Police Department and Milford Police Department enforce laws in and around the park within their respective jurisdictions. The Oakland County Sheriff’s Department maintains a substation just north of Livingston Road, near the west edge of the park.

Oakland County Planning and Economic Development Services (OCPEDS) – OCPEDS is involved in a variety of projects related to “New Economy” initiatives through placemaking, trail planning, and other green infrastructure programs. OCPEDS recognizes the significance and opportunities presented by the park and is an active and enthusiastic stakeholder. OCPEDS provided technical support for preparation of this plan.

Highland Township and the Highland Downtown Development Authority – Highland Township identifies the natural features and recreational opportunities present at Highland Recreation Area as one of the keystones to its “placemaking” efforts. Highland Township is interested in establishing its “Highland Station” area as a western gateway in the park and partnered with the Department in facilitating and preparing this plan.

Road Commission for Oakland County (RCOC) -- RCOC is responsible for maintaining a number of roads within and adjacent to the park.

OTHER STATE AGENCIES

Michigan Department of Transportation (MDOT) is responsible for maintaining M-59 (Highland Road), which passes through the park and delineates much of its northern boundary. The primary entrance to the park is from M-59.

PRIVATE SECTOR

All adjoining property owners are categorically a stakeholder. There are also a variety of local business interests in Highland Township, White Lake Township and the Village of Milford which are considered stakeholders. Park users don’t spend their money just at the park. A significant amount of commerce takes place at local stores and restaurants.

SPORTING CLUBS

Many clubs and associations are very active in the park.

Highland Trail Riders Association and Kensington Trail Riders Association – These groups have worked closely with park management to develop and maintain trails for equestrian use.

United Flying Organization – This group holds a non-exclusive lease to land in the southeast corner of the park and maintains facilities for the operation of remote control aircraft.

Highland Field Trial Grounds Association (HFTGA) – This group maintains the Field Trial Courses, coordinates and manages training events and competitions, and works closely with Stewardship to restore the oak barrens ecosystem at the Field Course areas. In 2006, the HFTGA was recognized with a “Partners in Conservation Award,” recognizing their donation of time, money, and construction of a picnic shelter. The group has blended its mission of preserving the sport of dog field trialing with conservation of biological diversity.

Michigan Mountain Biking Association (MMBA) – The Metro South Chapter of the MMBA organizes trail workdays at parks throughout southeast Michigan, including Highland RA. Their members use the park extensively.

SPECIAL INTERESTS

The following groups have an interest in the use of Highland RA.

Friends of Highland Recreation Area (FOHRA)—FOHRA was organized in 2007, and began work in earnest on raising funds and renovating the historic sheep barn. Despite the discouraging damage the barn sustained in a straight line wind storm, the group continues on its mission of rehabilitating the historic/cultural assets of the park and promoting the natural assets of the park. The group has entered a lease agreement with the DNR to further their work in the park, and has worked to develop relationship with other special interest groups such as the Boy Scouts, Highland Equestrian Conservancy, Highland Conservancy, and numerous other local special interest groups.

Huron Valley School District (HVSD) – The school district utilizes the park for a variety of purposes: the summer latchkey program, outings to train students about watershed protection, and as training grounds for athletic teams such as cross-country track and equestrian.

PUBLIC

Many of the park visitors who come to Highland RA each year are repeat customers. This is true system wide, as has been documented in the 1997 “Michigan State Parks Study” by Public Policy Associates and has been observed by park staff. These “regular customers” have specific expectations and desires for the future management of the park.

PLANNING OVERVIEW

Meetings:

10/1/2008 Start-up meeting
04/14/2009 Planning Team Meeting
05/20/2009 Planning Team Meeting
08/25/2009 Stakeholder meeting
11/12/2009 Public input meeting

Plan Reviews:

10/20/2010 PRD Management Team
9/15/2010 SLP Ecoteam
01/04/2011 DNR Statewide Council
03/28/2011 NRC – MSPAC – Stewardship Subcommittee
04/07/2011 NRC – Michigan State Parks Advisory Committee (MSPAC)