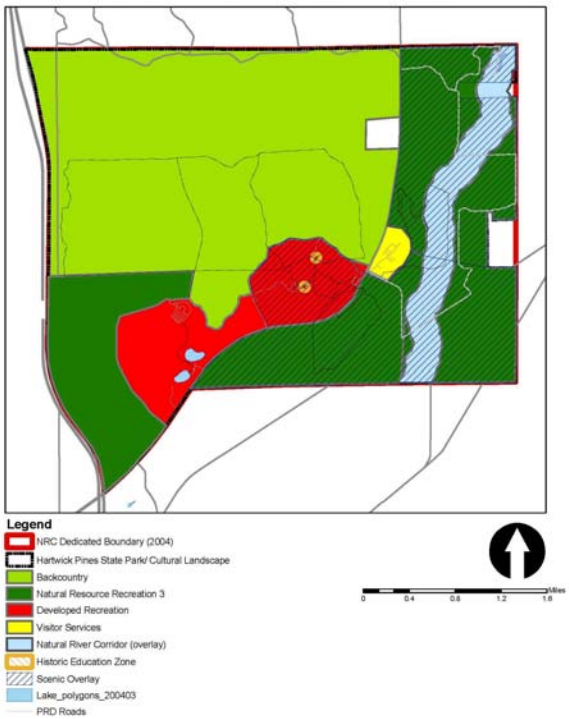
March, 2012

GENERAL MANAGEMENT PLAN

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

Hartwick Pines State Park



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_____ _____
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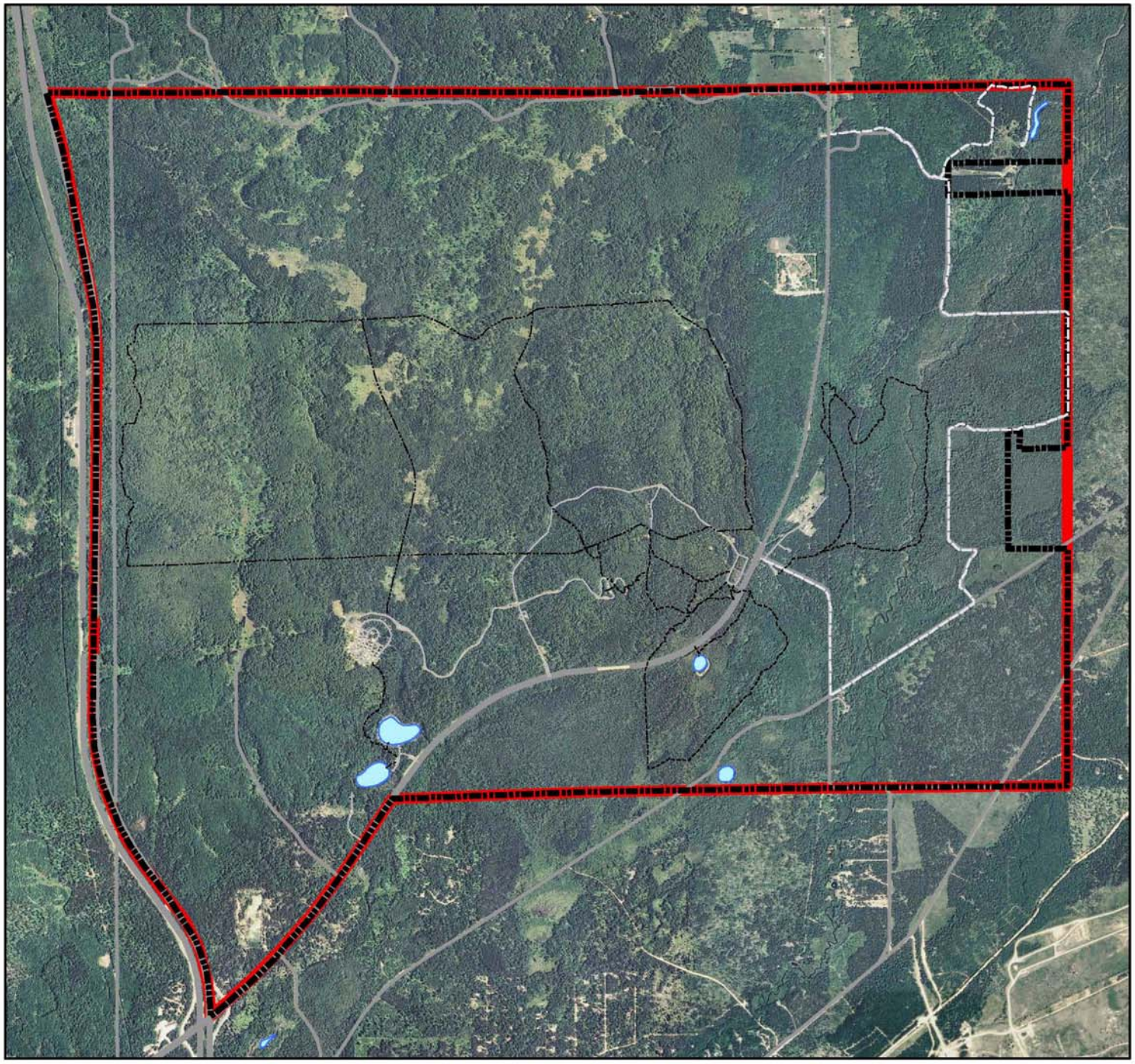
_____ _____
Deputy Director, Natural Resources Date

_____ _____
Director, Michigan Department of Natural Resources Date



Legend

- NRC Dedicated Boundary (2004)
- Hartwick Pines State Park/Cultural Landscape
- Lake_polygons_200403
- PRD Roads

0 0.3 0.6 0.9 1.2 Miles

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EXECUTIVE SUMMARY

Management Planning is a defined strategic process within the Parks and Recreation Division 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."

Long-range planning for Hartwick Pines State Park (SP) began in October of 2006 as one of many parks statewide where a new planning philosophy was implemented. "Management Planning", a comprehensive, resource based process, is Parks and Recreation Division's (PRD) adaptation of National Park Service planning methodology. In our iteration of 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.

With this base of knowledge and with input of the "Planning Team" (made up of Department resource staff, stakeholders and public), we established an 'identity' for the park. The key components that make Hartwick Pines SP unique are threefold**:**

First, is the importance to follow the indenture between Karen Hartwick and the State of Michigan dated on October 3, 1927. This was the main principle for the establishment of the now Hartwick Pines State Park located in Grayling, Michigan which provides varied recreational and educational opportunities including a 100 campsite modern campground, hiking and biking trails, interpretive trails, and a modern visitors center that focuses on the importance and impact of timber to Michigan.

Second, Hartwick Pines State Park follows the Parks and Recreation Division of the Michigan Department of Natural Resources mission statement by protecting and preserving the natural, historic, and cultural features of Michigan's unique resources (7,963.49 acres with 49 acres of Old Growth Forest, information available on page 43 in regards to why this stand of trees survived being cut), providing public recreation and safe public access to inland waters of the State of Michigan (numerous recreational opportunities, four inland Lakes, East Branch of

the AuSable River) and providing educational and interpretation opportunities (Michigan Forest Visitor Center and Hartwick Pines Logging Museum).

Third, Hartwick Pines State Park provides an unique look into the ecological importance to the different land cover, communities and the home to at least 11, with the possibility of 5 more endangered, threatened, or special concern plant and animal species such as: False Violet (*Dalibarda repens*, threatened plant), Rough Fescue (*Festuca scarrella*, threatened plant), Hill's Thistle (*Cirsium hill*, special concern plant), Bald Eagle (*Haliaeetus leucocephalus*, special interest species), Red-shouldered Hawk (*Bueto lineatus*, special interest species), Dusted Skipper (*Atrytonopsis hianna*, special interest species), Eastern Massasauga Rattlesnake (*Sistrurus catenatus Catenatus*, special interest species), Red-legged Spittlebug (*Prosapia ignipectus*, special interest species), Grizzled Skipper (*Pyrgus centaureae Wyandot*, special interest species), Secretive Locust (*Appalachia arcana*, special interest species), and Blanding's Turtle (*Emydoidea blangingii*, special interest species). In addition to these animals the potential for five other special interest species exist in the park because of the available habitat: Northern Goshawk (*Accipiter gentilis*), Cooper's Hawk (*Accipiter cooperi*), Prairie Warbler (*Dendrocia discolor*), Blazing State Borer (*Papaipema beeriana*), and the Wood Turtle (*Clemmys insculpta*).

The Management Zone Plan is found on page 16, and a thorough review of all seven zones accompanies that graphic. A condensed review of all the zones applied at Hartwick Pines SP is as follows:

<u>Backcountry Zone:</u> This 3761.55 acre zone (47.2% of the park) is located in the northwest section of the park. It is characterized by a natural, wooded habitat, with minimal evidence of human impact, the primary purpose of its designation. This zone will maintain an emphasis that reflects the natural processes. While increased use is allowed in this zone, focus on low-impact recreation exists.

<u>Natural Resources Recreation Zone:</u> Totaling 2721.8 acres (34.18% of the park), this zone includes entire east side of the park, down to the southern middle, and the southwest corner. The zone is characterized by pine tree terrain and two small lakes. More active recreation, with medium- to high-density use takes place here, with hunting and trail use for hiking and biking. There remains an emphasis on resource quality over recreation, but higher levels of recreational use are allowed.

<u>Developed Recreation Zone:</u> This 860.52 acre zone (10.81%) is located in the southern middle section of the park. The zone includes several historical cultural resources, including the Michigan Forest Visitor's Center, the Hartwick Pines Logging Museum, and the Old Growth Forest Foot Trail. This zone features active recreation with higher-density use than in the Natural Resources Recreation Zone, and is not designated for natural resource significance.

Visitor Services Zone: This 73.08 acre zone (less than 1% of the park) is located in the central eastern portion of the park where the headquarters is located. This zone encompasses the developed areas required for park administration and operations. It includes offices, contact stations, maintenance facilities, and all related land base required to conduct the business of operating the park. In this zone, natural resources are generally modifiable to support administrative needs of the park.

Natural River Zone: Established to focus on the specific needs of the "AuSable River Natural River Plan", the 543.7 acres (6.83% of park) in the zone will be managed in a natural condition. Limitations on man-made intrusions will exist, as well as goals of maintaining natural vegetative cover and high water quality.

History Education Zone (Overlay): This zone, totaling just over 4.9 acres (less than 1% of park land) of park land, includes the Michigan Forest Visitor's Center and the Hartwick Pines Logging Museum. Education opportunities are plentiful here, and this aspect provides the focus of the zone. Cultural and historic resources are restored and interpreted for visitor understanding and enjoyment.

Cultural Landscape Zone (Overlay): This zone identifies unique cultural resources within the park. Remnants of the 19th century lumber industry, occupation of this land by settlers, and several CCC-era features are scattered throughout the park, allowing the park boundary line to serve as the indentifying boundary. As an overlay, this zone designation serves to preserve these resources, while the underlying zones provide the management guidance.

Scenic Zone (Overlay): This 2782.86 acre (34.95% of the park) zone highlights areas of the park significant for their scenic value. As an overlay, this zone designation serves to preserve these special viewscapes. The underlying zones provide overall management guidance.

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 stages of planning, implemented in the following order:

- General Management Plan (GMP) - 20-year long-range goals
- 10-Year Action Plan - long range action goals to attain the GMP
- 5-Year Action Plan – specific actions to implement
- Annual Action 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 stage 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
- Recreational opportunities

These four elements represent the primary elements of the PRD Mission Statement, and provide the primary 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 define and clarify the unique "Purpose" and "Significance" of Hartwick Pines State Park. 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 this 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. Following are the names of those critical participants in this planning process:

Name	**Representing**
Anna Sylvester	PRD (Parks and Recreation Division)
Glenn Palmgren	PRD
Jon Gregorich	PRD
Josh Pellow	PRD
Paul N. Curtis, Chair	PRD
Ray Fahlsing	PRD
Troy Rife	PRD
Matt Tonello	CGI/SIRC (Center for Geographic Imaging/Spatial Information Resource Center)
Jon Spieles	OC (Office of Communications)
Kevin Frailey	OC
Patricia Stewart	OC
Craig Kasmer	OC
Sandra Clark	HAL (History, Arts & Libraries)
Phil Kwiatkowski	HAL
Rob Burg	HAL
Glen Mathews	WLD (Wildlife Division)
Elaine Carlson	WLD
Brian Bury	FD (Fisheries Division)
Steven Sendek	FD
Daniel Pearson	FD
Susan Thiel	FMD (Forest Management Division)
Dayle Garlock	FMD
Ada Takacs	FMD
Larry Pedersen	FMD
John Pilon	FMD
Tom Wellman	FMD
Laurence Allwardt	FMD
Laurie Marzolo	FMD
Sgt. Jean Davis	LED (Law Enforcement Division)
Ed Meadows	OLAF (Office of Land and Facilities)
Bruce Watkins	OLAF

Stakeholder Representatives

Alan Hartwick – Grandchild of Edward and Karen Hartwick
Bill Botti – Retired DNR Forester
Brad Jensen – Executive Director, Huron Pines RC&D
Dave Forbush – Forbush Corner Cross Country Skiing
Eric Icaacsen – Michigan Mountain Biking Association (MMBA)
Grayling Kiwanis Club
Grayling Regional Chamber of Commerce
Ilene Wilson – Grayling Visitors Bureau
John Heiam – President, Grand Traverse Hiking Club
Ken Westphal – Volunteer at Hartwick Pines Logging Museum
Lyle Klein – President, Friends Group of Hartwick Pines
Mary Jergins – District Representative for State Senator Tony Stamas
Northeast Michigan Council of Governments
River Park Campground of Grayling
Sam Richards – Interested Citizen
Terry Wright – Grayling Township Supervisor
Wayne Koppa – Chairman, Crawford County Multi-Use Pathways

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 Hartwick Pines State Park and subsequently reflected in any shorter range action plans:

DNR Mission Statement - *"The Michigan Department of Natural Resources is committed to the conservation, protection, management, use and enjoyment of the State's natural resources for current and future generations."*

PRD Mission Statement - "*Acquire, protect, and preserve the natural, historic, and cultural features of Michigan's unique resources, provide public recreation and safe public access to the Great Lakes and inland waters of the State of Michigan, and provide educational and interpretation opportunities."*

The core values derived from these statements are that PRD will acquire, preserve and protect; (1) natural resources, (2) cultural resources, (3) provide public recreation, and (4) provide educational opportunities.

Park Purpose - Park purpose statements are based on park legislation, legislative history, special designations and DNR policies. These statements reaffirm the reasons for which Hartwick Pines State Park was identified as part of the State Park system.

- Follow indenture between Karen Hartwick and The State of Michigan on October 3, 1927.
    - Preserve land for park and conservation purposes.
    - Make lands known as the Edward E. Hartwick Pines Park.
    - Make timber on premises be properly protected.
    - Erect and maintain a memorial building on premises in memory of Edward E. Hartwick, and the lumbering industry.
    - Construct a roadway, now M93, running from the then State Trunk Line M27, the blinking light by Grayling High School, to park.
    - That if and when the park, at any future time, not used by The State of Michigan for the purposes listed, the premises shall revert to Karen Hartwick, her heirs, devisees, personal representatives, and assigns; and that The State of Michigan shall not sell or dispose of the premises.

Park Significance - 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 Hartwick Pines State Park. Understanding these

distinctions help managers make decisions that preserve those special resources and values necessary to accomplish the park's purposes.

- Way to educate constituents of forest management because of the ability to teach, learn and show how to manage areas
- Show what Michigan looked like before logging era, show site of Old Growth stands and real pine forest
- High bio-diversity value, rare species and natural communities
- Historical significance of logging
- Civilian Conservation Corps (CCC) history, ability to see real CCC Camp
- Quiet place to get away
- Tourism push back in the day, there used to be a sign at M27, now the blinking light by Grayling High School, was a key destination for people traveling north
- Destination stop to view old growth
- Numerous recreation opportunities and destination spot: camping, hiking, cross country skiing, wildlife viewing, hunting, fishing
- Visitor Center Destination: 1 of 7 in the state (other locations – Mitchell State Park, Waterloo Recreation Area, P.J. Hoffmaster State Park, Ludington State Park, Bay City State Recreation Area, Porcupine Mountains Wilderness State Park)
- Hemlock resources, not a lot in area
- Unique Friends Group
- Lumbering rail, rail grades, stump fields and small towns that were created in park
- Bicycle trail link to the City of Grayling
- Michigan National Guard training grounds in area
- Co-management with the Michigan Department of Corrections
- Located in the center of Michigan's Lower Peninsula with US-127, I-75, and M72 in close proximity
- Home to a Michigan Natural River (East Branch of the AuSable River)
- Developed campground with full hook-up campsites featuring direct sewer, water and electrical hook-ups with 20/30- or 50-amp service, 1 of 3 in the State of Michigan (other locations – Sterling State Park and Holland State Park)
- Year round interpretive opportunities that attract the public
- Wide variety of special events offered – Black Iron Days, Forest Fest, Wood Shaving Days, Maple Syrup Days
- Trout Fishing opportunities on the river, streams and four inland lakes
- Bright Lake Rustic Cabin
- Chapel in the Pines

Land Use & Legal Mandates/Restrictions–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 to not only state law, but also the administrative tools of “Policy” and “Directive” of the Natural Resource Commission, the Department, and Parks and Recreation Division. Examples include Wildlife Conservation Orders, Orders of the Director, and all other laws, commission orders, and rules or directives that apply to the park. Specific to Hartwick Pines State Park, the following legal mandates have been identified:

- PA 451 OF 1994, PART 741 - STATE PARK SYSTEM - NATURAL RESOURCE AND ENVIRONMENTAL PROTECTION ACT - This act is the recodification of law that established the Michigan State Park System and defined the powers and duties of same. Notable in this law is 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.”

- PA 451 OF 1994, PART 305 – NATURAL RIVERS - NATURAL RESOURCE AND ENVIRONMENTAL PROTECTION ACT
  Section 324.30502 of this Act states in part… “The department, in the interest of the people of the state and future generations, may designate a river or portion of a river as a natural river area for the purpose of preserving and enhancing its values for water conservation, its free flowing condition, and its fish, wildlife, boating, scenic, aesthetic, floodplain, ecologic, historic, and recreational values and uses”.

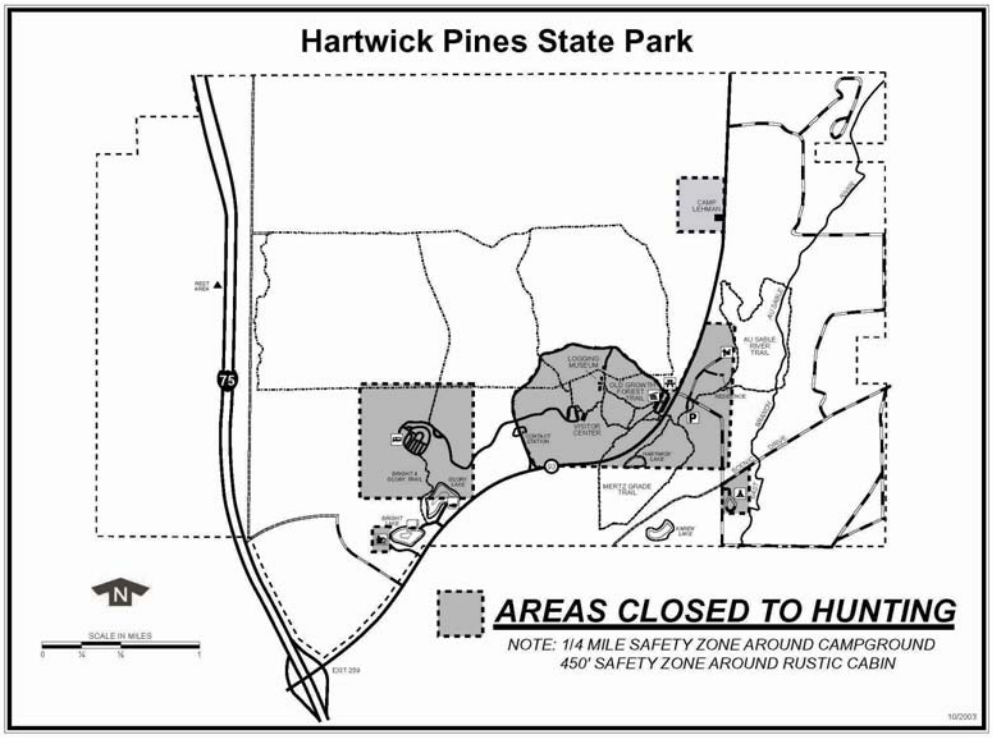
  It further states…”The Department shall prepare and adopt a long-range comprehensive plan for a designated natural river area that sets forth the purposes of the designation, proposed uses of the lands and waters, and management measures designed to accomplish the purposes.” The

Department prepared such a plan and the "AuSable River Natural River Plan of 1987 (revised March 12, 2002) "shall direct all activities influenced by the designation.

- PA 368 OF 1978, ARTICLE 12 - ENVIRONMENTAL HEALTH, PART 125 – CAMPGROUNDS – This Act was established to protect and promote the public health by establishing health code requirements specifically addressing campgrounds. The Department of Environmental Quality (DEQ), Drinking Water and Radiological Protection Division are 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 DEQ 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' "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' "Safety Zone" to encompass "Day-Use Areas" such as beaches, picnic areas, boat launches, and parking areas, should the need arise. This is determined on a case-by-case basis. At Hartwick Pines SP, the Hunting Safety Zones are represented below:

- 

RT 741 ("Recreation Passport")
This act amended the Michigan Motor Vehicle Code to provide for a State Park and State-operated public boating access site "Recreation Passport" that a Michigan resident may obtain by paying an additional fee when registering a motor vehicle. The Recreation Passport is required for entry into all PRD administered facilities and takes the place of the Motor Vehicle Permit (MVP) previously required to be displayed on the windshield.

- Dedicated Boundaries – The Natural Resources Commission reviewed and rededicated boundary changes for Hartwick Pines State Park in 2004.

- 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:

5.1 State parks and recreation areas, certain conduct prohibited.

Order 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.

3) Operate an unlicensed, wheeled motorized device capable of transporting a person on a park road or parking lot, unless otherwise permitted by posted notice. Use of such devices shall be permitted for individuals with mobility impairments.

History: Iss. Sept. 17, 1993; Am. 10, 1995, Post Oct. 23, 1995; Am. 16, 2007, Post Oct. 12, 2007.

GENERAL MANAGEMENT PLAN

With guidance of the Hartwick Pines State Park Planning Team (inclusive Department participation) and input from out stakeholders and the public, the park "Purpose and Significance Statements" were drafted and adopted. This established; the commitment between Karen Hartwick and the State of Michigan, the overall guidance of the Department of Natural Resources Parks and Recreation Division mission statement, the ecological importance to the different land cover and plant and animal species, and the special recreation and education opportunities that follow these important qualities of this park.

Based on this 'identity' for the park, a "Management Zone Plan" was subsequently drafted and adopted with stakeholder support and no public objection. The Management Zone Definitions apply to each zone used, with special considerations highlighted in the following descriptive narratives of management guidance for each zone of the park:

In concert with this analysis of the park, the Planning Team also established the appropriate Management Zones and their extent of influence on the park. From a pallet of nine standard zones, we utilized four for Hartwick Pines SP and used another two as an overlay of certain areas and zones in the park. We also created an additional 'non-standard' "Natural River Zone" to address specific management requirements of the protected East Branch of the AuSable River corridor.

The rugged, natural, wilderness-like conditions of the park ecosystem extends beyond the historic boundaries of the park. As properties are acquired within the new boundaries (and/or with expansion of boundaries) the appropriate zoning will have to be determined and applied.

The Management Zone Plan and a thorough review of all zones applied at Hartwick Pines SP is as follows: (Note…acreages given are approximate)

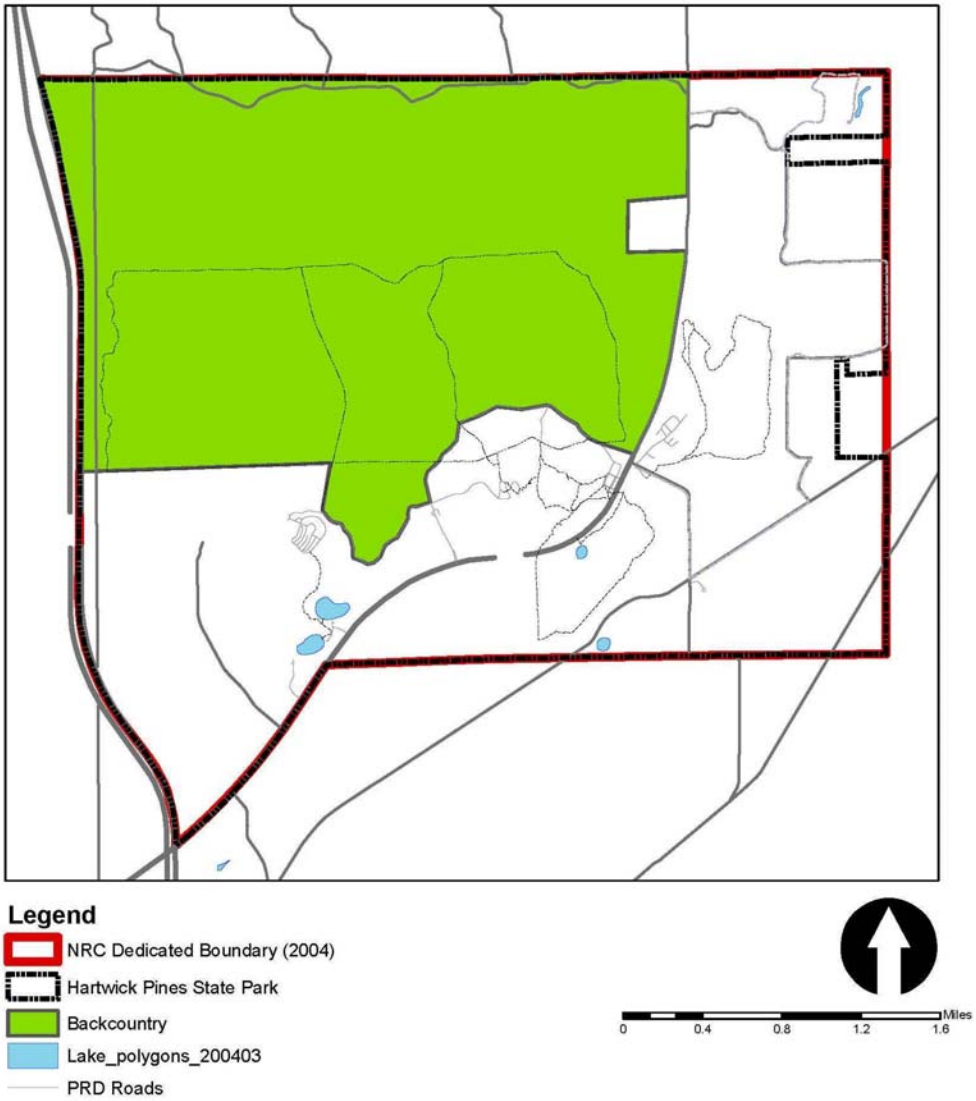
Legend

- NRC Dedicated Boundary (2004)
- Hartwick Pines State Park/ Cultural Landscape
- Backcountry
- Natural Resource Recreation 3
- Developed Recreation
- Visitor Services
- Natural River Corridor (overlay)
- Historic Education Zone
- Scenic Overlay
- Lake_polygons_200403
- PRD Roads

0 0.4 0.8 1.2 1.6 Miles

BACKCOUNTRY ZONE

Backcountry Zone – is comprised of 3761.57 acres (47.2% of the park) located in the northwest section of the park. The character of this zone is natural, with minimal evidence of human impact. This zone allows for increased use, including bicycles, and modifications of the landscape (i.e. trail development) to accommodate that use. Activities will be limited to hiking, biking on trails, and dispersed recreation for hunting, mushrooming, birding, and other low impact uses within this 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."



In this zone that represents approximately 48 percent of the total park acreage, the following values will be attained:

- Natural Resources – Maintaining the natural wooded habitat is a primary purpose of this designation. This zone will be maintained in a natural state, with only vegetative management allowed to address hazard trees, invasive species, and pests and disease.

- Historic/Cultural Resources – There is a known old logging camp near the railroad in this zone. Opportunity for interpretation of the site exists, while maintaining its historical significance to the area.

- Recreation Opportunities – In this zone, more use can be allowed, including low-impact activities such as hiking and bicycle trail use, hunting, fishing, mushrooming, birding, and other dispersed-use activities. No snowmobile, ORV, or ATV use is allowed in the zone.

- Education Opportunities – Interpretation of the zone and its characteristics and qualities can be presented through the use of kiosks at trailheads and interpretive signage along trails and at other locations.

- Visitor Experience – There is a high degree of 'natural' feel of the zone, but with more opportunity for contact with others along trails.

- Management Focus – Management of this zone will be focused on maintaining the relatively low-impact character of the zone. Mark and maintain clear boundaries of state ownership.

- Development – Improvements can include boardwalks, trails, observation overlooks/platforms, and bridges and educational or interpretive signage. Parking and road improvements will also be allowed in this zone. All development will meet the approval requirements of the planning process.

NATURAL RESOURCE RECREATION ZONE

Natural Resource Recreation Zone – is 2721.8 acres (34.18%) of park land that forms the whole east side of the park down to the southern middle, and the southwest corner. This land is characterized by pine tree terrain and two small lakes, Karen and Hartwick that are managed by Fisheries Division. In this zone active recreation with medium to high density of use conducted in natural areas takes place with trail use, hunting, and fishing on lakes. There is still an emphasis on resource quality over recreation, but in this zone, higher levels of uses are allowed. "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. Vegetation may also be managed to facilitate recreational use and maintaining an aesthetically appealing landscape."

Legend

- NRC Dedicated Boundary (2004)
- Hartwick Pines State Park
- Natural Resource Recreation 3
- Lake_polygons_200403
- PRD Roads

0 0.4 0.8 1.2 1.6 Miles

- Natural Resources – In general, the natural resources can be modified to support visitor activities. The primary long-term goal for this zone is eco-system management that promotes the diversity of native (natural) communities. Active vegetative management for the benefit of natural communities is allowed, as is control of invasive species, disease, pests, and hazard tree removal. The 'Natural River Zone' that provides protective measures for the AuSable River lies within this zone.

- Historic/Cultural Resources – There are no known resources within this area.

- Recreation Opportunities – General recreation takes place in this zone. The river is popular for canoe, kayak, and boat use and fishing. The uplands support hunting, birding, and trail use for hiking and biking.

  There is an organization area within this zone. Located on the SW corner of the intersection of Bobcat Trail and the Lewiston Grade, it can accommodate groups up to 100 people for group, day-use, and camping activities. Snowmobile use is only allowed on the seasonal road the Lewiston Grade, designated as a 'route of travel' in the winter. Snowmobile activity is limited to the Grade where it passes through park property; it is prohibited throughout the remainder of the park.

- Education Opportunities – The primary means of user access is by the various trails that extend throughout the zone. Informational kiosks at campgrounds, trail heads, and along the trails at critical locations are appropriate. Potential themes for educational messages include: the Story of Hartwick Pines, vegetative management techniques (i.e. clear-cuts, aspen, etc.) and the cultural resources of the park.

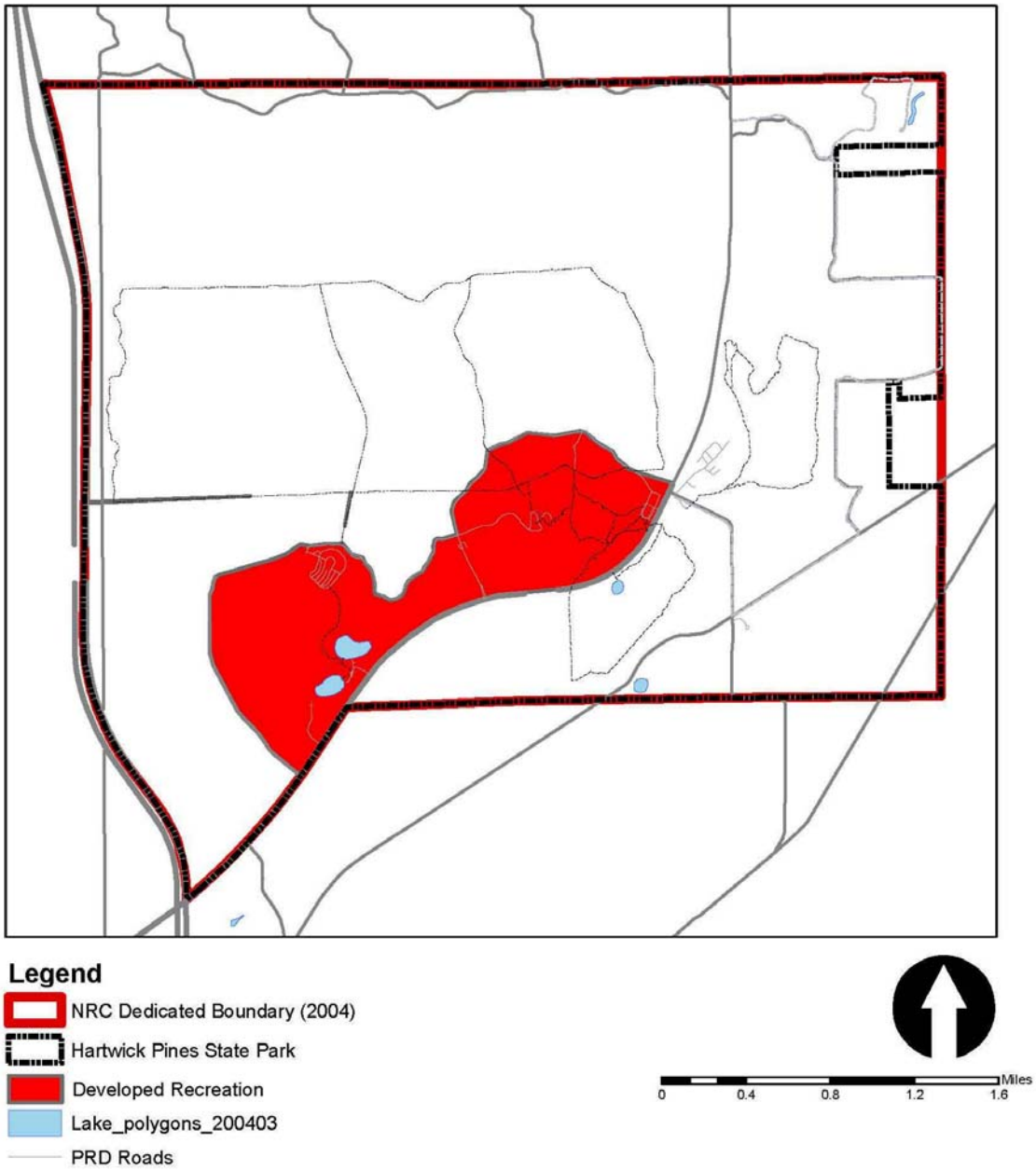
- Visitor Experience – The visitor can expect encounters with other park visitors any time of the year. The trails are a popular component and are used in all seasons. General use of this zone for hunting, fishing, and other dispersed activities can be expected.

- Management Focus – Maintain public awareness of the educational opportunities in this zone, and develop/maintain universal access to same. Provide/maintain signage for the hunting 'Safety Zone(s)' and maintain foot trails within this area. Mark and maintain clear boundaries of state ownership.

- Development – Development activity will compliment the educational efforts to interpret the natural and cultural resources and will address recreation needs. All development will meet the approval requirements of the planning process.

DEVELOPED RECREATION ZONE

Developed Recreation Zone – this 860.52 acre (10.81%) zone is located in the southern middle section of the park. It incorporates the modern campground, day-use area, Michigan Forest Visitor Center, Hartwick Pines Logging Museum, Old Growth Forest Foot Trail, and Bright and Glory Lakes. Active recreation with high density of use conducted in areas not designated for natural resource significance. In this zone, recreation dominates with natural resource attributes enhanced as possible. "Vegetative management in this zone will address hazard trees, invasive species, and pests and disease, and will also be allowed for purposes of facilitating development and recreational use and maintaining an aesthetically appealing landscape."



- Natural Resources – In this zone, active recreation dominates with natural resource attributes enhanced as possible. This area is not designated for natural resource significance. Hazard trees in 'target zones' will be identified and removed.

- Historic/Cultural Resources –Michigan Forest Visitor Center, the Logging Museum, the Hartwick Memorial Building, the Old Growth Trail, and the Chapel in the Pines, Robinson's Sawmill, and CCC Camp Hartwick Pines.

- Recreation Opportunities – This is the focus of this zone. Camping, picnicking, boating, fishing, trail use and general day-use activities are accommodated and encouraged. The modern campground provides fully modern camping for 100 sites, 35 of which are full-hook-up (water, sewer and electric).

- Education Opportunities – The Visitor's Center is a quality facility with opportunities for films to be presented in the theater on the logging history of the area, including Northern Michigan. In this most populated and visited of zones in the park is found the highest opportunity for guidance on education and interpretation of the entire park. The State Park Interpreter takes advantage of this in recruiting interest from campers for their interpretive programming year round, and this can be expanded upon.

  This program to date has focused on natural communities (flora and fauna). The opportunity exists for an expanded educational focus in this zone on the history of the park, the 'Natural River' designation of the AuSable River, and wildlife and fisheries management.

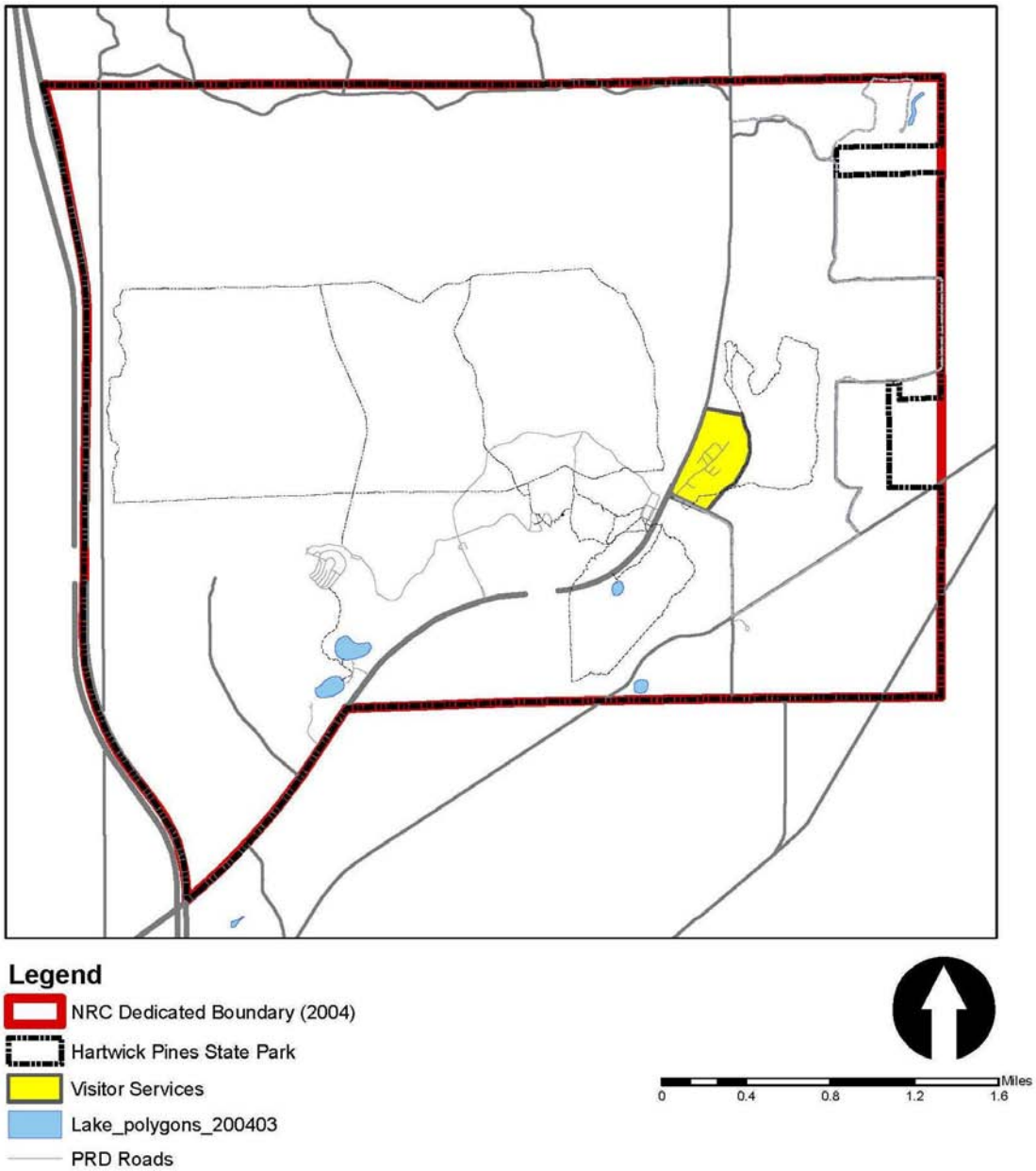
- Visitor Experience – With the focus of this zone being the developed campgrounds and other attributes, the visitor will experience a high level of encounters with other park visitors during the summer months. Hartwick Pines SP shows significant use from May (for trout fishing) through October (for hunters). **Hunting is not allowed within this zone.**

- Management Focus – Maintain the infrastructure that serves the intense public uses of this zone. Provide educational opportunities in the zone for the entire park, develop/maintain 'universal access' in the zone, and maintain public safety and good hospitality practices.

- Development – Provide 'universal access' improvements as needed to attain 'program' accessibility. Improve facilities to compliment education. All development will meet the approval requirements of the planning process.

VISITOR SERVICES ZONE

Visitor Services Zone – this zone houses the headquarters, shop, campground office, and storage/service area. It totals just over 73.08 acres (less than 1% of park land). This zone encompasses the developed areas required for program administration and operations. Typically it will include offices, contact stations, campground offices, maintenance facilities and all related land base required to conduct the business of running Hartwick Pines State Park. "Vegetative management in this zone will address hazard trees, invasive species, and pests and disease, and will also be allowed for purposes of facilitating development and recreational use and maintaining an aesthetically appealing landscape."



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

- Historic/Cultural Resources – There are no known Historic/Cultural Resources in this zone.

- Recreation Opportunities – None. This entire zone is closed to hunting and trapping.

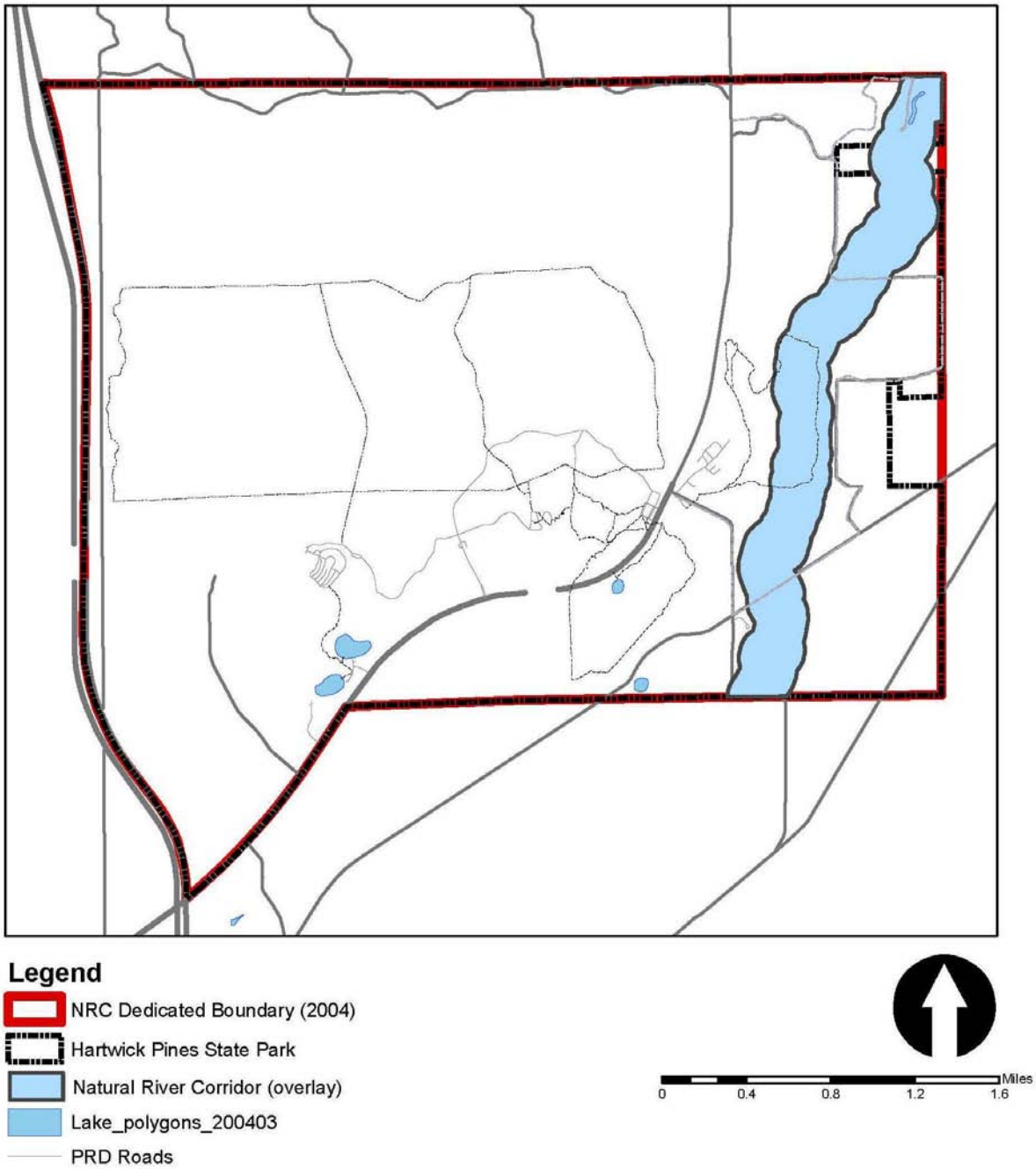
- Education Opportunities – Educational materials can be made available in the office 'public space', and office staff can provide verbal information. There is a great opportunity to direct visitors to other informational locations in the park.

- Visitor Experience – Visitor access at the office is limited to informational purposes.

- Management Focus – Provide public and employee 'Universal Access' (meet or exceed ADA requirements) to the contact station and office from the parking lot, and 'Universal Access' within the building. Assure security of offices, facilities and equipment. Provide a safe working environment for staff. Mark and maintain clear boundaries of state ownership.

- Development – Development in this zone will be for purposes of complimenting the administrative needs of the park, and meeting the needs for 'Universal Access' compliance. All development will meet the approval requirements of the planning process.

NATURAL RIVER ZONE



Natural River Zone – this 'non-standard' zone has been established to focus on the specific management requirements of the "AuSable River Natural River Plan" (See Appendix). In general, the river corridor (400' wide) will be managed in a natural condition, with specific limitations on man-made intrusions and specific goals of maintaining natural vegetative cover and high water quality. It comprises 543.7 acres of the park, roughly 6.83% of the park's total acreage.

- Natural Resources—**Maintaining the integrity of the natural habitat of the river corridor and water quality are the primary purposes of this designation.** The stream will be managed to comply with the Natural Rivers Act. Vegetative Management will be allowed for hazard trees, invasive species control, and pests and disease.

- Historic/Cultural Resources—The first crossing of the AuSable River Trail is home to an old swimming hole dug by the enrollees of the CCC Camp Hartwick Pines. Also near or within the Natural River Zone are remains of the Mertz logging railroad and other rail grades, as well as archaeological remains of "Foxtown", an old railroad/logging era settlement near the AuSable River Trail (approximately ¼ mile from the East Branch of the AuSable River).

- Recreation Opportunities—The AuSable River is popular for paddle sport and fishing activities. The impact of these activities must be carefully monitored to retain a quality water experience on the river. As a high-quality trout stream, the AuSable River and its tributaries offer excellent angling opportunities. Trails can enter and exit the zone for short durations. The natural conditions of these corridors will also provide opportunities for birders, and other low-impact recreation.

- Education Opportunities—Interpretation of the river, streams, and the Natural River Act can be presented through the use of kiosks at trailheads and interpretive signage along trails and at other locations.

- Visitor Experience—This will reflect the high degree of 'natural' feel of the zone and limited exposure to man-made improvements.

- Management Focus—Management of this zone will be focused on maintaining the 'natural' quality of the vegetation, the water quality for trout habitat, and controlling human disturbances and impacts.

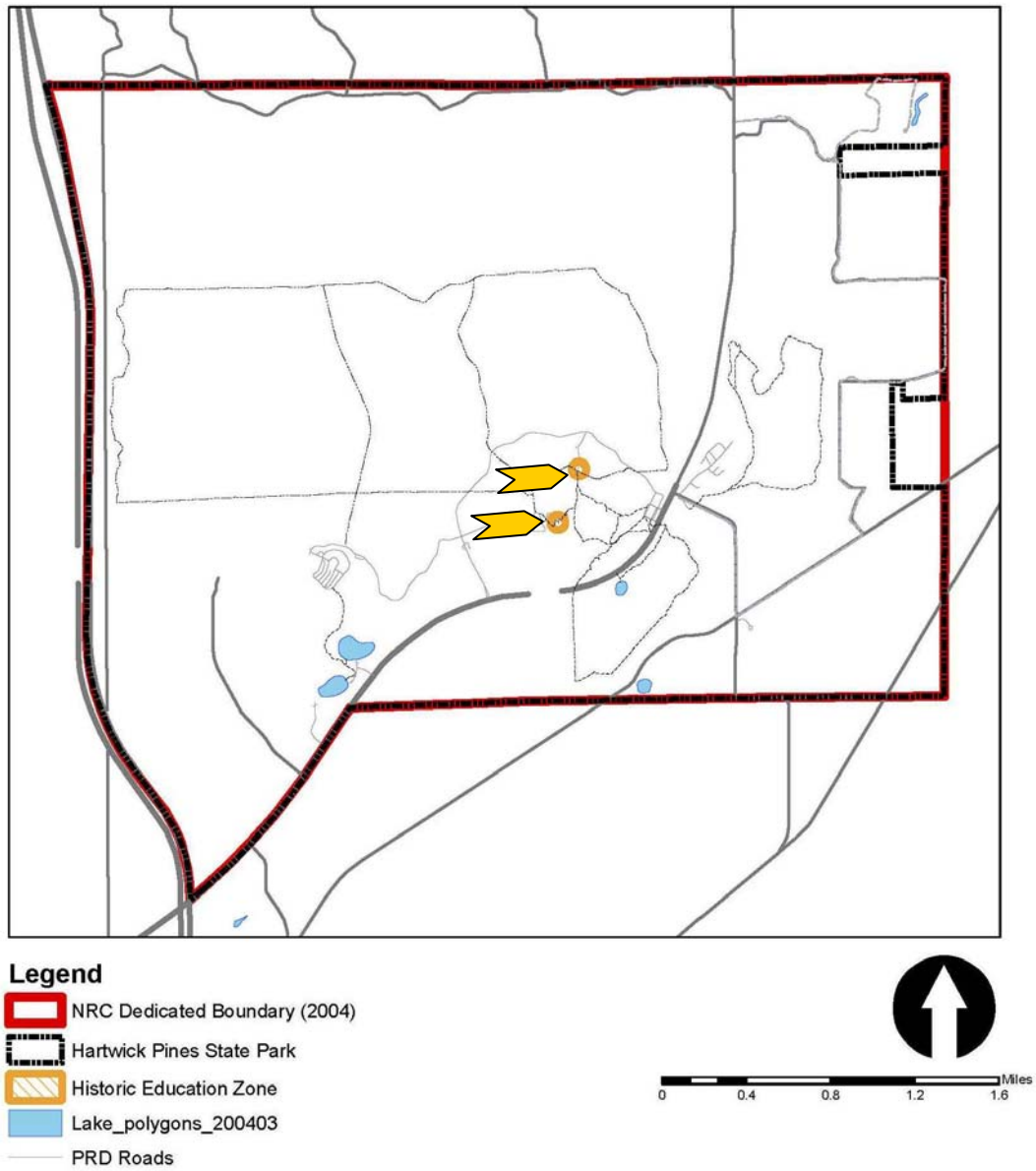
  Management will follow the specific guidance found in the "Natural River Plan—AuSable River" (See Appendix). Where compatible with the Natural River requirements, it will be a management focus to develop 'Universal Access' to the river for fishing and viewing.

- Development—Only trail improvements and educational or interpretive signage will be the evidence of man-made elements in this zone. All proposed developments must be reviewed and approved by the Natural Rivers Program of Fisheries Division.

  Where compatible with the Natural Rivers requirements, 'Universal Access' to the river for fishing and viewing will be developed.

HISTORY EDUCATION ZONE (OVERLAY)

History Education Overlay Zone – this zone encompasses 4.96 acres (less than 1% of total park land) and is an overlay within the Developed Recreation Zone (as notated by the arrows on the image below). The emphasis of this zone is "Education". Within the zone, cultural/historic resources are restored and interpreted for visitor understanding. A varying level of development will occur in this zone for management/control of people and traffic, protection of the resources, and historical interpretation. "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. Vegetation may also be managed to enhance education/interpretation uses and maintaining an aesthetically appealing landscape that is sensitive to the historical resource and interpretation of the zone." This zone identifies two specific locations in the park where active education and interpretation is provided. While cultural resources



are scattered throughout the park, the main focus of this zone is the logging museum and visitor's center/old-growth forest trail. Additional areas throughout the park have high potential for educational use and interpretation in the future.

- Natural Resources – In general, the natural resources can be modified to support visitor activities, provided it does not interfere with the cultural values identified and that it follows the limitations of the existing zone. These sites impact the Developed Recreation Zone, as such; the guidance for that zone will apply to the History Education elements found within it.

- Historic/Cultural Resources – **If any activity in this zone requires earthwork, it must first be reviewed and approved by the Stewardship Program staff of PRD.** The resources identified include: Michigan Forest Visitor Center and Logging Museum.

- Recreation Opportunities – This zone is established to highlight the historic and cultural qualities of times past. The recreation opportunities afforded in this zone will not interfere with nor hinder the appreciation of the cultural landscape being preserved and interpreted.

- Education Opportunities – Information regarding the key elements in this zone can be made available at the individual sites, and fortified through educational opportunities in the Developed Recreation Zone as well. The placement of informational kiosks is appropriate, as is the provision of educational programming.

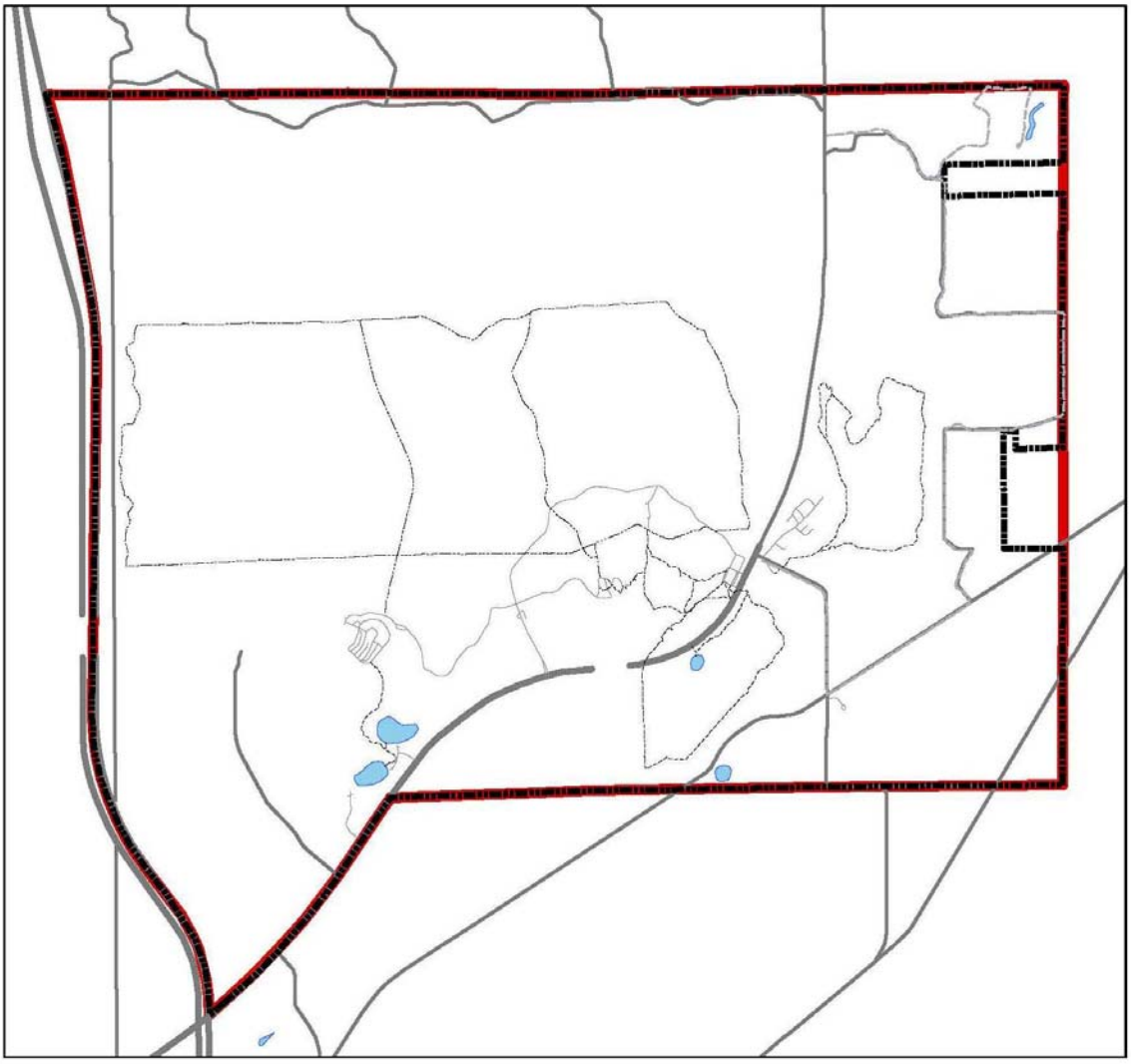
- Visitor Experience – The cultural features highlighted in this zone are representative of the early settlement of this land. This rich heritage will be appreciated by visitors with an interest in history. The visitor can expect encounters with other park visitors engaged in other activities.

- Management Focus – Preserve the historic integrity of the zone elements identified, incorporate "Universal Access" (including Americans with Disabilities Act (ADA) requirements), and implement educational efforts.

- Development – Development activity will focus on any identified restoration/preservation needs, incorporating "Universal Access" (including ADA requirements) for visitor access to the features, and meeting educational/interpretation needs.

CULTURAL LANDSCAPE ZONE (OVERLAY)

This zone identifies known cultural resources within Hartwick Pines SP. These resources are scattered throughout the entire park, and are remnants of the 19th century lumber industry, occupation of this land by early settlers and some CCC-era features from the 1930's. **The park boundary line serves as the identification of the boundary of this zone.**



Legend

- NRC Dedicated Boundary (2004)
- Hartwick Pines State Park/Cultural Landscape
- Lake_polygons_200403
- PRD Roads

Miles
0 0.4 0.8 1.2 1.6

- Natural Resources – In general, the natural resources can be modified to support visitor activities, provided it does not interfere with the cultural values identified, and that it follows the limitations of the existing zone.

  These cultural sites impact all zones within the park, and as such, the guidance for these zones will apply to the Cultural Landscape elements found within them.

- Historic/Cultural Resources – **If any activity in this zone requires earthwork, it must first be reviewed and approved by the Stewardship Program staff of PRD.** The resources identified include: the Hartwick Memorial Building, the Old Growth Trail, and the Chapel in the Pines, Robinson's Sawmill, and CCC Camp Hartwick Pines and some remnants of the 19th century lumber industry, occupation of this land by early settlers and some CCC-era features from the 1930's.

- Recreation Opportunities – This zone is established to highlight the cultural qualities of times past. The recreation opportunities afforded in this zone will not interfere with nor hinder the appreciation of the cultural landscape being preserved.

- Education Opportunities – Information regarding the key elements in this zone can be made available at the individual sites, and fortified through educational opportunities in the Developed Recreation Zone as well. The placement of informational kiosks is appropriate.

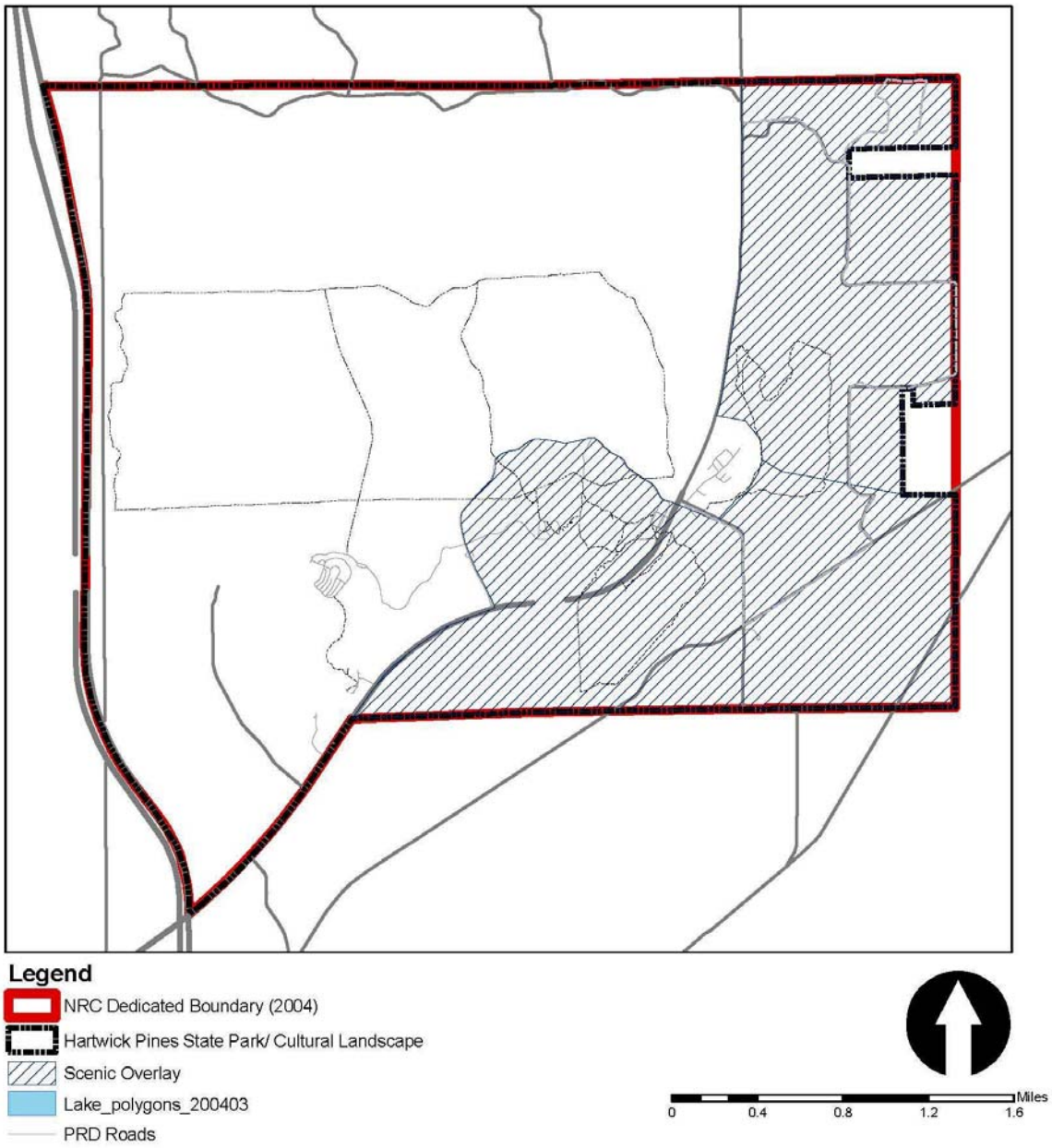
- Visitor Experience – The cultural features highlighted in this zone are representative of the early settlement of this land. This rich heritage will be appreciated by visitors with an interest in history. The visitor can expect encounters with other park visitors engaged in other activities.

- Management Focus – Preserve the historic integrity of the zone elements identified, incorporate "Universal Access" (including Americans with Disabilities Act (ADA) requirements), and implement educational efforts.

- Development – Development activity will focus on any identified restoration/preservation needs, incorporating "Universal Access" (including ADA requirements) for visitor access to the features, and meeting educational/interpretation needs.

SCENIC ZONE (OVERLAY)

Scenic Overlay Zone – 2782.86 acres (34.95% of park) is designated for this zone. It is defined by Karen and Hartwick lakes, the East Branch of the AuSable River, the Old Growth Trail, the Scenic Drive road system that meanders through diverse habitat and terrain and is an overlay of the Natural Resources Recreation Zone and Natural River Zone, which offers stunning views of the entire SP. The scenic zone recognizes that there are aesthetic qualities to be preserved and protected in Hartwick Pines State Park. "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. Vegetation may also be managed to enhance the viewscapes of the zone.



- Natural Resources –In general, the natural resources can be modified to support visitor activities, provided it does not hinder the scenic opportunities provided. The exception to this is that a portion of the 'Scenic Zone' is the AuSable River corridor, which is protected as the Natural River Zone. Along this corridor, natural resources will not be modified except to address hazard trees, invasive species, or resource protection. Exceptions to these allowable modifications are the Scenic Zone along the AuSable River and the Scenic Zone along the AuSable Trail.

- Historic/Cultural Resources –the Hartwick Memorial Building, the Old Growth Trail, and the Chapel in the Pines, Robinson's Sawmill, and CCC Camp Hartwick Pines are the known resources within this zone.

- Recreation Opportunities – The water-based portions of the zone provide opportunities for fishing exemplary viewing opportunities. The AuSable River offers exemplary viewing opportunities of unspoiled river settings. The trail system crosses the AuSable River for hikers to view the river.

  Finally, the passive activity of viewing from a car is popular with visitors who appreciate the park by taking an 'Auto Tour'. This is currently an informal activity, with park staff directing new visitors to view the various features of the park.

- Education Opportunities – There is a great opportunity for interpretive signage at staging areas for the trails, access points to the river, along the trails, as well as at the Hartwick Memorial Building, the Old Growth Trail, and the Chapel in the Pines, Robinson's Sawmill, and CCC Camp Hartwick Pines. Educational themes can have been expanded to include information on the logging era. The 'Auto Tour' is another opportunity for expanding the education/interpretation efforts.

- Visitor Experience – The scenic viewing within the park is a popular activity, and visitors will encounter others enjoying the views.

- Management Focus – Management must focus on maintenance of the views, and protection of the resource.

- Development – Any development in this zone must compliment the viewing opportunities. Educational kiosks and improvements to augment educational opportunities should be placed in a manner that compliments the views. All development will meet the approval requirements of the planning process.

FUTURE PLAN INSERTS

10-Year Action Plan (LONG-RANGE ACTION GOALS TO ATTAIN GMP) – Phase-2 of the Management Planning Process

5-Year Action (SPECIFIC ACTIONS TO IMPLEMENT) – Phase-3 of the Management Planning Process

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/supervisor to use to supplement this working document. Other categories can be added as needed.

- Annual Work Plan (NOTE…this should reflect the values and emphasis of the Zones established for the park and tie-in with Phase 4 – Annual Report of Management Planning)
- Staffing
- Budget
- Equipment inventory and needs
- Training (required and desired)
- Public Relations/Marketing/Outreach
- Programming (ex: special events/projects, MCCC, volunteers, etc.)
- Public Health, Safety, and Welfare
  - Water System
  - Wastewater system
  - Electrical system
  - Law enforcement
  - Emergency Access Plans
  - Wildfire Management Plan
  - Health Department Reports
- CRS
- FOIA
- Infrastructure Inventory (when available)
- Raster Images of historic park plans
- County/Local Township Master Plans
- County/Local Township Zoning Ordinances

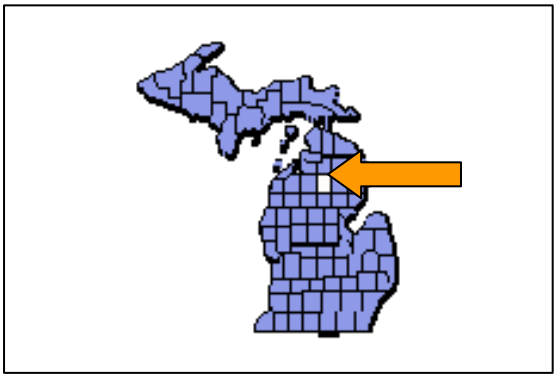
SUPPORTING ANALYSIS

Park Setting

Location and Surrounding Community

Hartwick Pines State Park (HPSP) is located in the northern center of Michigan's Lower Peninsula, in Crawford County. The county is roughly 50 miles from Lake Michigan and 55 miles from Lake Huron. Hartwick Pines SP lies on 7,963.49 acres in Grayling Township at latitude 44.74056 and longitude 84.67056. Its size makes it one of the largest state parks in the Lower Peninsula. The park is accessed by U.S. Interstate 75 (I-75), which runs north and south just west of Hartwick Pines SP. Interstate exit #259 exits onto Michigan Highway 93 (M-93) and then travel north three miles to the park entrance. The city of Grayling, which is the Crawford County seat, is approximately 8 miles southwest of the park and has a series of roads (M-93 and Business 1-75) that lead to the entrance of the park. Hartwick Pines SP is 21 miles north of Higgins Lake, 25 miles south of Gaylord, 33 miles north of Houghton Lake, 49 miles north of West Branch, 58 miles east of Traverse City and 83 miles south of Mackinaw City.

Demographics



Hartwick Pines SP lies in the center of Grayling Township, within Crawford County which as of the 2010 Census boasted a population of 43,784 people. Private, non-farm employment in this county as of 2009 was 12, 007, a decrease of 27.7% from 2000. The 401.79 square mile county boasted 2,788 firms in 2007, 23.8% of which were woman owned. In 2010 Crawford County also reported 20,167 housing units, with the homeownership rate at 72.2% (2005-2009). Median owner-occupied housing values (2005-2009) were approximately $93,500. Per square mile, Crawford County held 109.0 persons in 2010.

Crawford County Population – People Quick Facts

People QuickFacts	Crawford County	Michigan
Population, 2010	14,074	9,883,640
Population, % change, 2000-2010	-1.4%	-0.6%
Population, 2000	14,273	9,938,444
Persons under 5 years, %, 2010	4.7%	6.0%
Persons under 18 years, %, 2010	19.9%	23.7%
Persons 65 years and over, %, 2010	20.8%	13.8%
Female persons, %, 2010	49.8%	50.9%
White persons, %, 2010	97.5%	78.9%
Black persons, %, 2010	0.4%	14.2%
American Indian and Alaska Native persons, %, 2010	0.5%	0.6%
Asian persons, %, 2010	0.4%	2.4%
Native Hawaiian and Other Pacific Islander, %, 2010	Z	Z
Persons reporting two or more races, %, 2010	1.1%	2.3%
Persons of Hispanic or Latino origin, %, 2010	1.3%	4.4%
White persons not Hispanic, %, 2010	96.5%	76.6%

(Source: http://quickfacts.census.gov/qfd/states/26/26039.html)

Job Distribution of Crawford County

EMPLOYMENT BY INDUSTRY (Number of Jobs)				
Components by Type	**1997**	**1998**	**1999**	**2000**
Wage and Salary Employment	4,436	4,371	4,690	4,778
Proprietor's Employment (owner of a one-person business)	1.335	1,863	1,906	1,957
Total Employment	5,771	6,234	6,596	6,735
Components by Employment	**1997**	**1998**	**1999**	**2000**
Ag. serv., forestry, fishing, and other	63	66	0	79
Mining	18	16	17	16
Construction	315	440	454	470
Manufacturing	741	744	845	880
Transportation and public utilities	119	130	139	135
Wholesale trade	193	231	216	191
Retail trade	1,125	1,100	1,274	1,252
Finance, insurance, and real estate	378	464	0	511
Services	1,861	2,083	2,117	2,211
Private Industry Total	4,813	5,274	5,629	5,745
Federal, civilian	137	136	142	168
Military	30	28	28	28

State and local	791	796	797	794
Government/Government Enterprises Total	958	960	967	990

Source: U.S. Department of Commerce - Economics and Statistics Administration - Bureau of Economic Analysis, Issued May 2002

Government *(Entities with Interest in Hartwick Pines State Park)*

Crawford County Building and Zoning Department	989-344-3233
Crawford County Environmental Office	
Crawford County Planning Commission	
Crawford County Housing Commission	989-344-3284
Crawford County Register of Deeds Office	989-344-3203
Crawford County Clerks Office	989-344-3200
Crawford County Drain Commissioner	989-348-2281
Crawford County Conservation District	989-275-5231
Grayling Township	
Grayling Recreation Authority	989-348-9266
Northeast Michigan Council of Governments	989-732-3551

General History of the Crawford County Area

Crawford County was officially organized in 1826. The area evolved around the AuSable and Manistee Rivers along with its lumber trade. Native Americans and French fur traders came to the area and used the rivers for transportation purposes. Even with the decline of the fur trade, the area continued to grow because of the lumbering opportunities in the huge forests of white pine. The rivers plus the eventual railroad system made the transportation of logs easier and made the area an essential logging center.

Land use of both the City of Grayling and Crawford County largely was a result of the post Civil War expansion of the pine industry. By the early 1870's these forces were affecting the upper reaches of the AuSable River drainage basin, and by 1874 the settlement of Grayling had been platted. At its inception, Grayling was envisioned as a regional center for both the timber industry as well as agriculture. Unfortunately, the soils of Crawford County as well as the harsh climate deflated the areas agricultural ambition. Despite this failure, the timber industry proved to be a stabilizing force with the pine lumber period of the 1870's and 1880's and into the hardwood period of the late nineteenth and early

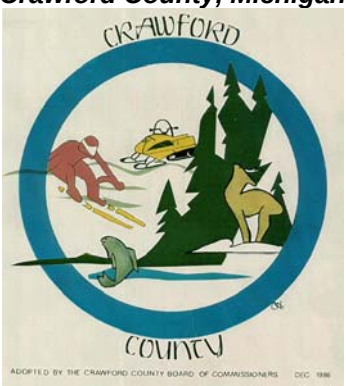
Jackson, Lansing & Saginaw Railroad, Grayling, MI 1875

twentieth centuries. The city of Grayling became the regions timbering center and Crawford County seat in 1878 when operations came to include both the harvesting and milling of finished products. At the same time the Jackson, Lansing, and Saginaw Railroad reached Grayling providing transportation for the areas lumber industry.

Current County Land Cover

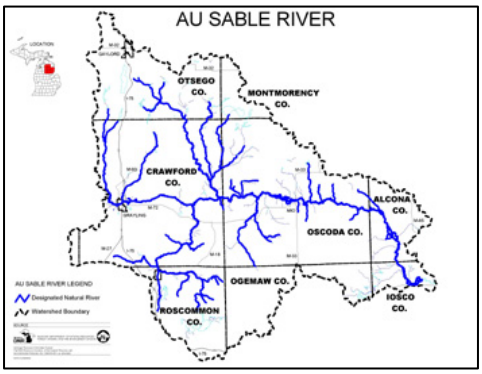
Crawford County promotes itself as "Heart of Northern Michigan" and is located strategically at the center of Michigan's northern Lower Peninsula, right at the crossroads of three major state highways, U.S. 127, I-75, and M-72.

Crawford County, Michigan



Heart of Northern Michigan

Crawford County is generally rural in character with a vast majority of its land under public ownership. Approximately 30% of its land is under private ownership, 1% of the land is water, and the remaining 69% is managed by the State of Michigan Department of Natural Resources, Michigan Department of Military Affairs, the U.S. Forest Service and the U.S. Fish and Wildlife Service. Most of this public owned land is undeveloped and open for public use. The county is considered the "cradle of forest management" by foresters because of its large number of forested acres.



AuSable River

Crawford County has an abundance of lakes and streams. The county has a total of 20 lakes with almost all of the lakes and streams within Crawford County boasting ample opportunity for fishing and other recreational activities. Many of the lakes provide public access and a limited few offer state forest campgrounds. Along with the numerous lakes in the county, Crawford County is the home to the world famous AuSable and Manistee Rivers. The AuSable River is the largest river in the county and covers almost 349 miles in Michigan's Northern Lower Peninsula. The river system is known for its high quality because of its gentle slopes of surrounding terrain and its flow of cold clear water. The AuSable

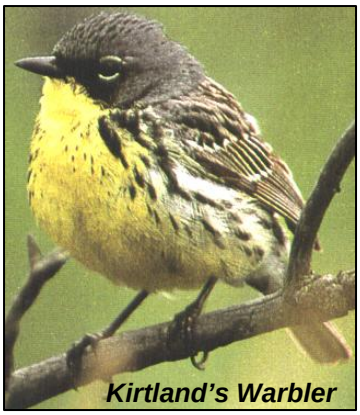
River has been designated a Natural River and is also called a “Blue Ribbon” trout stream.

The Manistee River is also considered a high quality trout stream and covers roughly 170 miles in Michigan’s Lower Peninsula. This river is known for its steelhead and salmon fishing. Both the AuSable and Manistee Rivers are used by many for canoeing, kayaking, fishing and swimming. There are few circumstances within Crawford County where visitors are more than three miles from any river or creek, a result of the prevalence of lakes, streams and rivers here. Crawford County is known as the capital of the world for canoeing and kayaking.

Manistee River

Grayling Bicycle Turnpike

Additionally, the county is blessed with numerous parks, wildlife areas, and other publicly owned lands. With over 209,000 acres of timber, most of which is under public ownership, Crawford County is a key destination for many recreational enthusiasts. Camping, hunting, fishing, snowmobiling, ORV riding, canoeing/kayaking, biking, bird-watching, boating, fall color tours, cross-country skiing/snowshoeing and hiking are key recreational activities popular here. Crawford County has plans to link these recreational locations by developing a comprehensive trail system in the county. Members of the Crawford County Parks and Recreation Multi-Use Pathways Subcommittee have created a Recreational Master Trail Plan for Crawford County and believe that the community as well as visitors will benefit from a trail system for commuting and recreational purposes. It is believed that local business, recreational locations, and developers can benefit from increased tourism and accessibility from the trail. Currently, the Grayling Bicycle Turnpike has been created and is a 6.5 mile trail that is paved with asphalt through the city of Grayling, to the Crawford AuSable Public Schools and east to the entrance of Hartwick Pines SP.



Kirtland’s Warbler

Crawford County is called home by many wildlife animals. White-tailed deer, wild turkey, snowshoe hare, and grouse are key game. The county is also the home to several endangered plants and animals, the rarest being Kirtland’s Warbler. Bird watchers from all over the world come to the area to view the bird whose only summer home is found in Crawford and surrounding counties.

Clinton County is also home to 132,000 of the total 147,000 acres of Camp Grayling--the largest military installation east of the Mississippi River and the nation's largest National Guard training site. Camp Grayling conducts year round training by the National Guard, as well as active and reserve components of the Army, Navy, Marines, Air Force and Coast Guard. Units of the Canadian Armed Forces train year round at Camp Grayling along with visiting Armed Forces from Latvia, United Kingdom, Hungary and Serbia. Also the Northern Michigan Law Enforcement Training Group has over 100 law enforcement agencies that train at Camp Grayling. The training site's unique combination of resources provides for a wide variety of training scenarios.

Economic Impacts: County Wide

Annually 400,000 people come to Crawford County to visit the various parks, campgrounds, recreational areas, historical areas, and local cross-country skiing, hiking, biking and ORV/snowmobile trails and routes. According to the Grayling Area Chamber of Commerce, visitors account for approximately 75% of money spent in the area.

ESTIMATED MARKET SHARE, TRIP VOLUME, AND EXPENDITURES BY TOURISTS IN CRAWFORD AND NEIGHBORING COUNTIES, 1996

County Of Main Destination	Estimated Market Share	Estimated # of Pleasure Trip-Nights	Estimated Direct Expenditures
Antrim	1.0%	928,500	$50,445,000
CRAWFORD	**0.9%**	**887,900**	**$48,238,000**
Kalkaska	0.1%	100,100	$5,437,000
Missaukee	0.2%	223,000	$12,113,000
Montmorency	0.4%	377,500	$20,511,000
Ogemaw	0.7%	641,600	$34,859,000
Oscoda	0.4%	411,800	$22,373,000
Otsego	1.4%	1,300,800	$70,668,000
Roscommon	1.2%	1,152,500	$62,614,000

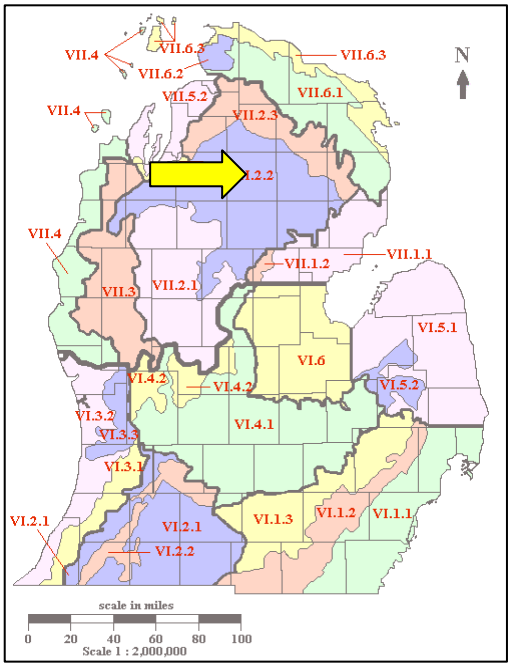
Note: Estimates are based on results from a telephone survey being conducted by the Travel, Tourism, and Recreation Resource Center at Michigan State University.

Michigan State University Extension's Tourism Area of Expertise (TAOE) prepared this profile to help developers, tourism professionals, public officials, and others make informed decisions regarding travel and tourism industry in Crawford County. All statistics pertain to Crawford County unless otherwise noted and are the most current available at this date. As more recent data become available, they will be posted on the TAOE website: www.tourism.msu.edu. Further assistance is also available from the Travel, Tourism, and Recreation Resource Center at Michigan State University (517-353-0793) or the MSU Extension office in Crawford County (989-348-3264).

Crawford County Natural Resources

(The following information was taken from the following website, unless otherwise noted: http://www.npwrc.usgs.gov/resource/habitat/rlandscp/s7-2-2.htm)

Ecoregional Context



Sub-subsection VII.2.2, Grayling Outwash Plain is a high outwash plain with several large lakes and rivers. Within this plain are several steep ridges surrounded by flat outwash. The extensive barrens of Jack-Pine located on the flat outwash plain of this sub-subsection burn frequently. The ridges are consequently dominated by increased amounts of Red Pine, White Pine, and oaks.

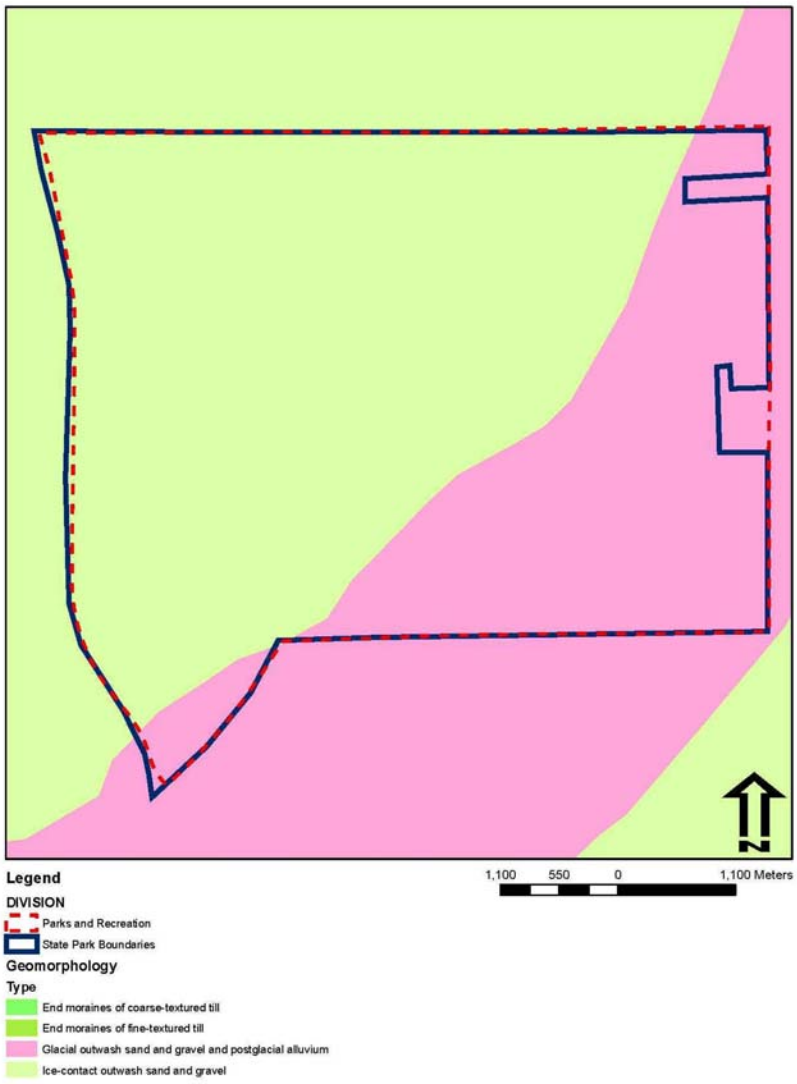
Here outwash plains cover 60% of the land surface, ice-contact ridges cover 20%, rolling till plains cover 8%, and steep end moraines cover 6%. Topography is relatively flat, with slope gradients ranging from 0 to 6%; however slopes as steep as 19-25% are also present. Soil drainage classes range from excessively drained to somewhat poorly drained, with excessively drained soils being prevalent. Elevations in this sub-subsection range from 900 to 1,580 feet (274 too 482 m) (Source: Michigan Department of Natural Resources Natural Features Inventory Report for Hartwick Pines State Park in February 2003)

Soils

Within the sub-subsection, soils are sand or mixed gravel sands, with some localized deposits of fine till and lacustrine clays. These deposits are often exposed at the surface. Most prevalent soils are excessively drained, typically on the ice-contact ridges on moderately to steeply sloping topography. These ridge soils contain very small amounts of silt or clay, mapped as the same associate as the moraines of the Cadillac sub-subsection (VII.2.1). According to the USDA Soil Conservation Service, soils here are classified as gently sloping Haplorthods plus Glossoboralfs. The soils of Crawford County tend to be sandy with low fertility and moisture-holding capacity. In the northwest portion of the county some loamy soils can be found. The predominant associations within Crawford County are Grayling-Rubicon, which are level to slightly undulating, well-drained sandy soils, and Grayling-Graycalm-Montcalm, which are rolling to hilly, well-drained sandy soils. Grayling-Rubicon associations are typically found on outwash plains, the Grayling-Graycalm-Montcalm associations on uplands. Near the northwest portion of the county a third association is found, the Kalkaska-Blue Lake. (Source: Crawford County Recreation Plan 2009: http://www.crawfordco.org/pdfs/RecPlan2009.pdf)

Bedrock Geology

Some of the thickest glacial drift in the state occurs within this sub-subsection at 250-800 feet thick. The underlying bedrock here is primarily of the Paleozoic age, including Pennsylvanian and Mississippian sandstone, coal, shale and limestone. The southern portions of the sub-subsection also boast some Mesozoic bedrock which consists of Jurassic red beds of sandstone, shale and clay. Minor beds of limestone and gypsum also are present.



Landforms

Terrain in this sub-subsection is dominated by high outwash plain, which surrounds several large ridges of ice-contact sands. Steep ridges have been created by glacial melt water streams, dissecting the ice-contact ridges. Much of the outwash plain occurs at an elevation of 1,050 to 1,300 feet. Ice-contact moraines, in contrast, reach elevations of 1,450 to 1,580 feet. Steep sided ice-block depressions are common, along both ice-contact ridges and the outwash plains.

At the northwestern edge of the sub-subsection are two narrow end-moraine ridges, separated by a narrow outwash channel, which is about 8 miles wide at its widest point. The moraines have soils and vegetation similar to those in Sub-subsection VII.2.3; the outwash channel has soils, vegetation, and severe microclimate similar to the remainder of this sub-subsection.

Pre-settlement Vegetation

The vegetation on the end moraines at the northwestern edge of the sub-subsection was northern hardwood forests dominated by Beech and Sugar Maple, with little White Pine or Hemlock. The narrow band of outwash between the moraines also supported northern hardwood forests except in the broadest parts, where forests of White Pine and Red Pine were dominant. Jack Pine was also dominant in a large frost pocket.

The excessively drained outwash plains originally supported savannas of Jack Pine and Northern Pin Oak. Red Pines were scattered within the savanna, and White Pines were located on moister, less fire-prone sites, such as stream margins. On the outwash plains, GLO surveyors noted burned areas of pine plain or barren covering thousands of acres.

Large and diverse wetlands were found on the poorly drained outwash. Where clay deposits were near the surface, shallow peatlands commonly occupied large areas. The map of original swamp areas in Lower Michigan (Lane 1907) indicates the presence of large tracts of swamp in areas where clay soils are near the surface. Hardwood conifer swamps contained White Pine, Red Pine, Jack Pine, Trembling Aspen, Paper Birch, Balsam Poplar, and Red Maple. In the Dead Stream Swamp, where low sand spits separate large, poorly drained flats, bogs and shrub swamps were the dominant vegetation. Swamp forests occupied the margins of most of the major stream courses; Northern White Cedar was the dominant species. Balsam Fir, Hemlock, Trembling Aspen, Paper Birch, and several other swamp species were also found.

Natural Disturbance

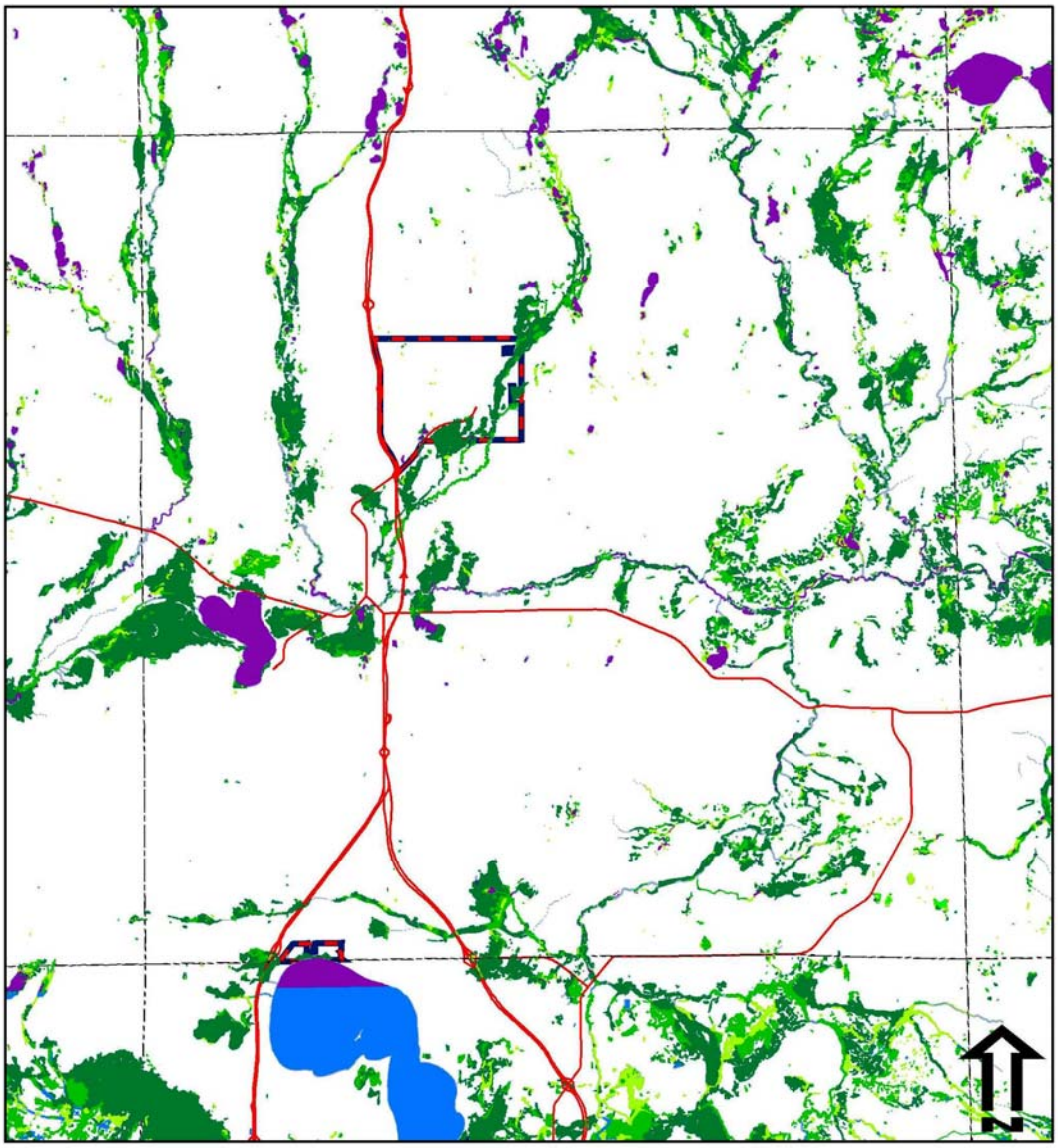
General Land Office (GLO) surveyors noted recent burns have occurred over more than 3 percent of land within the sub-subsection. Several fires have consumed thousands of acres of forest. Smaller pockets of windthrows have also been noted. High mortality of deciduous species has occurred in the large frost pockets within outwash plain depressions. Jack Pine now dominates these areas.

Present Vegetation and Land Use

The sub-subsection is currently heavily managed. Jack Pine barrens are managed for pulp, wetlands are managed for wildlife. Wildfires have been suppressed to a point where dangerously high fuel loads exist within parts of Jack Pine plains. The area is currently heavily used for recreation, including fishing, hunting, canoeing and snowmobiling.

Water Resources

Sub-subsection VII.2.2 boasts many water resources. The vast outwash plain is home to the large Houghton, Higgins, Margreth and St. Helen lakes. Large expanses of wetlands occur at the margins of many of these lakes and in the Dead Stream Swamp. Smaller lakes occupy kettles in several abandoned outwash channels. The area has three major streams: Manistee, AuSable and Muskegon Rivers all originate on the outwash plains. An expansive wetland also occurs at the headwaters of the Muskegon River.



5,800 2,900 0 5,800 Meters

Legend

NWI

Class

- Aquatic Bed
- Emergent
- Forested
- Open Water/Unknown Bottom
- Rock Bottom
- Scrub-Shrub
- Streambed
- Unconsolidated Bottom
- Lakes and Rivers Large
- Lakes and Rivers All

DIVISION

- Parks and Recreation
- State Park Boundaries

Climate

In this sub-subsection, the growing season typically ranges from 80 to 130 days per year. Extreme frost danger extends across the season, particularly in the northern and southeastern ends of the area. Average snowfall is approximately 140 inches in the northwest, 50 inches in the southeast. Lake-effect snowfall is frequently present as well. Annual precipitation maintains a relatively uniform coverage, ranging from 28 to 32 inches.

CRAWFORD COUNTY CLIMATE		
MONTH	**AVG. MIN TEMP**	**AVG. MAX TEMP.**
January	9°F	26°F
July	54°F	81°F
PRECIPITATION	**RAINFALL**	**SNOWFALL**
Average Annual	32in.	93in.
GROWING SEASON DAYS	**DAYS ABOVE 90°F**	**DAYS BELOW 0°F**
110	8	8
		Source: NOAA Climate Summary, 1995

General History of Hartwick Pines State Park

In 1927, Karen Michelson Hartwick, daughter of logging mogul Nels Michelson, purchased over 8,236 acres of land, including 86 acres of old growth white pine, from the Salling-Hanson Company of Grayling. On October 3, 1927, Mrs. Hartwick donated the land to the State of Michigan as a memorial park for her husband, the late Major Edward E. Hartwick of Grayling. Edward Hartwick had died overseas during World War I. Wishing to also commemorate the logging history of the region and of her family, Hartwick requested that the Department of Conservation, predecessor to the Department of Natural Resources, protect the land from logging and fire, a memorial building be built in honor of her husband be built in the park, and a roadway connecting highway M-27, now US 127, to the park be constructed.

Hartwick Family (From Back Left: Edward, Karen, Nels Michelson, Edward Nelson, Robert)

Hartwick Pines State Park opened to the public in May 1928 and the aforementioned Memorial Building was built in 1929. In 1934 and 1935, a Civilian Conservation Corps (CCC) work crew located within the park built two log structures to house the Hartwick Pines Logging Museum. Today, this museum uses exhibits, artifacts, and photographs, to recreate the atmosphere of a logging camp and tell the tale of the "shanty boys" who turned Michigan's vast

forests into timber. Period settings depicting a bunkhouse, mess hall, blacksmith shop, camp office, and van (store) give the visitor a sense of what logging camp life was like.

Mrs. Hartwick was also involved in the naming of two of the park's four lakes. She requested the Alexander Lakes be renamed in honor of her fathers team of oxen used in his logging days—Bright and Star. The state board of geographic names felt that there were already too many Star Lakes in Michigan, so they settled on Glory instead. The other two lakes eventually were named Karen and Hartwick, named in honor of Mrs. Karen Michelson Hartwick herself.

Armistice Day Storm-11.11.1940

On November 11, 1940, a fierce wind storm, now known as the Armistice Day Storm, struck the park and removed nearly half of the old growth pine. It is believed that the winds hit the pines at a hurricane force level, due to a funneling effect by a path of little resistance along M-93. Today, only 49 of the original 86 acres remain standing.

Since the years of the CCC and Karen Hartwick, much has been accomplished at Hartwick Pines State Park. Several modern facilities have been constructed, such as the Michigan Forest Visitor Center, a new campground and the restoration of the Logging Museum. The Memorial Building, which has been vacant since 1994, will hopefully be restored. Paved walkways through the Old Growth Forest have also been established to protect the root systems of the trees and to allow the physically handicapped to access the forest and its natural setting.

Michigan Forest Visitor Center

Hartwick Pines State Park Historic/Cultural Resources

Historical Context

Hartwick Pines SP was established in 1927 when Mrs. Karen Hartwick, daughter of a lumberman, purchased land in Crawford County and donated the land to the state of Michigan for use as a park. She was encouraged in her efforts by Michigan naturalists, Genevieve Gillette. Included in the purchase was 86 acres of virgin timber that is now known as Hartwick Pines. The land had been spared from being logged when an economic panic gripped the nation in 1892 and temporarily halted logging operations. The site was deemed too small to be logged when the panic ended. One of conditions Karen Hartwick placed on her gift to the state was that a memorial to her husband, Edward Hartwick, and to the

logging industry be constructed on the site. The building was started in 1929 and was completely finished by the Civilian Conservation Corps (CCC) in 1934.

Memorial Building Exterior

Memorial Building Interior

At that time the CCC also began work on two logging camp museum buildings, both completed in 1935. The log construction of these three buildings is distinctive in Michigan. The museum buildings are reconstructions of typical logging camp buildings and provide insight into a way of life that was significant to the development of Michigan.

Logging Museum

In 1952, an anonymous donor donated money to build a small chapel in the park. It was built by Harold Ogren and John Cederberg of Roscommon, Michigan and was dedicated to the memory of Donald Johnson, the first president of Kiwanis International.

Chapel in the Pines

Harold Ogren and John Cederberg

Given the integrity and the high degree of historic significance of these four buildings, all elements, historic objects and features including landscape design are preserved as a cultural resource.

Cultural Environment

Based on work by the Great Lakes Research Company of Williamston, Michigan on The Sailling Hanson Company Lumber Camp Site (20CR53) of Hartwick Pines Michigan from August 21, 1989 through March 10, 1990, "Crawford County had witnessed Native American occupation and utilization since at least late Paleo-Indian times (8,000 B.C.). Farmers and amateur archaeologists have discovered and collected numerous archaeological sites within this region, although the vast majority of these remain to be recorded in the Michigan Department of State's Bureau of History archaeological site files. As in other areas of the state, prehistoric archaeological sensitivity can be expected to be highly correlated to the preferred use of elevation, well-drained sandy ground adjacent to some aquatic resource as the idealized settlement and utilizations pattern" (Branster and Prahl 1984).

According to the site files of the Bureau of History, Native American archaeological sites have not been recorded within two miles of the Hartwick Pines study area. While a low density of such sites is to be expected within the Highplains District, the potential presence of such sites has been proven. The primary sources for such information are the cultural resource management surveys conducted by the Huron-Manistee National Forests. While these surveys have discovered sites representing the entire range of Native American occupation, from Paleo-Indian through the Historic, the majority of identified sites appear to represent the periods from the Late Archaic through the Early Late Woodland.

Buildings and Structures (Historical District)

The only historical structures and districts are the above and below mentioned Hartwick Memorial Building, Logging Camp Kitchen, Logging Camp Blacksmith Shop and the Wedding Chapel which all offer a high degree of historic significance. All four buildings and the pine trees themselves would be included in the historic district.

Hartwick Memorial Building with CCC Crew

Hartwick Memorial Building

When Hartwick Pines State Park was established in 1927, one of the stipulations of the deed was the construction of a memorial building

in memory of Major Edward E. Hartwick, for whom the park is named. In 1929, this building was constructed, with the interior being finished by the CCC in 1934.

The Hartwick Memorial Building was designed by architect Ralph B. Herrick, who would be involved with other construction designs for the Department of Conservation, now the Department of Natural Resources (DNR). The Red Pine logs that were used in the construction were cut near Lovells and transported to the park over the Mertz grade, an old logging railroad. The Mertz is now known as the Mertz Grade Trail, which is a hiking trail in the park.

The Edward E. Hartwick Memorial Building is a significant example of rustic architecture that was used in northern Lower Michigan by the DNR. Not only is it a monumental building in size and proportion, but is also one of the few remaining examples of the log and fieldstone architecture that was once so popular. The log style building is reminiscent of the Adirondack camps in New York, with the fieldstone fireplace and chimney dominating the interior spaces. The cathedral ceilings towering over the ground floor and the second level mezzanine give the building a spacious feel. The rustic feeling of the building continues in the interior with small diameter logs used in the construction of railings along the stairs and mezzanine.

The Hartwick Memorial Building not only is an architecturally significant building, but also historically significant with respect to the history of the Michigan State Parks system. The Michigan State Park system began in 1919, but did not really get off of the ground until the 1920's. Hartwick Pines was the eighth state park created and became a model of how a park could attract the public without beaches or boating facilities.

The Major Edward E. Hartwick Memorial Building reflects the grandeur of the rustic architecture of the early twentieth that was significant in park architecture, both in Michigan and throughout the United States. It is this style of architecture that was popular in so many National Park buildings such as Yellowstone, Glacier and Yosemite. During this time the use and popularity of parks exploded due to the growth of the automobile and other new technologies enabling more people to escape the city and to visit these parks. To meet this greater visitor population, new facilities were built, including visitor centers, museums, lodges and campgrounds. In Michigan, it is the Hartwick Memorial Building that presents us with the best example of this park culture. This is an important part of out heritage that cannot be lost, and with the popularity of Hartwick Pines State Park

the right preservation plan; this building can remain for years to come.

Since the opening of the Michigan Forest Visitor Center in 1994, the Hartwick Memorial Building has been closed. As of March 1999, there is a plan to restore the building and to install new historical exhibits and utilize the building for public programs. On October 1, 1998, the building received historical recognition by being place on the National Register of Historic Places by the U.S. Department of Interior. *(Information obtained from the writings of Scott Doxtator in 1997, which were revised by Robert Burg in 1999)*

Former Town Sites

1. Kneeland Siding –One of two town sites located in the area now known as Hartwick Pines SP. It was named after Mr. Kneeland who was at one time an employee of the Sailling-Hanson and Company. Kneeland Siding was located on the Lewiston Grade and consisted of a few railroad structures, store, boarding house, and personal residences.

2. Foxtown – The second former town site located in what is now Hartwick Pines SP. Foxtown is known to have been settled by a man by with the last name of Fox and other members of his family. Foxtown was located on the Mertz Grade and also consisted of a few railroad structures, store, boating house, and personal residences.

Former Town Site—Location Unknown

Former Sawmill

Robinson's Sawmill is known to have been in operation up to as late as 1914. It was located near a mill pond on the East Branch of the AuSable River in the northeast corner of the current park. Mr. Robinson, owner and operator, kept his sawmill up and running until he went bankrupt from overextending his finances at a time when timber was running out.

Robinson's Sawmill

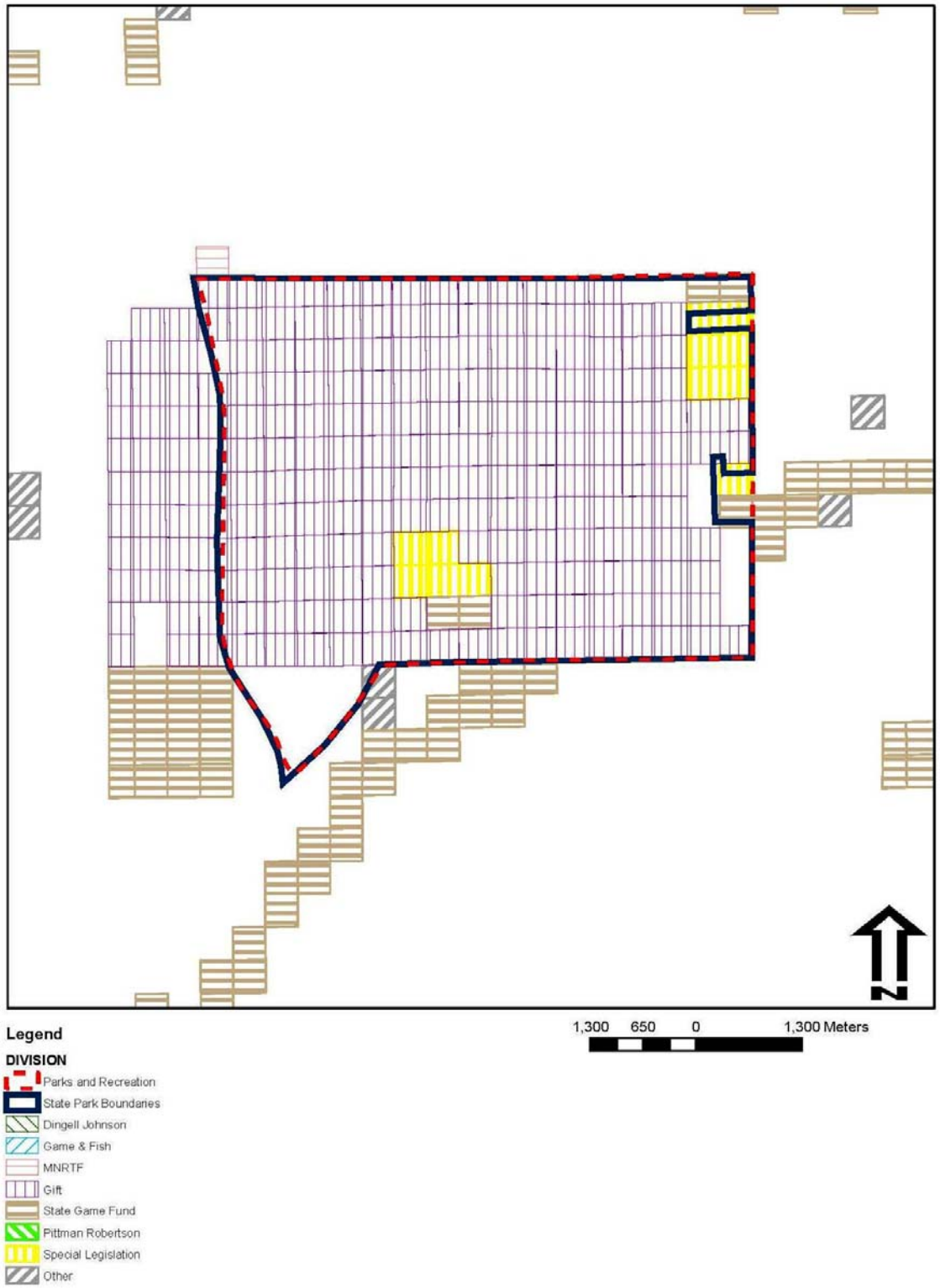
Cultural Landscape

Other cultural resources found in Hartwick Pines SP include several miles of old logging railroad grades, section lines, a witness tree, fire trails, a CCC swimming hole, and stumpfields.

Logging Railroad Grade

CCC Camp Hartwick Pines

Hartwick Pines State Park Land Acquisition



The lands that comprise Hartwick Pines State Park 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 maps that precede this section identify the varieties of sources used in acquiring land within Hartwick Pines State Park. In areas where small, fragmented parcels were aggregated, multiple funding sources may have been utilized. The following outlines in more detail each funding source as associated with Hartwick Pines State Park.

- Special Legislation, Act 27, P.A. 1944 and Act 50, P.A. 1944 – Approximately 417.5 acres of park land has been acquired with this source and is used for general program purposes.

- State Game Fund – Acquisition of lands with this funding source are obtained from a $1.50 of the deer hunting license fee and are for purposes of wildlife habitat and recreation opportunities (hunting and fishing). Approximately 709.94 acres of park land has been acquired with this source.

- Gift – Approximately 8,016.87 acres of park land or rights of land was donated to the State of Michigan and is utilized for general park purposes.

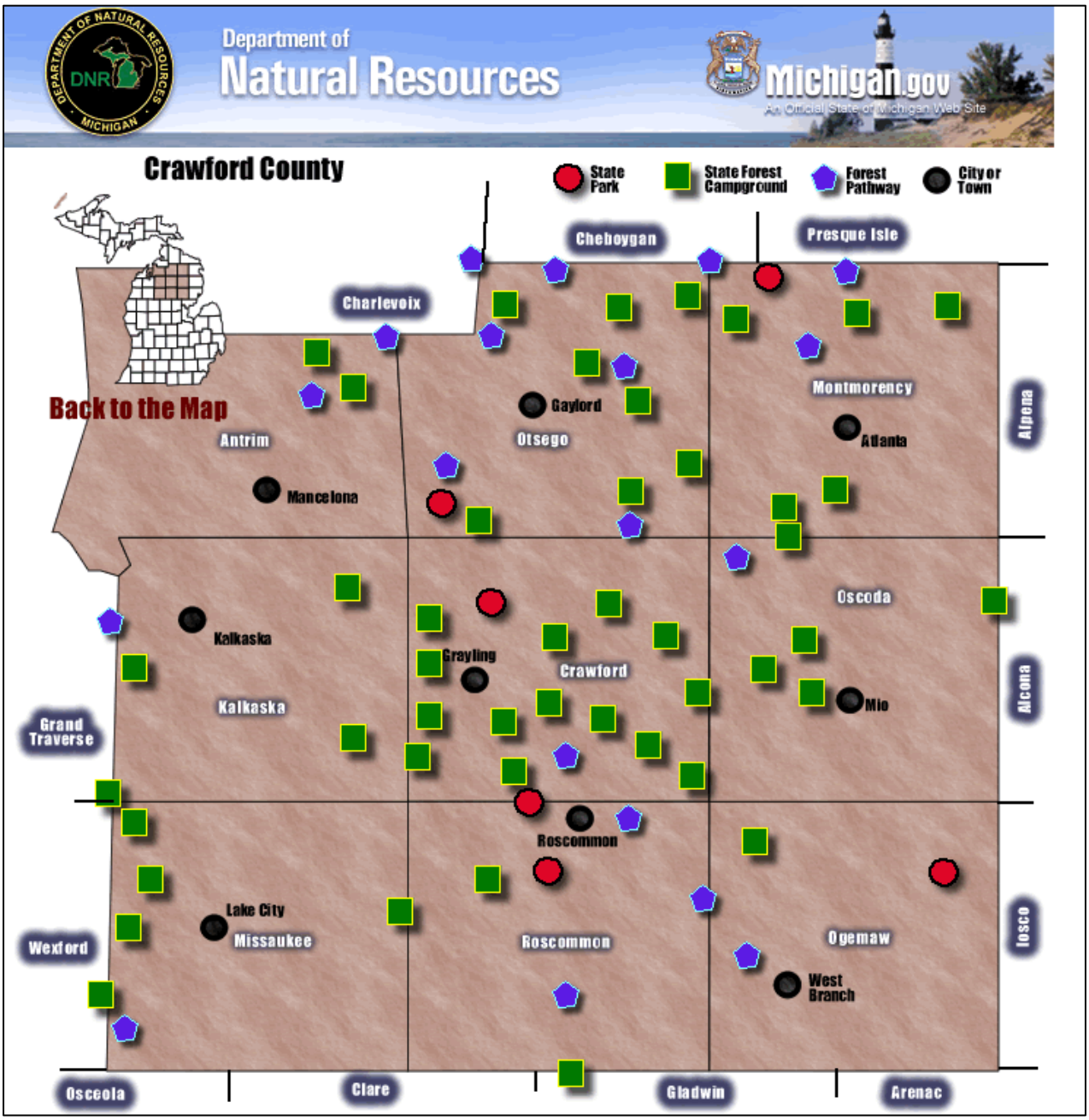
- Recreation Bond Fund – Approximately 62.2 acres of park land was acquired with proceeds of sales of general obligation bonds issued pursuant to part 713 and any premium and accrued interest received on the delivery of bonds for general park purposes.

- Tax Reverted – Approximately 311.34 acres of park land was acquisitioned through tax reverted procedures.

- Land Exchanged – Approximately 160 acres of park land was acquired from being exchanged from a local property owner.

- Granted Easement – Approximately 92.87 acres of park land was acquired from being granted an easement from the Michigan Department of Transportation (MDOT).

Relationship of Hartwick Pines SP to Other State Resources



(Source: MDNR Parks and Trails Images)

Nearby State Parks:

- Clear Lake
    - Located within the Mackinaw State Forest, this park is approximately 52 miles northeast of Hartwick Pines SP. The park is ideal for children, offering a shallow swimming area in the midst of a secluded retreat. It provides 200 campsites, 4.5 miles of trail, and nearly 50 miles of scenic driving.

- Otsego Lake
    - Situated on 62 acres of land on Otsego Lake, the park is approximately 16 miles north of Hartwick Pines SP and is shaded with large oak, maple and pine. It provides 155 campsites and has more than a half mile of sandy beach with large, flat and shady campsites near or within sight of Otsego Lake
- North Higgins Lake
    - Located approximately 19 miles south of Hartwick Pines SP on the northwest corner of Higgins Lake, the park contains 429 acres of land including 174 modern campsites and two mini-cabins.
    - Also the home to the Civilian Conservation Crops Museum which documents the efforts to "put Americans back to work" during the Great Depression
- South Higgins Lake
    - A 400 campsite, 1,000-acre park split in half by County Road 104. On the north side of the road is Higgins Lake and on the south side of the road is Marl Lake and 700 acres of forested maple, oak and pine.
    - The park contains almost one mile of shoreline along Higgins Lake, which is a 9,600 acre spring-fed body of water known by National Geographic Magazine as the sixth most beautiful lake in the world.
- Rifle River
    - Located within the AuSable State Forest, Rifle River offers a variety of recreational activities on its 14 miles of trail. The AuSable River Scenic Byway is just 20 miles from this recreation area, offering an additional recreational outlet. This area is approximately 57 miles southeast of Hartwick Pines SP.

<u>Nearby State Forest Campgrounds:</u>

- Graves Crossing
- Pinney Bridge
- Pickerel Lake Rustic
- Pigeon River Rustic
- Elk Hill
- Pigeon Bridge Rustic
- Round Lake Rustic
- Johnson’s Crossing
- Big Bear Lake Rustic
- Marjory Lake Rustic
- Town Corner
- Jackson Lake Rustic
- Ess Lake Rustic
- Avery Lake Rustic
- Big Oaks Rustic
- Little Wolf Lake Rustic
- McCollum Lake Rustic
- Muskrat Lake Rustic

- Mio Pond Rustic
- Parmalee Bridge Rustic
- Ambrose Lake Rustic
- Canoe Harbor Rustic
- Rainbow Bend
- White Pine Cane
- Keystone Landing Rustic
- 4 Mile Trail
- AuSable River Canoe Camp
- Burton's Landing Rustic
- Lake Margrethe
- Manistee River Bridge Rustic
- Upper Manistee River Rustic
- Goose Creek Trail
- Jones Lake Rustic
- Shupac Lake Rustic
- Walsh Road Rustic
- Pickerel Lake Rustic
- CCC Bridge
- Guernsey Lake Rustic
- Spring Lake
- Hopkins Creek
- Goose Lake
- Long Lake Missuakee
- Long Lake Wexford
- Reedsburg Dam
- Houghton Lake Rustic
- House Lake
- Ambrose Lake Rustic

Forest Pathways:

- Spring Brook
- Shingle Mill
- High Country
- Clear Lake
- Pickerel Lake
- Warner Creek
- Jordon Valley
- Pine Barren
- Big Bear Lake
- Buttles Road
- Sand Lake Quiet Area
- Mason Tract
- Tisdale Triangle
- Red Pine Natural Area
- Ogemaw Hills

- Lost Twin Lakes
- Cadillac

Relationship of Hartwick SP to Other Local Recreation Resources

The Michigan's Shore-to-Shore Riding/Hiking Trail stretches 220 miles east and west from Oscoda on Lake Huron, to Empire on Lake Michigan, and north and south from Mackinac to Grayling. The trail was completed in the early 1960's by stringing together and marking a series of trails, two tracks and forest roads. The first ride on The Michigan Riding and Hiking Trail took place in 1963. It was one of the few trails in the Midwest offering a long-distance ride complete with established trail camps along the way. Trail campgrounds are located approximately 25 miles apart which is equal to a normal day's horse ride or a long day's hike. The Michigan Shore-to-Shore Riding/Hiking Trail is located approximately 8 miles south of Hartwick Pines SP. All Michigan State Forest Campgrounds are $15 per night with emanates consisting of vault toilets, water from well hand pump, fire rings, and picnic tables.

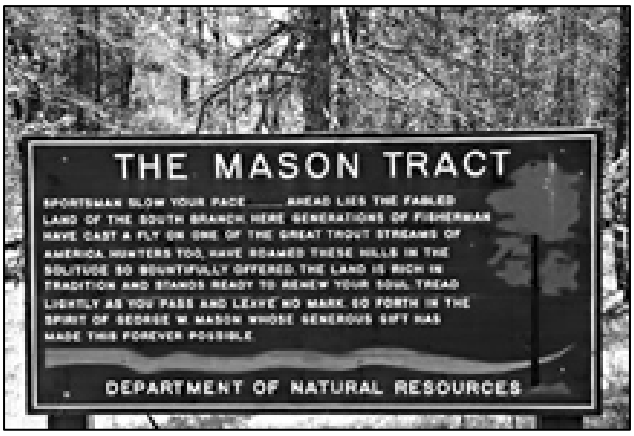
There is also 37,833 acres of national forest land in Crawford County, as of 1990. The national forest land is managed by the Huron-Manistee National Forest which contains almost a million acres of public lands extending across the northern lower peninsula of Michigan. The Huron-Manistee National Forests provide recreation opportunities for visitors, habitat for fish and wildlife, and resources for local industry. In 1909, the Huron National Forest was established covering Crawford, Oscoda, Alcona, Ogemaw, and Iosco Counties, while the Manistee National Forest was formed in 1938. In 1945, these two National Forests were administratively combined. Working hand in hand with the Michigan Department of Natural Resources and other partners, the Forest Service changed the "lands that nobody wanted" to healthy forests again. The Huron-Manistee National Forest receives approximately 4 million recreation visits per year. Many of these visits are directly attributable to the use of nationally-recognized rivers, trails, a scenic byway, a wilderness area, and many camping opportunities. The Forest Service is caring for and managing these lands for todays and future generations. Popular activities in the Huron-Manistee National Forest include camping, hiking, fishing, and biking, boating/canoeing/kayaking, hunting, snowmobiling, cross-country skiing, ORV riding and picnicking.

U.S. Forest Service Insignia

One National Forest Campground exists in Crawford County in the Huron-Manistee National Forest, the Kneff Lake Campground. Kneff Lake Campground provides a wide variety of camping, swimming, fishing and picnicking experiences in wooded areas along the shore of Kneff Lake. Kneff Lake is a designated trout lake and is stocked with rainbow trout. There are 27 campsites

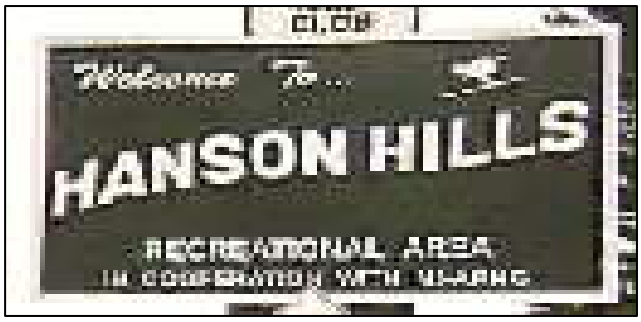
with picnic tables and fire rings, 7 vault toilet bathrooms, four drinking fountains and a day-use and picnic area within Kneff Lake Campground. Fees associated with Kneff Lake Campground include, $10 per campsite per night, and day-users can expect a cost of $1/adult, $0.50/kid, or $3/vehicle. The campground is located 8 miles west of the city of Grayling by way of M-72, Stephan Bridge Road and Forest Service Road 4003.

There are six other private campgrounds in Crawford County besides the two state parks and 14 state forest campgrounds. Yogi Bear's Jellystone Park Camp Resort, Riverpark Campground, Sno-Trac Camper Village Resort, Trails Campground, Headwaters Camping and Cabins on Big Bradford Lake and Happi Days Diner and Campground are all located in Crawford County.



A special management area called the Mason Tract is also located within Crawford County. This 4,493 acre management area is located along the South Branch of the AuSable River and is designed to protect the quality fishing waters of this area. The Tract was created in 1954 when George Mason gifted 1500-acres, a gift contingent on the premises that the area be used as a permanent game preserve. Mason also required that no part of the land shall ever be sold by the state, and no camping shall be allowed in the area for at least 25 years. Additional acreage has been acquired over time from the US Forest Service and private individuals through land exchanges. To this day, the State of Michigan has maintained no camping within Mason Tract boundaries. With ample fishing, hunting and canoeing opportunities, the Mason Tract is also home to the Mason Chapel, built in 1960 to provide fishermen with a place of reverence. The Mason Tract also contains the Mason Tract Pathway, which is 11.5 miles long, and is used for hiking and cross-country skiing. Mountain biking on the Mason Tract Pathway is prohibited via a DNR Director's Order because of erosion and safety concerns.

The Hanson Refuge is a tract of approximately 20,000 acres located in southwest Crawford County. Deed restrictions have designated these lands as a "game preserve", deeming them as closed to hunting and trapping. The DNR manages the surface resources of Hanson lands so management efforts have to be closely coordinated to minimize impact by this areas



Hanson Hills Recreational Area Sign

activity. The Hanson Refuge is also home to Hanson Hills Recreational Area, managed by the Crawford County Recreational Authority, and is a public recreational area and winter sports park that offers a variety of recreational activities. Popular activities include, downhill skiing, snow boarding, ice skating, groomed cross county ski trails, hiking/biking trails and a fishing pond. The recreational area was opened in 1929 and was the first downhill ski area in Michigan and the second to open in the Midwest. Hanson Hills was willed to the State of Michigan by Rasmus Hanson (1846-1927) for military or recreational use. Hanson Hills Recreational Area sponsors activities year round and attracts an average of 20,000 visitors a year.

The Nature Conservancy Natural Areas Registry recognizes a 17 acre parcel of land, Crawford Red Pines, located approximately 13 miles east of Grayling, Michigan, in Crawford County, as a Natural Area. This area has viable remnants of the once vast red pine forests in the northern portions of Michigan's Lower Peninsula which are very rare today. In fact, due to catastrophic widespread clear cutting and repeated fire, old natural stands of red pine may be rarer than similar stands of any other northern forest type in the Great Lakes Region. For its acreage and dense stocking of red pine, the Crawford Stand represents one of the two best in Michigan. Many of the pine trees are about 2 feet in diameter and 100 feet in height. One of the largest trees was found to be approximately 200 years of age. Access to the Crawford Red Pines is limited due to its lack of roads and marked trails.

Crawford County also has an area that is designated for Pine Barrens management. Pine Barrens are currently a rare ecosystem typically inhabited by many threatened and endangered species. These occur in Jack Pine forests which are frequented by fire. A plan was developed to restore an additional 5,120 acres of pine barrens identified in the Camp Grayling area of Crawford County. Extensive planning with the National Guard has occurred and the "North Camp Grayling Pine Barrens Management Plan" has been completed and is awaiting approval of the National Guard and DNR Divisions before prescribed harvesting and burning practices are instituted

Crawford County is also the home to various ORV Trails/Routes. The Frederic Loop Trail which has 29 miles of ORV trail has its parking lot west of Frederic off of County Road 612. The Frederic Route has 9 miles of full-size vehicle trails and starts west of the City of Grayling off of State Highway M-72 before it connects into the Frederic Loop Trail. The West Higgins and Beaver Creek Trails are located in the southern part of Crawford County and run into the Northern part of Roscommon County. The Beaver Creek Trail has 36 miles of ORV trails while the West Higgins Trail has 39 miles of ORV trails. All ORV trails and routes are two way traffic and certain sections have specific restrictions dealing with license requirements

Wellington Farm Park

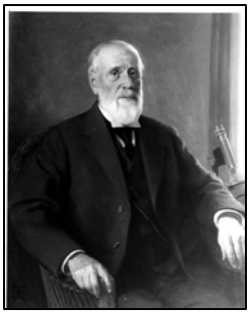
and size dimensions. All users are urged to research the area before riding and stay on signed trails only.

Another great attraction in Crawford County is Wellington Farm. Located in Beaver Creek Township, Wellington Farm is an active farm that operates as a rural mid-America farm would during The Great Depression. The farm operates on 60 acres and offers educational opportunities through displays, exhibits, and its natural setting. Wellington Farm is located 8 miles south of Grayling on Military Road.

The Grayling Fish Hatchery is also located within Crawford County in the city of Grayling. The hatchery was started in 1914 by Rasmus Hanson (1846-1927) who obtained it through timber rights and wanted to start a fish hatchery to help restore the Grayling fish to the AuSable River. As time went on the Grayling fish became extinct but the Grayling Fish Hatchery became an instrumental part to hatching and raising brook and brown trout for rivers throughout Michigan. Twelve years into Rasmus Hanson owning the Grayling Fish Hatchery he sold it to the State of Michigan for $10,000 under certain restrictions that the state would keep the hatchery open and make improvements to double its capacity. The state kept the fish hatchery open until the late 1960's when it was closed down. It remained closed until 1983 when the State of Michigan's Department of Natural Resources issued a permit to the Grayling Fish Hatchery Committee, under the direction of the Crawford County Board of Commissioners, to reopen the hatchery. Drawing an average of 38,000 people from 1983-1993, the State sold the land to Crawford County in 1994. The Grayling Recreation Authority took over management to allow visitors the ability to view adult populations of trout. The hatchery is open every day from Memorial Day to Labor Day from 12:00pm to 6:00pm and has 11 ponds that have approximately 45,000 trout in a variety of sizes.

Grayling Fish

Another key destination in Crawford County would be the W.J. Beal Plantation. This plantation is located in the city of Grayling and may not only be the oldest documented tree plantation in the Midwest of the United States but in North America. William J. Beal (1833-1924), a professor of Botany at Michigan Agricultural College, now Michigan State University, planted over 5000 trees of 76 species in May of 1888 with the sole purpose of determining and demonstrating how well various trees and shrubs could be established and grown on dry, sandy soils. The area stands as one of the few unspoiled forest study areas in Michigan and contains a self guided handicapped accessible interpretive hiking trail that outlines the rich history and importance of the W.J. Beal



W.J.Beal

Plantation. Of the original 80 acres planted by William J. Beal only 7 acres remain today.

Hartwick Pines State Park Land Use

Hartwick Pines SP is considered a multi-use park with recreational opportunities that include camping, hunting, fishing, hiking, mountain biking, cross county skiing, wildlife viewing areas, the Michigan Forest Visitor Center and the Hartwick Pines Logging Museum.

Current Campground Layout

With an area of 7,963.49 acres, Hartwick Pines is one of the largest state parks in the Lower Peninsula. There is one campground inside the park that provides 100 modern campsites with some sites having just electric hookup and other sites having full hookup capabilities (electric, water, sewer). Prices of camping vary from full hookup at $33 a night and electric hookup at $25 a night. All campsites have cement pads, fire rings, and picnic tables.

The park also has a rustic cabin for rent at $60 a night, located adjacent to Bright Lake. It has no electricity and is located in a quiet, secluded setting, and can accommodate up to 6 people. A hand pump for water and a vault toilet is located nearby. When renting the rustic cabin, you must provide your own bedding, cookware, tableware, lanterns, flashlights and other camping supplies.

Bright Lake Rustic Cabin

Hunting and fishing are very popular activities in Hartwick Pines SP. There are four lakes within the boundaries of the park. Lakes Bright and Glory have accessible fishing piers on them and have access from M-93 as well as a trail from the campground. Popular fish caught on Bright and Glory Lakes are bluegill, pan fish, largemouth bass and rainbow trout. Hunting is allowed outside of the old growth forest and developed park areas. Signage is used throughout the park showing the open versus closed areas.

Glory Lake

Also included within the park are the Michigan Forest Visitor Center and the Hartwick Pines Logging Museum. The Michigan Forest Visitor Center gives guest the opportunities to learn about the fascinating history of Michigan's forests

and lumbering era. Hartwick Pines Logging Museum is located ¼ mile from the Michigan Forest Visitor Center and is among one of Michigan's largest remaining stands of virgin white pine. Located within the logging museum is a 1.25 mile paved trail, Old Growth Forest Foot Trail, which leads visitors through the forest to the 300-year-old Monarch pine, a remnant of the ancient forests that once covered most of northern Michigan. Other attractions along the trail include a variety of flora, fauna and a small wedding chapel that was built in 1952 and is open for renting**.**

The Monarch Pine

Located within Hartwick Pines SP is a 19 acre parcel that houses the Michigan Department of Corrections Camp Lehman. Camp Lehman is a minimum security corrections camp that generally represents the end of a sentence for offenders, and it serves as a transition point for the offenders getting ready to return to society. The camp program started in 1948 primarily to provide a labor force for the Department of Natural Resources. Now, prisoners can go to school and work on projects for state, local and federal units of government and nonprofit agencies. Currently, there are 7 camps throughout the state of Michigan, and each camp is overseen by a nearby corrections institution. Camp Lehman is under the direction of the Standish Maximum Correctional Facility and is located toward the east side of the park directly off of M-93. The camp can house 582 prisoners and has approximately 105 employees. Programs offered at Camp Lehman include Adult Basic Education, General Education Diploma, a prerelease program, substance-abuse treatment, Alcoholics Anonymous and group counseling.

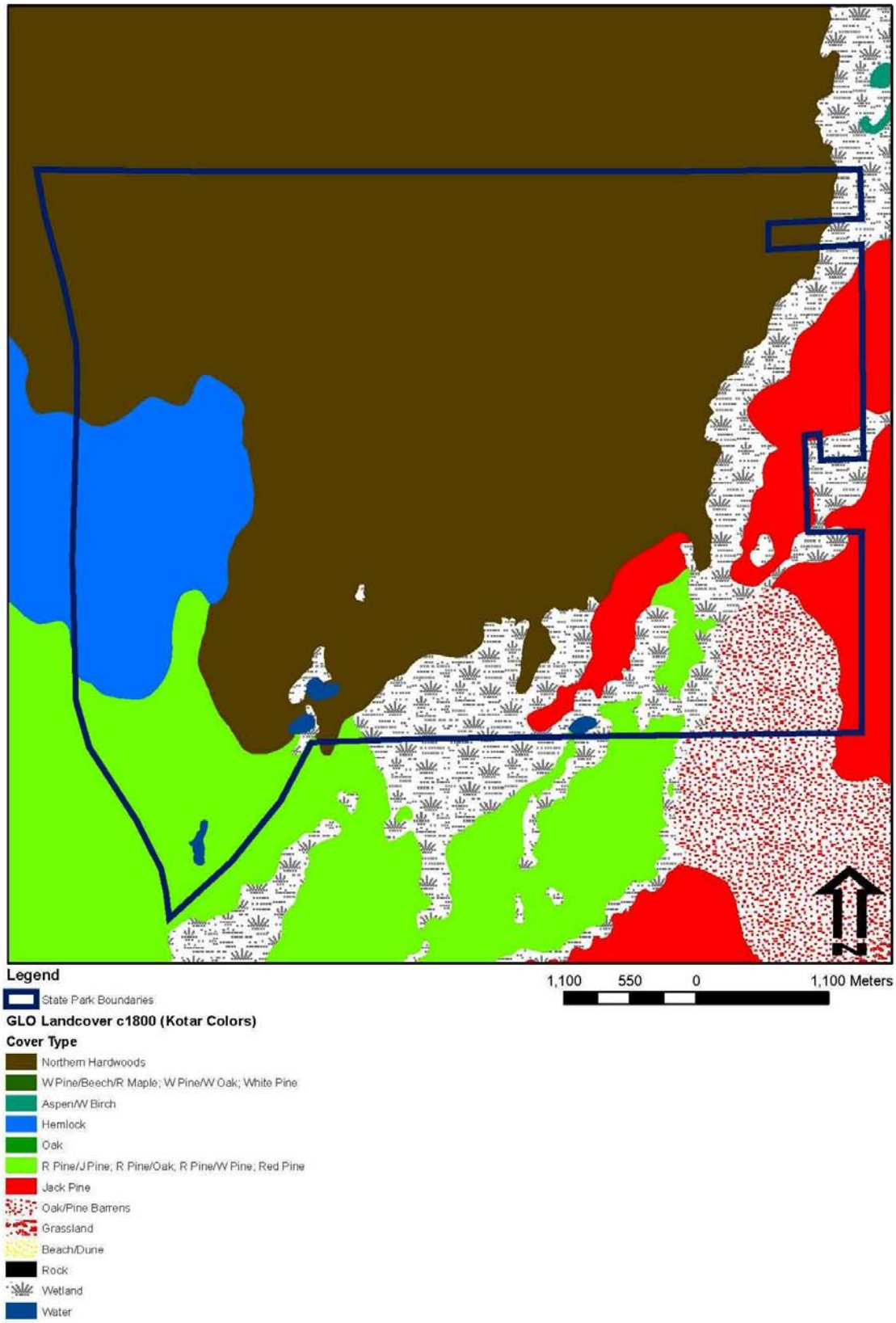
Hartwick Pines State Park Natural Resources

Ecoregional Context

Hartwick Pines State Park is located within Northern Lacustrine-Influenced Lower Michigan (Section VII), the Highplains Subsection (VII.2), and the Grayling Outwash Plain Sub-subsection (VII.2.2). The park is situated on the relatively large area of ice-contact ridges surrounded by the AuSable River to the west and the East Branch of the AuSable River to the east.
(Source: Michigan Natural Features Inventory, February 2003)

Pre-settlement Vegetation

Notes gathered from General Land Office (GLO) surveys from the mid 1800s were interpreted by Michigan Natural Features Inventory (MNFI) staff. Their interpretations suggest the present site of Hartwick Pines State Park was originally dominated by Beech-Sugar Maple-Hemlock forest, Hemlock-White Pine forest and small amounts of Red Pine-White Pine forest, Jack Pine-Red Pine and Pine Barrens in the uplands. Also the area boasted some mixed conifer swamp, cedar swamp and shrub swamp.



Early surveyors revealed wetlands associated with the East Branch of the AuSable River in the northeast corner of what is now Hartwick Pines State Park.

These wetlands provided a natural fire break, which supported the growth of a jack pine-red pine forest. Immediately north of the park, the river is surrounded by a broad wetland, originally mapped as cedar swamp. This wetland area extends into the northeast corner of the park. South of this, a smaller, narrow wetland surrounds the river. Tamarack and alder were sighted here, and the area was mapped as a shrub swamp by early surveyors. A mixed conifer swamp was mapped adjacent to the steep ice-contact terrain towards the south central part of the park. Northern White-Cedar, Tamarack, Black Spruce, several lowland hardwoods and other varieties of conifers were found in this area.

The area between the East Branch, the mixed conifer swamp and ice-contact ridges was mapped as Red Pine-White Pine forest. Other tree species were found within this larger tract, but the dominant composition was recorded as Red and White Pine. This area was part of a larger, contiguous forest located in the southern portions of the park. Fire frequency was low here due to the presence of wetlands and ice-ridges, especially compared to fires in the Pine Barrens. Surveyors mapped the northwest portion of the park as Hemlock-White Pine forest. East of this area, and west of the wetlands around the AuSable, was mapped as Beech-Sugar Maple-Hemlock forest.

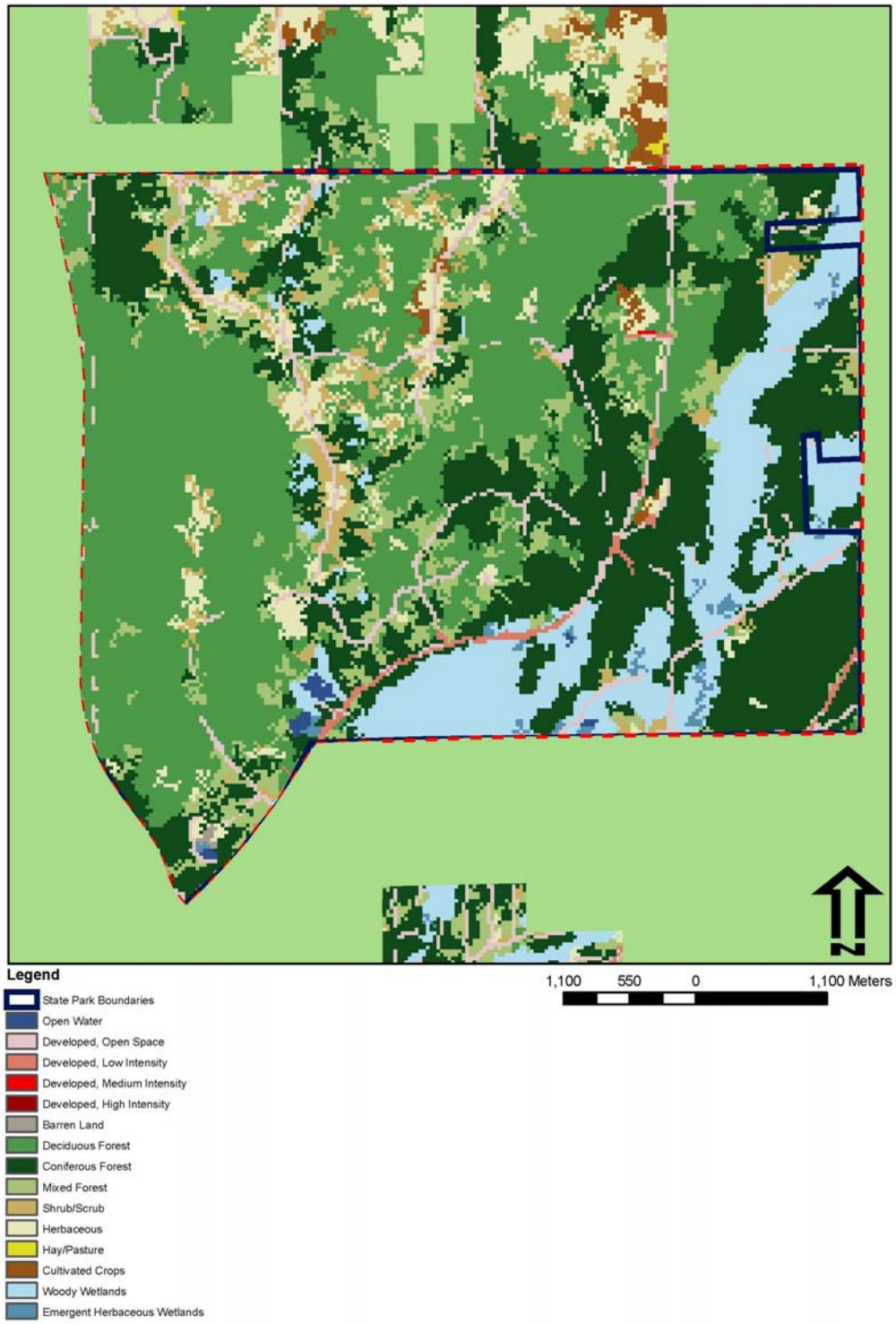
Early mapping showed a progression of growth, trees ranging from 4 inches diameter breast height (DBH) to 50 DBH.

Present Vegetation

Hartwick Pines State Park has been significantly modified since the turn of the century, as result of extensive timber harvesting as well as the elimination or control of natural disturbances, such as wildfire, that had influenced the composition of 1800 forest types. Currently, Hartwick Pines State Park occupies 9,672 acres and is characterized by dry northern forest, dry-mesic northern forest, mesic northern forest, northern shrub thicket and poor conifer swamp. The East Branch of the AuSable River and a tributary pass through the eastern portion of the park. In addition, several lakes are present within the park including Bright, Glory, Hartwick, and Karen Lakes.

The majority of the park is characterized by degraded forest dominated by early-succession species and numerous openings. Dominant canopy species include Trembling Aspen, Jack Pine, Black Cherry, Black Oak, Paper Birch and Red Maple. Many of the gaps within these forests are dominated by Bracken Fern, Sweet Fern and Lichen mats. Large pine stumps also occur scattered throughout this area. These early-succession forests are the result of the extensive logging of the earlier surveyed White Pine-Hemlock and Beech-Sugar Maple-Hemlock forests. Logging was followed by intense slash fires that often burned deeply into the ground, destroying the organic surface soil, consuming humus and creating barren stump plains in many areas of the park.

According to the 2006 Land Cover map shown below, the majority of the park is currently maintained as deciduous and coniferous forest. Some herbaceous crops and shrub lands occur near developed open space and trail systems. Extensive woody wetland systems exist in the southeastern portion of the park.



In comparison to the vegetation circa 1800, the area currently occupied by dry-mesic northern forest and mesic northern forest has significantly been reduced. Currently canopy dominations are Sugar Maple and Beech.

Natural Community

Within Hartwick Pines State Park, two high quality natural communities have been recorded, the dry-mesic northern and dry northern forest. The dry-mesic northern forest is mostly located on the ice-contact ridges and moist, sandy soils. Within the area is a 49 acre stand of old-growth pine which has never been logged. A windstorm in 1940 was severe enough to down nearly half of this stand. The absence of fire in this area is causing the dry-mesic northern composition to succeed to mesic northern forest dominated by Sugar Maple, Beech and Red Maple.

The dry northern forest dominantly occurs on the sandy outwash plains, totaling between 8 and 10 hectares in size. This Jack Pine dominated stand is believed to have originated at the turn of the century, following a logging fire. A younger stand and conifer swamp are adjacent to this area, whose canopy is 60 percent closed. The absence of fire in this area is also changing its composition, the dry northern forest currently succeeding to dry-mesic northern forest dominated by White Pine.

Flora

With a variety of different forests, canopy layers and ground cover, Hartwick Pines SP is and was the home to a variety of different trees, plants and shrubs. Popular tress found throughout the park include: Jack, Red and White pine, Black and Pin Cherry, Aspen, Black Oak, Red and Sugar Maple, Paper Birch, Hemlock, Beech and Balsam fir. Popular plants and shrubs found in this diverse area include: Bracken and Sweet Fern, Witch Hazel, Lichen Mat, Sweet Blueberry, Wintergreen, Canada Mayflower, Little and Big Bluestar, Hair and June grass, along with Wild Sarsaparilla to name a few.

The Michigan Natural Resources Inventory (MNFI) for Hartwick Pines State Park in February 2003 place places three special interest plants species in Hartwick Pines SP. False Violet (*Dalibarda repens*), and Rough Fescue, (*Festuca scarrella*), are both threatened in the state of Michigan and have been observed at one time in Hartwick Pines SP. Hill's Thistle (*Cirsium hilli*) is under special concern in the state of Michigan and also has been observed at one time in Hartwick Pines SP. The False Violet was last observed in 2002, the Hill's Thistle in 1998 and the Rough Fescue in 1992.

Fauna

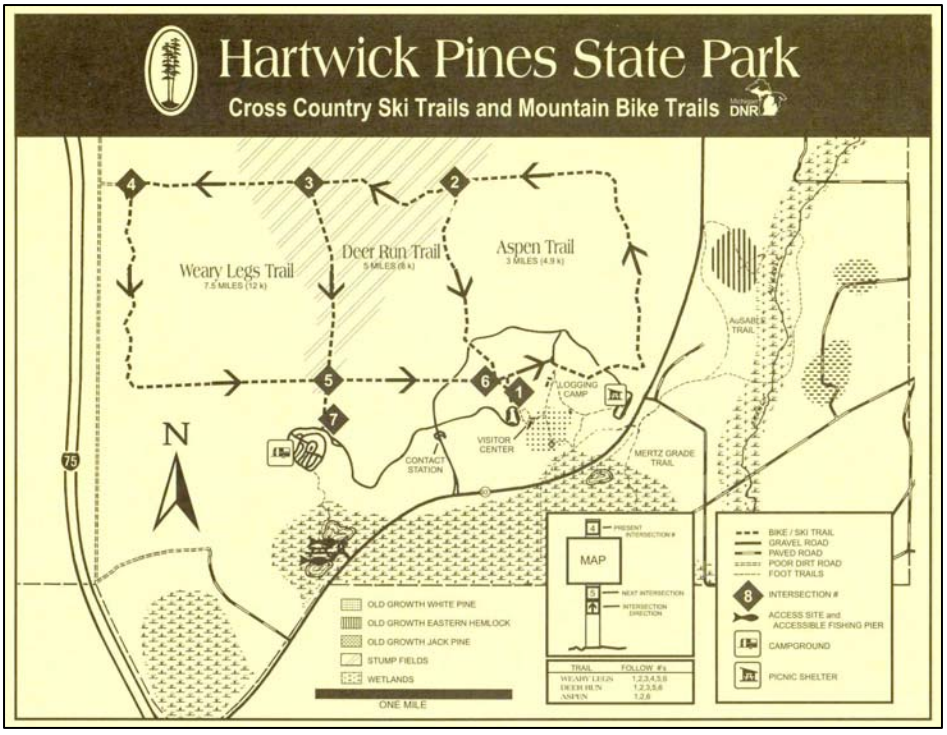
With an area of 7,963.49 acres, Hartwick Pines SP is home to many fish, animal, bird and insect species. The most common animals found in the park include: White Tailed Deer, Red and Black Squirrel, rabbit and Snowshoe Hare, Black Bear, raccoon, Wild Turkey, skunk, coyote and chipmunks. Popular fish found in

the parks four lakes include Blue Gill, Largemouth Bass and Rainbow Trout. Popular birds found throughout the park include: Hairy and Downy Woodpecker, Red and White Breasted Nuthatches, Northern Flicker, Pileated Woodpecker, Solitary Vireo, Blackburnian and Pine Warbler and Scarlet Tanager.

The MNFI for Hartwick Pines State Park in February 2003 place eight special interest species in Hartwick Pines SP. The Bald Eagle (*Haliaeetus leucocephalus*) the Red-shouldered Hawk *(Bueto lineatus)* and the Dusted Skipper *(Atrytonopsis hianna)* are all threatened in the state of Michigan and were all observed at one time in Hartwick Pines SP. Records show the last Bald Eagle spotting occurred in 1979, the Dusted Skipper in 1998 and the Red Shouldered Hawk in 1999. The Eastern Massasauga Rattlesnake *(Sistrurus catenatus Catenatus)* the Red-legged Spittlebug *(Prosapia ignipectus)* the Grizzled Skipper *(Pyrgus centaureae Wyandot)* the Secretive Locust *(Appalachia arcane)* and Blanding's Turtle *(Emydoidea blangingii)* are all under special concern in the state of Michigan and have also been observed at one time in Hartwick Pines SP. Most recent spottings of the Eastern Massasauga Rattlesnake occurred in 1990, Red-legged Spittlebug in 1998, Grizzled Skipper in 1965, Secretive Locust in 2000 and of Blanding's Turtle in 2002.

Hartwick Pines State Park also is home to five potential special interest species. These area the Northern Goshawk *(Accipiter gentilis),* the Cooper's Hawk *(Accipiter cooperi),* the Prairie Warbler *(Dendrocia discolor),* the Blazing Star Borer *(Papaipema beerbiana)* and the Wood Turtle *(Clemmys insculpta).*

<u>Hartwick Pines State Park Recreational Resources</u>



(Source: MDNR Parks and Trails Maps)

DEVELOPED OPPORTUNITIES – Hartwick Pines SP offers a diverse array of recreational opportunities with day-use, camping, and the interpretive areas.

- Camping – Hartwick Pines SP has a modern campground in the park that features a toilet/shower building, paved campsites, electrical pedestals, fire rings, and picnic tables on each site. Overall there are 100 campsites at Hartwick Pines SP with 35 campsites being pull-through sites with full hookup capabilities (water, sewer, and electric) and 65 campsites with just electric hookup.

  - Day-Use Areas – Day-users can enjoy the picnic shelters and picnic area located near the old growth forest. This area has grills, picnic tables, modern bathroom facility, drinking fountains and playgrounds that offer a variety of playground equipment for children. The Michigan Forest Visitor Center, the Hartwick Pines Logging Museum, the Old Growth Forest Foot Trail, the AuSable River and Mertz Grade Foot Trails and Weary Legs, Deer Run and Aspen Trails are all located in day-use areas of the park.

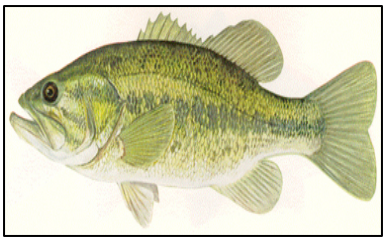
Old Growth Forest Foot Trail

  - Wildlife Viewing Area - Wildlife viewing areas are located on the Old Growth Forest Foot Trail. Popular fauna along the trail includes chipmunks, woodland mice, bats, salamanders, dozens of insects, Hairy and Downy Woodpeckers, Red and White Breasted Nuthatches, the Northern Flicker, Pileated Woodpecker, Solitary Vireo, Blackburnian Warbler, or Black-Throated Green Warbler, Pine Warbler, Scarlet Tanager and Red and Black Squirrels.

White-Tailed Deer

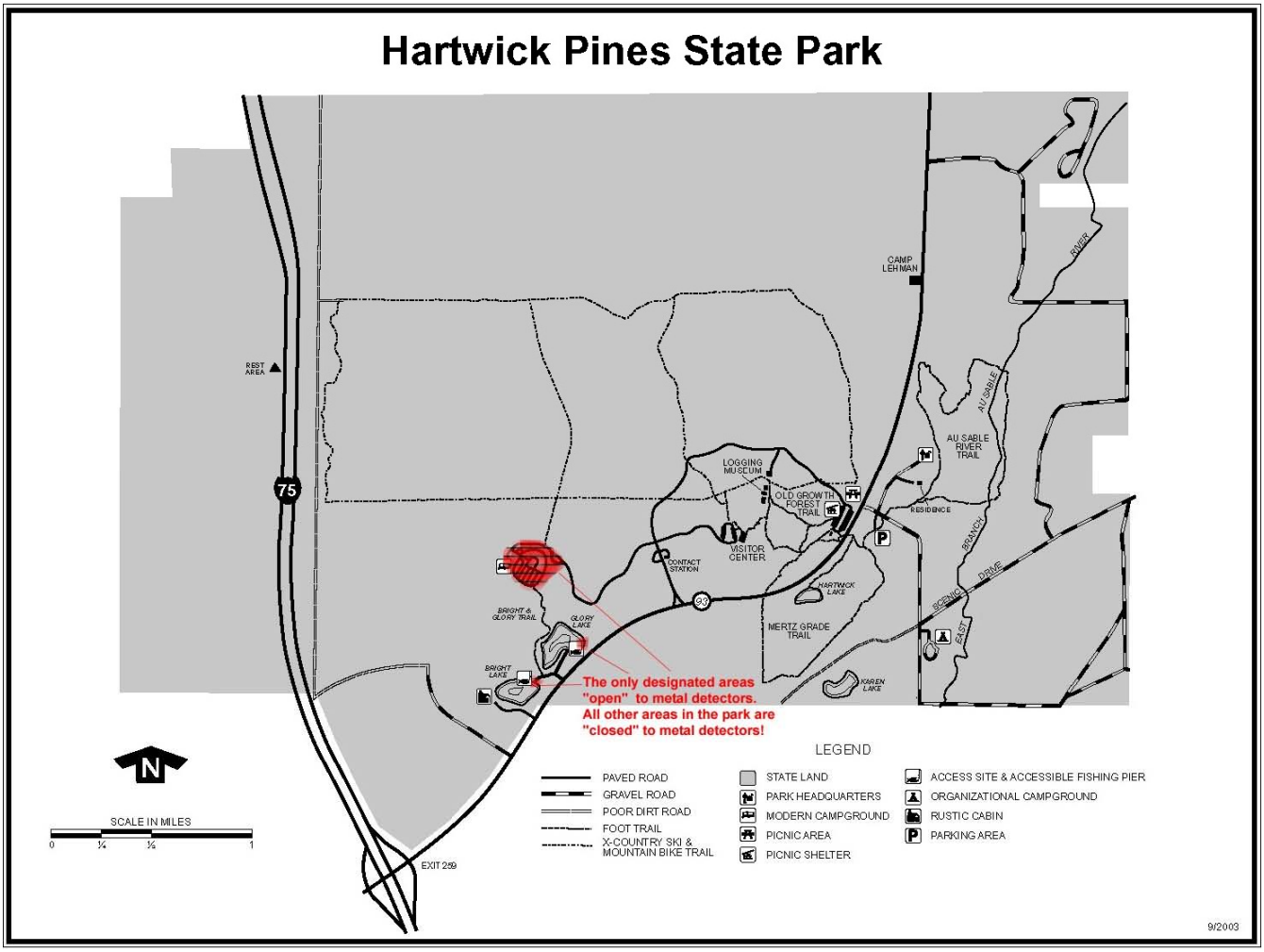
  - Hunting and Trapping – Hartwick Pines SP is open to hunting during all regular seasons. There is approximately 7,500 acres of land open to hunting outside of the old growth forest, Department of Corrections Camp Lehman, and the developed park areas. Signage is used to indicate open versus closed areas for hunting. Primarily, squirrel, rabbit, and larger mammals like White-Tailed Deer, coyotes and Black Bear are hunted inside the park.

- Fishing – Bright and Glory Lakes, two of the four lakes located in Hartwick Pines SP, have accessible fishing piers on them. Both Bright and Glory Lakes are non-motorized lakes and are popular throughout the year for Bluegill, Pan Fish, Largemouth Bass and Rainbow Trout. Bright Lake is approximately 7 acres in size while Glory Lake is approximately 10.2 acres. Karen and Hartwick Lakes are both smaller lakes within Hartwick Pines SP. Hartwick Lake receives some fishing and is approximately 2 acres in size while Karen Lake, also approximately 2 acres in size, is not that popular for fishing.



- Trail System – Hartwick Pines SP has five trails, which range from 2 to 7.5 miles that offer recreational activities as hiking, mountain biking and cross county skiing. Three trails, Weary Legs, Deer Run and Aspen are groomed in the winter by park staff to make the trails more accessible for cross county skiers. The two remaining trails, AuSable River Foot Trail and Mertz Grade Foot Trail, are just used for hiking purposes and individuals are asked to be respectful of these resources and leave no trace during their visit. AuSable River Foot Trail is a wooded three mile in length trail that takes hikers across the East Branch of the AuSable River at two different locations. The Mertz Grade Trail winds visitors through forest and fields on a two mile trail which was named for the early logging railroad spur that the trails uses.

- Metal Detecting – This activity is allowed in specific areas of the park (as noted in the map below—highlighted in red). Metal detecting is recognized as a legitimate recreation activity natural and cultural resources in Michigan State Parks are not put at risk, and all applicable



state statues are abided. If you wish to use a metal detector in Hartwick Pines SP, please contact the staff or ask park staff where this activity may take place. Any items found must be reviewed by park staff and may be retained for future investigation.

Hartwick Pines State Park Educational Programs and Interpretation

- Kids in the Park - This statewide program is available at all state parks and recreational areas in Michigan. It offers the park too all 4th grade teachers for use as an outdoor classroom.

- Morel Identification – At Hartwick Pines, this program is offered in the spring. Its purpose is to teach visitors one of Northern Michigan's greatest outdoors pastimes, morel mushroom hunting. The program lasts

approximately 2 hours and instructs participants on the identification of the tasty morel mushroom and how to spot the deadly false morel mushroom as well as other common fungi. Participants also learn how to properly collect, store and cook morel mushrooms.

- No Child Left Inside –Another statewide program and relatively new to Michigan State Parks and Recreation Areas, the No Child Left Inside program allows free entry into DNR interpretive areas or state parks on Earth Day. Its purpose is to educate every student about Michigan's natural resources, and to break them from the routine of an inside classroom. The program is in cooperation with the Office of Communications.

- Kids Fishing Derby – During a free fishing weekend (offered each summer) Hartwick Pines SP hosts an annual fun fishing contest for kids between the ages of 3 & 17. Fishing poles, tackle and bait are on hand for kids that don't have their own gear but kids can feel free to bring their own gear if they have some. Varieties of Pan Fish and Bass are commonly caught during the fishing derby. Prizes are awarded for the top three finishers in several categories. Parents are welcome.

- Adult Fishing Contest – Hartwick Pines SP holds a fishing contest for adults as well. Fishing poles, tackle, and bait are on hand if needed unless participants prefer to use their own. Prizes are awarded to the top three finishers in several categories and kids and spouses are welcome to cheer on the participants.

- Wood Shaving Days – This annual festival is offered in July and is sponsored by the Friends of Hartwick Pines. It highlights the historic wood working crafts of the Nineteenth Century. Craftspeople demonstrate woodcarving and other skills such as blacksmithing, rope making, wool-spinning and weaving. The festival also includes a musical band that plays traditional folk songs and blue grass music. The park's historic sawmill at is usually in operation the entire weekend as well.

- Forest Fest – Summer at Hartwick Pines offers many events, this one included. The festival has children's activities and games, exhibits and displays on various forest and natural resource-related subjects, information on the current status of the health of Michigan's forests and where to get natural resource management assistance. The event also features displays by various wildlife organizations. Children who sign up at the event receive a *Natural Resource Passport* which allows them to visit all of the activity stations. If they complete all stations, they receive a prize from the Friends of Hartwick Pines Bookstore. This program is fun and educational for the whole family.

- Black Iron Days – Sponsored by the Friends of Hartwick Pines, this annual festival occurs in August of each year. It is considered to be the largest gathering of blacksmiths in Michigan. A variety of crafts-people gather their work, a band is present offering the sounds of traditional folk music and blue grass, and the historic sawmill is in operation throughout the duration of the festival.

- Maple Syrup Days – Annually in March, the Maple Syrup Days offers a unique experience. Throughout the day, visitors can view tree taping demonstrations and watch as maple syrup is boiled. Area foresters are usually on hand to give tips and advice to anyone who wants to try their own hand at tapping trees and making maple syrup. Films are presented throughout the day in the visitor center auditorium, children's activities are held in the center's classrooms and Michigan maple syrup and maple sugar candy are for sale in the center's bookstore.

- Living History Interpretive Programs – During the summer season, interpreters in period clothing from the 1890's present the history of Michigan's White Pine Logging era. Activities take place at the park's Logging Museum. Events include hands-on activities, such as using the crosscut saw and cant hook, laundry and cooking. Visitors are able to gain a firsthand understanding of what life was like in a northern Michigan logging camp.

- Vintage Baseball – It was not all work in Nineteenth Century Northern Michigan. The Hartwick Pines Baseball Club, "Swampers", presents America's National Pastime as it was played in the mid-1800. Life outside the logging camps and sawmills revolved around leisure and recreation and the growing game of base ball, two words in the 1800's, was one of the primary outlets of this. Several times during the summer, the "Swampers" hosts teams from other communities to interpret the game as it was played more than a century ago to Hartwick Pines SP guests.

- Lantern Tour of the Logging Museum – This program occurs on the fourth Saturday in September, and transforms the Logging Museum into the Sailing, Hanson and Company's Section Nine Camp, which was located in the park in 1896. Museum guests get a chance to take on the roles of new "shanty boys", lumberjacks, arriving at the camp to be hired as new employees. Interpreters use first hand person interpretation to become members of the Section Nine Camp to let guests know what camp life was like.

- Winter Trail Days – A national event which began in 1996, Winter Trails Days introduces visitors to snowshoeing and/or cross country skiing. Activities offer entire families or groups of friends, regardless of age, an opportunity to get outside in the winter and enjoy a day in the snow. At

Hartwick Pines SP staff utilizes this day with a snowshoeing event, including free snowshoe rentals, demonstrations, guided hikes, clinics and children's activities. Food concessions and hot beverages along with two campfires to warm-up are also provided throughout the day.

- Snowshoe Workshop – This program consists of two snowshoe making workshops that occur in the winter at the Michigan Forest Visitor Center. Snowshoe styles available are the 46-inch Huron Snowshoe and the 36-inch Green Mountain Bearpaw. While making their shoes, participants will learn about the history of snowshoes and why their popularity is growing. The workshops are very informal; participants are encouraged to wear comfortable clothes and bring a sack lunch. The visitor center usually provides a variety of hot beverages to its participants. Class sizes are limited and reservations are needed. There currently is a $160 registration fee, which includes all materials and equipment needed to make one pair of snowshoes. A $25 deposit is required and their usually is a reservation deadline for the workshop.

- Guided Snowshoe Hikes – Saturdays during January, February and Marck of every year boast guided snowshoe hikes through Hartwick Pines' Old Growth Forest. Hikes are held from 1 to 3 p.m. and participants can bring their own snowshoes or borrow a pair for free from the Visitor Center. Beginning at the Visitor Center hiking groups receive a brief review of snowshoe history, styles and winter survival tips. The group is then led through the Old Growth Forest's 300 year-old white pine trees. At various points, Park Interpreter Craig Kasmer and Site Historian Rob Burg stop to discuss animal signs and tracks, as well as historical facts and stories about winter logging done during Michigan's White Pine Logging Era. The hike ends, allowing participants to warm by a campfire and have a cup of hot cider while listening to logging camp stories.

- Cross Country Skiing by Lantern – Skiers can enjoy a lantern-lit cross country ski trail at Hartwick Pines State Park on Saturday evenings in January and February, weather permitting. Trails open at 6 p.m., closing by 9 p.m. The 1.25 mile groomed and lantern-lit trail begins at the Visitor Center parking lot. A campfire awaits skiers at the trailhead, and the Visitor Center has a warming room open with hot refreshments and snacks.

- Other Activities – Several special guests are scheduled each year to provide additional exciting programs to the pubic throughout the summer. Also, staff at Hartwick Pines SP offers daily programs at the Logging Museum, guided tours of the Old Growth Forest Foot Trail, and a winter lecture series of historical topics to be held on Sunday afternoons from December-March. For more information on scheduled events, call

Hartwick Pines SP at (989) 348-7068, or visit their website: http://www.michigan.gov/dnr and follow the links to Hartwick Pines State Park.

- Interpretive Potential – Given the amount of interpretive programs, events, and educational displays offered at Hartwick Pines SP, the potential for future, functional buildings exist near current structures within the park:
    - Logging Museum:
        - A blacksmith shop/carpenter shop for demonstrations and classes.
        - "State of Maine" camp building (combo bunkhouse and cook camp) with a cook stove instead of camboose for overnight programs and living history programs. This could also be used as a facility for food concessions during festivals and special events at the Logging Museum.
        - Root Cellar in the side of a hill just west of the Tote Sled for interpretive purposes to show storage of items. For the First Person Lantern Tour, the teamster can interpret this. The construction can be done as a demonstration –using red pine or cedar poles, possibly cut from the park, and earth construction.
        - Historic Logging demonstrations. Identify a suitable stand of pines in the park that could be cut and then skidded out by draft horse or oxen.
    - Visitor Center:
        - Permanent Sugar House for the interpretation and demonstration of Maple Syrup production. This could be located just off of the upper parking lot at the VC service drive, adjacent to the sugar bush, allowing accessibility to the public during the annual Maple Syrup event. With this facility, Hartwick Pines SP could expand Maple Syrup Day to several days for school programs and it would also be a central storage area for all of the Maple Syrup equipment during the off-season.

Hartwick Pines State Park Volunteer Programs

- CAMPGROUND HOST– Hartwick Pines SP is a very popular park for the Campground Host Program. This program positions volunteers throughout the campground to provide visitor services to campers. They greet, provide information on campground rules and regulations, promote educational and interpretive opportunities in the park and offer a social gathering, typically coffee hour, every Saturday and Sunday morning. The campground hosts at Hartwick Pines SP have also developed various special programs to the campers. Campground hosts usually stay at Hartwick Pines SP from mid May to the first part of October.

- FRIENDS GROUP - The Friends of Hartwick Pines SP are a volunteer group that help at special events and sponsor various festivals throughout the year. The two main festivals sponsored each year, Wood Shaving Days and Black Iron Days, are devoted to old-time logging and 19th century life. The group also takes care of the Michigan Forest Visitor Center's bookstore which features historical reference books, nature-related field guides and other coffee-table books about Michigan. The Friends group also publishes a newsletter, *PINECONE*, that talks of past and upcoming events along with other information that is occurring at Hartwick Pines SP.

Areas of Conflict

Given the diverse span of uses of Hartwick Pines State Park, there is potential for conflict between users, users and park natural, historic or cultural resources, or various stakeholders involved in the park itself. The following are identified as some conflicts that currently exist.

Department of Corrections

Within Hartwick Pines SP is 19 acres leased by the Michigan Department of Corrections Camp Lehman. A minimum security correctional facility which houses inmates throughout the year, the property causes safety concerns among visitors. Concerns are over not only the location of the facility within park boundaries, but also due to inmate work crews within the park.

Hartwick Pines State Park Use Statistics and Economic Impacts 2010

PARK USE –Hartwick Pines SP had 180, 667 visitors in 2010. 78% of visitors were day-users, the remaining 22% (39,288 visitors) attended for camping. Total revenue generated at HPSP in 2010 was $1,830,000.

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

- Summer Season- This is defined as the four month period of May through August, when schools are not in session. This is the busiest season at Hartwick Pines State Park. During this season, 64.8% of day-users and 69.6% of campers are present. Cabin use during this time in 2010 was at 49.3%.

- Fall Use Season- At Hartwick Pines SP, the fall season is defined by the months of September and October. 19.1 % of all day-use occurs within this season, while campers are at 28.8%. Cabin use during this time in 2010 was 11.6%.

- Winter Use Season- November through February see a decrease in day-use and camper populations at Hartwick Pines SP. Day-use drops to 10.7%, campers to 0.9% during this season. Cabin use, however, increased to 23.2% in 2010.

- Spring Use Season- March and April show another slight decrease in park attendance from winter use. Day-use declines to 5.4%. Camper populations decline to .7%, and cabin use declines to 15.9%. In this season, use continually increases towards the end of April into May as the weather warms. In 2010, day-use was approximately 4,900 in April, jumping to nearly 18,000 in May.

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 Hartwick Pines SP to the local community are significant. Crawford County is a boasts a stable position in the economy in spite of fluctuations across the state. Its diverse economy and natural amenities, such as Hartwick Pines SP, continually attract visitors to the area. The local economy benefits from the influx of this 'new' money to Crawford County.

Following are the relative economic impacts (based on 2010 data) of Hartwick Pines SP to the economy of Crawford County: ("MGM2-Short Form" for Wilderness SP)

DIRECT ECONOMIC EFFECTS TO THE COMMUNITY FROM DAY-USE

- *Direct spending attributable to Hartwick Pines SP visitors totaled $3,563,000. Of this, $1,491,270 is attributed to day-use, $2,072,050 to camping within the park. .*

- *Jobs totaled 112. This number includes both day-use (47) and camping (65) staff. (Note…jobs are not full-time equivalent. They include part-time and seasonal positions.)*

- *Personal Income total is $1,212,000. Day-use generated $507,160 of this, while camping activity generated $704,670.*

- *Value added (total income plus business taxes) from day-use came in at $765,670, camping at $1,063,870, totaling value added at $1,830,000.*

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 re-circulation of money spent by the park visitors in the community.*

- *Total spending = $4,711,000 (32% over direct spending)*

- *Jobs = 131 (17% over direct job impacts)*

- *Personal Income = $1,594,000 (32% over direct spending)*

- *Value added = $2,537,000 (39% over direct value added)*

NOTE….for purposes of updating economic values, the Consumer Price Index (CPI) is often used to adjust values over time. Through the following link, [http://www.bls.gov/home.htm] a CPI Inflation Calculator is located in the category of "Inflation and Consumer Spending".

The following is according to a 201 report ("MI CRS Statistics 2007") by Spherix, the state contractor in charge of administering the Campground Reservation System (CRS).

- Hartwick Pines SP was the 47th highest ranking park in the state of Michigan with 4,020 campground reservations throughout their 2007 camping season. Of the 98 State Parks and Recreational Areas (RA) in Michigan, 74 of them offer camping, 73 of those use Spherix's CRS system to record data. Of the 4,020 reservations made within these parks, 834 were made by way of the Reservation Call Center, 1-800-44-PARKS, 777 were made directly at Hartwick Pines SP, and the

remaining 2,124 were made by way of the internet web site at, http://www.midnrreservations.com/campgrounds/index.cfm.

- The average amount paid per reservation at Hartwick Pines SP was $81.27, less than the state average of $90.30. The high in the state was Craig Lake SP with $256.25 and the low was Highland RA with $25.97.

- The average number of people per reservation at Hartwick Pines SP was 4.7, slightly less than the state average of 4.8 people. The high in the state was Highland RA with 15 people and the low in the state was Fayette Historic SP and Newaygo SP with 1.9 people per reservation.

- The average length of stay at Hartwick Pines SP was 2.2 nights, slightly lower than the state average of 2.5 nights. The high in the state was Grand Haven SP with 4.6 nights and the low was Highland RA with 1.6 nights.

- Of the state parks and recreational areas that offer camping, Hartwick Pines SP had a total of 10,072 net campground nights during the 2007 camping season. Ludington SP was the highest in the state with 60,773 nights and Ortonville RA was the lowest with 55 nights.

- Visitors from these top 11 cities were the most commonly placed reservations at Hartwick Pines SP in 2007: Midland, Bay City, Saginaw, Macomb, Grand Blanc, Grand Rapids, Jackson, Traverse City, Fenton, Lansing, and Lapeer. Michigan.

Hartwick Pines State Park Stakeholder Input

DNR Programs

Hartwick Pines SP has a long history of cooperative management with other Department of Natural Resources divisions. The Forest Mineral Fire Management Division of the Grayling Field Office, the Wildlife Division of the Gaylord Operation Service Center, the Fisheries Division out of the Grayling Field Office and Gaylord Operation Service Center, the Law Enforcement Division out of the Roscommon Operation Service Center, the Office of Land and Facilities out of the Gaylord Operation Service Center, the Education and Outreach (EO) program with the Office of Communications out of Lansing and the Stewardship Program with the Park and Recreation Division in Lansing all have key stakes in Hartwick Pines SP.

Other State Agencies

Other state agencies besides the Department of Natural Resources have stake in Hartwick Pines SP. The Standish Correctional Facility with the Department of Corrections and the History, Arts, and Libraries section all have stake in Hartwick Pines SP.

Local Agency Programs

The Grayling Regional Chamber of Commerce along with the Grayling Kiwanis Club have stake in Hartwick Pines SP. Hartwick Pines SP lies within Grayling Township which also has key stake in Hartwick Pines SP.

Sporting Clubs/Recreation Related Organizations

Recreational stakeholders within Hartwick Pines SP include the River Park Campground, located south of the Hartwick Pines SP headquarters building, as well as the Michigan Mountain Biking Association (MMBA) based out of Grayling. Forbush Corner, a commercial cross-country ski operation located in Frederic, Michigan, is also a stakeholder with Hartwick Pines SP. Forbush Corner once shared part of Hartwick Pines SP trail system.

Special Interests

The Friends of Hartwick Pines is a major stakeholder in the park. The group raises funds to restore the steam-powered traction engine that operates the working sawmill exhibit on the park grounds, in addition to several other functions the serve. There is a membership fee to join and membership is open to everyone.

Another special interest key stakeholder for Hartwick Pines SP is Bill Botti. Bill is a retired DNR Forester who worked a number of years with the DNR, retiring from the Lansing office. Though retired, Bill continues to assist the staff in training of summer forestry employees.

Public

Many visitors who come to Hartwick Pines SP each year are repeat customers. From the Public Policy Associates 1997 “Michigan State Parks Study”, 65% to 68% of visitors to State Parks in the Northern Lower Peninsula are “Likely” to return to the park within twelve months. From the same study, the likelihood of a park visitor ‘recommending’ a particular park to others was also high in the Northern Lower Peninsula, with a range of 88% to 91% saying that they would recommend visiting the park.

PLANNING OVERVIEW

Meetings:

- October 12,2006 Start-Up Planning Team Meeting
- February 1, 2007 Planning Team Meeting
- March 25, 2008 Planning Team Meeting
- June 17, 2008 Stakeholder Input Meeting
- October 7, 2008 Public Input Meeting

Plan Reviews:

- _____ PRD-Management Team
- _____ NLP-Ecoteam
- _____ DNR-Statewide Council
- _____ Michigan State Parks Advisory Committee

Appendix

IV. NATURAL RIVER PLAN--AU SABLE RIVER

A. Goal

To preserve, protect and enhance the river environment in a natural state for the use and enjoyment of present and future generations.

B. Objectives

1. To maintain water quality consistent with the designated classification of the river and adhere to the concept of nondegradation of water quality.
2. To prohibit development or activity which may damage the ecologic, aesthetic or historic values of the river and adjacent lands.
3. To ensure that any development which may occur shall be done in an orderly manner consistent with the natural environment and aesthetic qualities of the stream.
4. To ensure that recreational uses which occur, be done in an orderly manner consistent with the natural environment and aesthetic qualities of the stream, and that a quality recreation experience is maintained.

C. Proposed Designation

The following portions of the Au Sable River are designated as a wild-scenic river under authority of Part 305, P.A. 451 of 1994 (approximate mileage--mainstream (98 miles), South Branch (34 miles), North Branch (35 miles), and tributaries (182 miles). (Total 349 miles.)

MAINSTREAM--from the confluence of Kolka and Bradford creeks (T28N, R4W), downstream to Loud Dam (Iosco County)

Kolka Creek--from the outfall of Lynn Lake (T29N, R4W) to its confluence with Bradford Creek

Bradford Creek--from the outfall of Big Bradford lake (t28N, R3W) to its confluence with Kolka Creek

East Branch--from the outfall of Barnes Lake (t28N, R2W) to its confluence with the Au Sable River

South Branch--from M76 (T23N, R1W) to its confluence with the Au Sable River

Douglas Creek--from its source (t25N, R1W) to its confluence with the south Branch.

Thayer Creek--from its source (T25N, R2W) to its confluence with the South Branch.

Hudson Creek--from its source (T25N, R2W) to its confluence with the South Branch

Robinson Creek--from its source (T23N, R2W) to its confluence with the South Branch

Beaver Creek--from its source (T25N, R3W) to its confluence with the South Branch

East Creek--from its source (T24N, R1W) to its confluence with the South Branch

South Creek--from its source (T24N, R1W) to its confluence with the South Branch

North Branch--from Ski Slope Drive (T30N, R3W) to its confluence with the Au Sable River

Turtle Creek--from the outfall of Turtle Lake (T30N, R2W) to its confluence with the North Branch

Chub Creek--from the outfall of Bridge lake (T29N, R3W) to its confluence with the North Branch

Big Creek--from the confluence of the East and West branches (T27N, R1W) to its confluence with the North Branch

West Branch Big Creek--from the outfall of Caulkins Lake (T29N, R1W) to its confluence with the East Branch Big Creek

Middle Branch Big Creek--from the outfall of West Twin Lake (T29N, R1E) to its confluence with the West Branch Big Creek

Big Creek--from the confluence of the East and West branches (T26N, R1E) to its confluence with the Au Sable River

West Branch Big Creek--from its source (T25N, R1e) to its confluence with the East Branch Big Creek

East Branch Big Creek--from its source (T25N, R2E) to its confluence with the West Branch Big Creek

Sohn Creek--from its source (T27N, R1E) to its confluence with the Au Sable River

Beaver Creek--from the east section line of section 26 (T27N, R1E) to its confluence with the Au Sable River

Wolf Creek--from its source (T26N, R3E) to its confluence with the Au Sable River

Loud Creek--from its source (26N, R3E) to its confluence with the Au Sable River

Perry Creek--from the outfall of Perry Lake (T27N, R3E) to its confluence with the Au Sable River

Comins Creek--from its source (27N, R3E) to its confluence with the Au Sable River

Glennie Creek--from its source (T27N, R4E) to its confluence with the Au Sable River

Nine Mile Creek--from its source (T26N, R4E) to its confluence with the Au Sable River

Blockhouse Creek--from its source (T27N, R4E) to its confluence with the Au Sable River

The Department of Natural Resources feels that these tributaries possess the necessary outstanding fish, wildlife, scenic, aesthetic, flood plain, ecologic, historic or recreational values to be of statewide significance and hence, should be considered for designation.

Other tributaries not recommended for designation may still be protected through adoption of protective zoning ordinances at the local level. Although not formally designated, these tributaries should be considered part of the natural river system for agency reviews of applications for sewage treatment plants, dredge and fill permits, impoundments, etc.

D. Natural River District

The Au Sable River Natural River District includes an area 400 feet wide on each side of and parallel to all channels of the designated mainstream and to the designated tributaries. This district establishes a definable area within which local zoning may guide future development and use. ESTABLISHMENT OF THIS DISTRICT IN NO WAY IMPLIES A "TAKING" OF THESE LANDS BY THE STATE OR OPENING THEM UP TO PUBLIC USE. PRIVATE LANDS REMAIN PRIVATE AND ARE SUBJECT TO THE RIGHTS OF PRIVATE OWNERSHIP.

E. Residential Housing

Unplatted lots and new subdivisions in the Natural River District shall accommodate the building setbacks as set forth in Section G, and shall have a minimum riverfront lot width of 200 feet on the mainstream, the South Branch, and the North Branch. On all other designated tributaries, lots shall be a minimum of 150 feet wide.

Lots or property of record that are nonconforming at the time of the effective date of these regulations because of lack of size to accommodate building setbacks from the water's edge shall be allowed to be built upon and variances shall be allowed for required setbacks upon such reasonable terms as set forth by the zoning board, providing that structures be so placed as to best meet the objectives of the Natural River Act.

One single family dwelling will be permitted on each lot or parcel within the Natural River District subject to the building setbacks as set forth in Section G. A single-family dwelling is defined as a detached building or structure designed for or occupied exclusively by one (1) family and containing housekeeping facilities.

In certain circumstances, cluster or multi-family dwellings may be permitted, provided setback and other restrictions are adhered to, and that the density of development is not increased.

F. Industrial and Commercial Structures and Uses

1. New industrial uses and buildings, and expansion of existing uses and buildings will not be permitted within 400 feet of the designated river and tributaries.

2. Commercial uses and buildings; such as gas stations, motels, restaurants, retail stores, etc., will not be permitted within 400 feet of the designated river and tributaries. However, certain commercial uses requiring special exception permits may be compatible with maintaining the natural aspects of the river. Those uses permitted under the special exception procedure shall be strictly controlled. Controls such as location, parking, drainage, setback, natural vegetation strip, signs, and hours of operation of the proposed use, shall be included in the special exception procedure. Those uses which may be compatible with natural river designation include:

   a. Commercial crop farms or forest plantations that are landward of the native vegetation strip.
   b. Small home operated businesses such as photography studio, beauty shop, home repair, law or real estate offices, insurance or other businesses which do not alter the residential nature of the property and

are in conformance with established setbacks and vegetative management guidelines.

c. Detached rental cabins with light housekeeping, but not motels, which are in conformance with setback requirements and vegetative management guidelines.

d. New canoe liveries, expansion of existing liveries, or expansion of commercial launching or retrieval of watercraft in the designated portions of the river system shall be prohibited. In considering rezoning, special exception or variance requests, either within or outside of the 400 foot Natural river District, local units of government should examine closely the effects such use will have on the natural qualities of the Au Sable river system, the need for additional local government services, and the safety and enjoyment or riparian landowners and other river users.

G. Building Setbacks

On the designated portions of the Au Sable River mainstream, the South Branch, and the North Branch, new buildings and appurtenances will be required to setback a minimum of 200 feet from the ordinary high water mark.[1] The setback may be decreased one foot for every one foot rise in bank height to a minimum of 150 feet from the ordinary high water mark.

Further:

New buildings and appurtenances must be setback at least 25 feet from the top of a bluff[2], on the noncutting edge[3] of the stream.

[1]Ordinary high water mark means "the line between upland and bottomland which persists through successive changes in water levels, below which the presence and action of the water is so common or recurrent in the soil itself, the configuration of the surface of the soil and the vegetation. Where water returns to its natural level as the result of the permanent removal or abandonment of a dam, it means the natural ordinary high water mark. (This is the definition used for administration of Part 301, P.A. 451 of 1994.)

[2] "Bluff" means the top of a steep bank rising sharply from the water's edge.

[3] "Cutting edge of a stream" means the outside edge of a river or stream where water velocity has increased to the point where it may cause soil or stream bank erosion.

- New buildings and appurtenances must be set back at least 50 feet from the top of the bluff on the cutting edge of a stream.

- No building shall take place on land that is subject to flooding.[4]

[4] "Land that is subject to flooding" means that the area of land adjoining the designated portions of rivers and tributaries which:

1. Will be inundated by a flood which as a one percent chance of occurring or being exceeded in any given year (intermediate regional flood), as determined by detailed hydraulic studies which are acceptable to the Michigan Water Resources Commission; or
2. In the absence of such detailed flood plain studies, have a history of flooding or are delineated by approximate methods such as USGS flood prone area maps or HUD's special flood hazard boundary maps.

On all other designated tributaries, new buildings and appurtenances will be required to setback a minimum of 100 feet from the ordinary high water mark of the tributary provided that no building shall take place on land that is subject to flooding. The setback may be decreased one foot for every one-foot rise in bank height to a minimum of 75 feet from the ordinary high water mark.

H. Building Design and Screening

1. Property owners are encouraged to use natural materials and natural unobtrusive colors in the construction of new or remodeling of existing buildings. Upon request to the Department of Natural Resources, individual property owners will receive technical advice on location and design of structures and management of their lands. Such requests and the Department's response should be channeled through the local zoning administrator.

2. Property owners of new or existing buildings visible from the river are encouraged to screen them with native vegetation. The Department of Natural Resources Area Forester and Soil Conservation Service will advise on planting stock, etc., on request. When available at state nurseries, recommended planting materials will be supplied to property owners at cost.

I. Docks

The construction of docks along the designated portions of the Au Sable River system is discouraged. However, if necessary to provide safe and ecologically sound access for the riparian landowner, docks may be constructed not to exceed four feet in width nor more than 12 feet in length with no more than four feet of the dock extending over the water. Property owners located on the impoundments affected by fluctuating water levels will

be allowed to construct a dock large enough to provide safe and reasonable access to the water. Docks require a permit from the Department of Natural Resources and must be constructed in accordance with the rules of Part 301, P.A. 451 of 1994. The use of "natural" materials and camouflaging is encouraged. Property owners are encouraged to build "log-sod covered" docks. Upon request from the property owner, the Department of Natural Resources will supply plans and specifications for this type of dock or assist in the siting and location of a dock so as to blend in with the natural surroundings and best meet the objectives of natural rivers designation.

J. On-Site Sanitation Systems

All habitations within the Natural River District must contain sanitary waste disposal facilities conforming in type to those required by health specifications of the State of Michigan and the county or district health department having legal jurisdiction. The facilities provided may be for either water borne waste disposal by the septic tank-absorption tile field method of for non-water borne disposal by the use of a health department approved or other state approved sanitary system.

New septic tanks and absorption tile fields or other approved sanitary systems within the Natural River District shall be located not less than 150 feet from the ordinary high water mark nor within land that is subject to flooding. The absorption field shall be located in a well-drained area and the bottom of the field shall be at least four feet above the known high groundwater table. No absorption field shall be closer than 100 feet from any surface or subsurface drainage system, including sump pumps discharging into the river or its tributaries.

The bottom of an earth privy shall be not less than four feet above the known high groundwater table. Where this is not feasible, a watertight vault shall be installed.

K. Signs

Only those signs necessary for: (a) identification, (b) direction, (c) resource information, (d) regulation of use, and (e) related to permitted uses, shall be placed along the designated river and tributaries. Within the Natural River District, signs for the sale of products or services shall be prohibited. Signs within the Natural River District must be:

1. Not illuminated.

2. In conformance with the following standards.

   a. Signs may not be larger than one square foot in area posted no more than one per 100 feet or one sign posted at upstream and downstream corner of lot. However, one temporary real estate "For Sale" sign per

parcel of land not exceed four square feet in area shall be allowed outside of the natural vegetation strip (as described in Section S).

b. Signs posted by public agencies must be kept to a minimum, of rustic design, no larger than 10 square feet in area, not attached to any tree or shrub, and placed so as to best meet the objectives of the Natural river Act.

(Note: Signs by public agencies may need to be larger or within the 400 foot Natural River District to provide for public safety, such as warning of impending dangers in the river, or for an interpretive or historic sign.)

L. Soil Erosion and Sediment Control Measures

All earth changing activities, other than normal landscaping or maintenance, undertaken within 500 feet of a lake or stream, must be conducted in accordance with the requirements of Part 91, P.A. 451 of 1994, its administrative rules and those procedures established by the local enforcing agency.

Development along the river involving earth moving shall provide for water disposal and/or protection of the soil surface during and after construction.

Practical combinations of the following will provide effective erosion control when skillfully used in planning and construction:

1. The development plan should be fitted to the soils and topography so as to create the least erosion potential. Local offices of the Soil Conservation Service can provide detailed information on the soil characteristics of a given site and on the suitability of such soils for various uses.

2. Whenever feasible during construction, natural vegetation shall be retained and protected. Where adequate vegetation does not exist, temporary or permanent vegetation shall be established where possible.

3. Where it is necessary to remove vegetation for construction, limit the exposed area to the smallest practical size at any one time.

4. Limit the duration of exposure to the shortest practical time.

5. Critical areas exposed during construction should be protected with temporary vegetation and/or mulching.

6. Permanent vegetation and improvements, such as roads, storm sewers and other features of development capable of carrying storm runoff in a safe manner, shall be installed as early as possible.

7. Provisions should be made to accommodate the increased runoff caused by changed soil and surface conditions during and after construction.

8. Sediment basins to remove suspended soil particles from runoff water from land undergoing development should be constructed and maintained wherever erosive conditions indicate their need to prevent sediment damage to the river.

9. Diversions, grassed waterways, grade stabilization structures, and similar mechanical measures required by the site shall be installed as early in the development as possible.

M. Minerals

New development, exploration or production of oil, gas, salt brine, sand and gravel or other minerals except groundwater are not permitted within 300 feet of the designated river or tributaries (Sec. 30509, Natural River Act). On new leases on state land, Natural Resources Commission policy prohibits drilling for gas or oil within 1/4 mile of any major stream.

N. Utilities and Transportation Systems

Except on existing rights-of-way, new gas or oil pipelines, highways, roads, or electric transmission lines shall not be permitted in the Natural River District or to cross the designated river and tributaries without prior written consent of the Department of Natural Resources. Plans for these transmission lines which include crossing the river district or the river and designated tributaries shall be done in accordance with the rules entitled Utilities and Publicly Provided Facilities in Natural Rivers Areas (Section 30514 of Part 305, P.A. 451 of 1994).

New distribution lines shall not cross the designated portions of the river or housing setback zone unless they are placed underground, unless overhead lines are less disruptive to the environment. Plans for distribution lines which are to be placed under the river shall be approved by the Department of Natural Resources and all construction shall meet the requirements under the Soil Erosion and Sedimentation Control Act and the Inland Lakes and Streams Act. Local service lines to private dwellings shall originate from the landward side of the dwelling insofar as practical.

When replacing an existing bridge or culvert, or constructing a new road crossing over a designated natural river, a structure to accomplish the road crossing shall be designed to maximize the purpose and objectives of the Natural River Act. In reviewing an application, the Department shall consider the anticipated effects of the structure on any portion of the natural river area.

Management of trees, shrubs and other vegetation for maintenance of rights-of-way shall be done manually in the natural vegetation strip. However, hand application of herbicides to stumps of selectively cut trees will be allowed in the natural vegetation strip where it is the objective to establish and maintain

a low growing shrub community in this zone. The Department may authorize application of selected pesticides to control insect or disease infestations.

O. Agriculture

1. Grazing within the natural vegetation strip shall be prohibited. Livestock must be fenced out to protect the riverbanks. Cattle crossings and watering areas shall be constructed according to accepted methods, after the landowner has consulted with the local Soil Conservation District, Soil Conservation Service, County Extension Service, and/or Department of Natural Resources.

2. Water withdrawal for irrigation will not be affected by natural river designation, but will continue to be permitted in accordance with the riparian doctrine of reasonable use.

P. Disposal of Solid Wastes

No unsightly or offensive material, including, but not limited to: trash, refuse, junk cars, junk appliances, or garbage, shall be dumped or stored within the Natural River District.

Q. Stream Alteration

To protect the natural character of the river and the natural flow of its waters, no damming, dredging, filling or channelization of the stream channel will be permitted in those portions of the Au Sable river or tributaries designated under the Natural River Act unless approved by the Department of Natural Resources under authority of Part 301, P.A. 451 of 1994.

Natural materials should be used to construct stream bank stabilization projects to control erosion, or to enhance fisheries habitat. These structures should be camouflaged and the local Conservation Officer or District Fisheries Biologist contacted to provide technical advice for such projects.

Permission must be obtained from the property owner when removing fallen trees and log jams from the river. If any extensive removal of log material is anticipated, advice should be sought from the District Fish Biologist in order to protect existing fisheries habitat. Consideration should be given to maintaining reasonable watercraft on the river.

R. Land Alteration

Cutting or filling for building, including appurtenances, on the flood plain and filling for buildings on the upland within 400 feet of the river's edge where the highest groundwater table is within four feet of the surface, shall be prohibited. Dredging or filing for the construction of fish or wildlife ponds within 500 feet of the river requires a permit under Part 301, P.A. 451 of 1994 and Part 361, P.A. 451 of 1994.

S. Natural Vegetation Strip on Adjacent Shorelines

Trees, shrubs and other vegetation types native to the area shall be maintained and enhanced on each side of the river to retain the river's natural values. The presence of the natural vegetation strip is to help in stabilizing the river banks, prevent erosion, provide shading which will help maintain cool water temperatures, absorb nutrients from surface water runoff, provide screening of man-made elements, enhance fisheries and wildlife habitat and maintain the aesthetic natural quality of the river.

1. Vegetation Strip:

   Public Land. On all publicly owned land, a one hundred and fifty (150) foot minimum restricted cutting strip shall apply on each side of the mainstream and designated tributaries.

   Private Land. On privately owned land, a seventy-five (75) foot minimum restricted cutting strip shall apply on each side of the mainstream, South Branch, and the North Branch, and on all other designated tributaries, a fifty (50) foot restricted cutting strip shall apply.

   Distances of the natural vegetation strip are measured horizontally from the ordinary high water mark.

2. Restricted Cutting and Removal of Vegetation: Restricted cutting of dead, diseased, unsafe or fallen trees is allowed. Removal of trees for commercial timber harvest, access or woodlot improvement shall be allowed upon specific approval of the Department of Natural Resources or its representative.

3. Selected Cutting for Visual Access: Trees and shrubs may be selectively pruned or removed for a filtered view of the river upon approval of the Department of Natural Resources or its representative. Filtered view of the river means maintenance or establishment of woody vegetation of sufficient density to screen new developments from the river, provide for streambank stabilization and erosion control, serve as an aid to infiltration of surface runoff and provide cover to shade the water. It need not be dense as to completely block the river view. It means no clear cutting.

4. Agriculture: Grazing within the natural vegetation strip shall be prohibited. Livestock must be fenced out to protect the river banks. Cattle crossings and watering areas shall be constructed according to accepted methods, after the landowner has consulted with the local Soil Conservation District, Soil conservation Service, County Extension Service, and/or the Department of Natural Resources.

5. Planting of Native Vegetation: Planting of native species is encouraged in the vegetation strip to enhance and protect the river's edge. The

Department of Natural Resources or the Soil Conservation Service may be consulted for selection of native plant species. For purposes of erosion control and screening of existing developments within the Natural River District, and where available at state nurseries, recommended planting materials will be supplied to property owners at cost from the Department of Natural Resources.

T. Recreation

1. Campgrounds and Picnic Areas: On public land, no new structures associated with a campground or picnic area, except those necessary to protect the riverbank, will be permitted within 300 feet of the designated mainstream or tributaries. Such structures shall be designated and constructed in such a manner as to further the purposes of the Natural Rivers Act. It is also recommended that existing public campgrounds be relocated away from the river to meet the setback limits. Where possible, the recommended vegetation strip should be reestablished and maintained.

   On public lands adjacent to the river, camping will be permitted only at designated camping areas.

2. Fishing, Hunting and Trapping

   a. Fishing, hunting and trapping will be permitted in the Natural River District in accord with current state and local laws and regulations.
   b. IT IS EMPHASIZED THAT NATURAL RIVER DESIGNATION, OR ESTABLISHEMENT OF A ZONING DISTRICT ALONG THE RIVER, DOES NOT OPEN PRIVATE LANDS TO THE PUBLIC.
   c. Fisheries management practices will be done in conformance with the character of the area and objectives of the natural river designation. Emphasis will be placed on maintaining the high quality trout fisheries of the Au Sable River system.

3. Lakes: No lake shall be built within the Natural River District.

4. Boating and Canoeing:

   a. Boating and canoeing is permitted.
   b. If public safety or compatible use of state waters are threatened in the future, local governmental units may wish to regulate the use or size of motorized watercraft. Such controls should be done in accordance with Part 801, Marine Safety, of 1994 PA 451.

5. Litter: In view of the special status of the Au Sable River and its unique beauty and character, the Department of Natural Resources shall encourage and cooperate with private interests was well as other public agencies that have programs for river cleanup.

6. Recreational Controls: It is recognized that recreational conflicts, misuse and overuse is occurring throughout the state, and particularly on the Au Sable River. The limit of the statutory authority for controlling recreational uses of Michigan's waterways has not been clearly defined either through the judicial system or by the Michigan legislature. When it is determined that the Department of Natural Resources has such authority, the Department shall initiate such controls as necessary over the numbers, timing, location and conduct of river users.

   The Department will make every effort to cooperate with local liveries, property owners, anglers and local governments in developing such guidelines and for the need for modification or relocation of existing public access sites.

U. Public Access Sites

No additional boat or canoe access sites shall be located on any streams in the Au Sable River system. Because of the generally small size of the North Branch and the other tributaries, except the South Branch downstream of Roscommon, canoeing should be discouraged. No additional boat or canoe access sites are recommended at this time. Existing sites may have to be modified to limit or control canoe access, control erosion, or enhance aesthetic values. New or expansion of existing access sites will be provided only if it can be shown that there is a need for such access, and that development and use of such facilities will not adversely affect the objectives of natural rivers designation. Any development must be done in accordance with the setback and vegetative management provisions of this plan.

Any additional fishermen public access sites on the mainstream or tributaries must be walk-in only with parking facilities at least maintaining established setbacks. These should be located only where there are sufficient adjacent public lands so as to avoid trespasser conflicts on privately owned lands.

To help control trespass, litter and other associated problems, watertight vault toilets and trash collection facilities at public access sites and rest areas may be located closer than the recommended setback.

V. Motorized Vehicles

Operation of all motorized vehicles other than on designated public roads, access roads to permitted uses, will be prohibited within the Natural River District.

Use of ORV's on publicly owned lands contiguous to the Natural River District shall be in conformance with guidelines and regulations of the agency administering such lands, and with state and federal noise level standards strictly enforced. (Muffler requirement of MVC--Section 707, Act 300, P.A. 1949, etc.)

W. Historic and Archaeological Sites

The identification, preservation and interpretation of historical and archaeological sites along the designated portions of the Au Sable River and tributaries, by public agencies and local historical societies, is strongly encouraged. It is illegal to disturb or dig in a designated site without prior written consent from the appropriate state and/or federal agency.

X. Federal Wild and Scenic Rivers Act

The mainstream of the Au Sable River from Mio to the Alcona Federal Power Commission (FPC) boundary has been designated by Congress as a Scenic River component of the federal Wild and Scenic River system. As a 23-mile segment of the Au Sable River mainstream has been designated under the federal act, a management plan will be developed by the U.S. Forest Service, in cooperation with the Michigan Department of Natural Resources for that designated segment only.

Protection of the river may be primarily achieved through a combination of three means. These are:

1. Local and/or state zoning.
2. Acquisition of scenic easements.
3. Acquisition of lands through fee simple title.

The management plan prepared by the U.S. Forest Service should reflect this plan and state natural river designation.

The federal plan should allow every opportunity for local and/or state natural river zoning to protect the river environment and to meet the purposes and objectives of scenic river designation.

Section 30513 of Michigan's Natural River Act states, in part, "Nothing in this act shall preclude a component of the system from becoming a part of the national wild and scenic river system under the federal wild and scenic rivers act, Public Law 90-542, approved October 2, 1968". While this provision does exist, the Department of Natural Resources feels that the state/local cooperative protection effort implemented through Natural Rivers' designation affords adequate protection to the Au Sable River and its tributaries. The Department will affirmatively resist any attempt to incorporate the Au Sable River under the Federal Wild and Scenic Rivers Act (PL 542, as amended), and other similar programs in the future, if local and/or state natural rivers zoning protection is in place and properly enforced.

Y. Military Use

Generally, military use of any of the streams or land areas within the 400-foot Natural River District is not compatible with the goal and objectives of river protection. Unless specifically authorized in a written cooperative agreement

between the departments of Natural Resources and Military Affairs approved by the Natural Resources Commission, military use shall not be authorized within the 400 foot Natural River District.

Z. Administration

1. Land Use Guidelines

a. Under Part 305, zoning by local government units and/or the state shall be the chief means of protecting the Au Sable River and its designated tributaries as a natural river.

1) Zoning shall be applied within the 400-foot Natural River District on both the designated mainstream and tributaries. Upon adoption of a local zoning ordinance, certified copies of maps and/or documents describing the Natural River District shall be filed with the local tax assessing officer and County Equalization Department. In establishing true cash value of property within the Natural River District, the assessing officer shall recognize the effect of use limits established by the ordinance (Section 30511, Part 305, P.A. 451 of 1994).

Local government units are urged to adopt building setbacks, vegetation management and septic system controls for other streams under their jurisdiction not within the natural rivers designation.

Any property owner with undeveloped river frontage on the designated portions of the Au Sable River or its designated tributaries may sign an open space development rights easement with the state under Part 361, P.A. 451 of 1994, to obtain potential tax relief.

2) Appeals: Under certain circumstances, strict adherence to this plan may create unreasonable hardships for the frontage owners. Such case may be appealed to the appropriate local board for a variance. Applications for a variance shall be based on a site plan.* The County Health Department, Soil Conservation Service, appropriate staff and field personnel of the Department of Natural Resources and other experts should be consulted to recommend to the appeals board a course of action which will have the least degrading impact on the character of the natural river. Final determination of the variance shall be made by the local appeals board.

3) Nonconforming uses: As stated in Section 13 of the Natural Rivers Act, Act 231, P.A. 1970, "the lawful use of any building or structure and of any land or premise as existing and lawful at the time of enactment of a zoning ordinance or rule or an amendment thereof

may be continued although such use does not conform with the provisions of the ordinance, rule or amendment. The ordinance or rule shall provide for the completion, restoration, extension or substitution of nonconforming uses upon such reasonable terms as may be set forth in the zoning ordinance or rule."

b. Land Acquisition

1) The state may purchase or trade lands with owner consent on the designated river and tributaries to maintain or improve the river and its environment. Efforts should be made by the appropriate public agency to purchase key parcels for canoe rest areas where heavy use exists, walk-in fishermen access, or to protect sensitive environmental areas.

2) Some landowners in the Natural River District may be interested in offering scenic or other easements or inserting restrictions in their deeds which serve to protect the rive environment and which coincide with their property interests. The opportunity to obtain such easements or restrictions should be pursued by interested public agencies.

*Site Plan--means a surface view showing elevations or contours of the grounds, including existing earth fills; generalized vegetative cover; size, location and spatial arrangement of all proposed and existing structures and uses on the site; location and elevations of streets, access roads, water supply and sanitary facilities.

c. State Resources: Overall responsibility for implementing and coordinating the natural river plan is assigned to the Region II Office of the Department of Natural Resources. The Natural Rivers Unit and the Department of Natural Resources Natural Rivers Task Force will act in an advisory capacity. Enforcement of water quality standards and water use regulations will be the responsibility of the Land and Water Management and other divisions of the Department of Environmental Quality.

2. Other laws and programs reinforcing natural rivers management objectives should be utilized to the extent necessary to protect the river in implementing the management plan for the river and tributaries (see Appendix A).

AA. State-Federal Cooperation

The Department of Natural Resources will work towards the development of a cooperative agreement with the U.S. Forest Service. Such an agreement shall address enforcement and visitor management, public lands administration and the protection of the natural values of the Au Sable. Such a cooperative agreement shall be developed in accordance with the Au Sable Natural River Plan as approved by the Natural Resources Commission.

BB. Management of Areas Beyond the Natural River Zone

Land use and water resources are closely related. What happens on the lands beyond the Natural River District, but within the drainage area of the river, affects the river. Local units of government adjacent to the District, through their powers to influence the location, timing and nature of development, can have a positive effect on water resources.

It is recommended that local governmental units zone adjacent to the Natural River District to maintain the integrity of the Au Sable River and designated tributaries as a wild-scenic river:

1. By limiting residential development to low density single-family structures or medium density cluster developments. Medium density cluster developments are recommended because it is easier to provide services and control.

2. By providing districts where industry which may produce noise, smoke, fumes, odors, etc., will not affect the natural characteristics of the river area.

3. By providing districts for commerce where heavy traffic, parking, automobile exhaust and noise will not create environmental intrusions.

Further, it is recommended that local units of government incorporate water resource protection and/or management measures into their plans, programs and decisions involving land use. Such measures are of particular importance when dealing with lands in the stream corridor as defined below.

A stream corridor essentially consists of lands contiguous to the stream, the alteration or development of which could potentially cause direct impacts on the stream and its environment. It is a composite of:

1. Soil types with severe limitations for development
2. Vegetation along creek banks
3. Wetlands
4. Slopes
5. Flood profiles when known.

Sensitive areas involving one or more of the above factors may occur within the drainage area of the river but outside of the Natural River District itself. Modification or development within such areas may adversely affect water resource benefits within the district or create problems requiring costly public investment to rectify.

It is recommended that local units of government consider such measures as regulating changes in surface water runoff from specific locations through use of the site review process; and protecting sensitive areas outside of the Natural River District through use of conditional use permit procedures.

On private lands adjacent to and within one-quarter mile of the Natural River District, it is recommended that the local Soil Conservation Districts, local Soil Erosion and Sedimentation Control agencies, Cooperative Extension Service and the Department of Natural Resources cooperate with landowners to ensure that timber harvest, agricultural practices, housing, road building or other land use activities are compatible with the wild-scenic designation of the river and with maintaining the water quality of the river.

FOOTNOTES

[1]Ordinary high water mark means "the line between upland and bottomland which persists through successive changes in water levels, below which the presence and action of the water is so common or recurrent in the soil itself, the configuration of the surface of the soil and the vegetation. Where water returns to its natural level as the result of the permanent removal or abandonment of a dam, it means the natural ordinary high water mark. (This is the definition used for administration of the Inland Lakes and Streams Act, Act 346, P.A. 1972.) Page xx.

[2] "Bluff" means the top of a steep bank rising sharply from the water's edge. Page 37.

[3] "Cutting edge of a stream" means the outside edge of a river or stream where water velocity has increased to the point where it may cause soil or stream bank erosion. Page XX.

[4] "Land that is subject to flooding" means that the area of land adjoining the designated portions of rivers and tributaries which:

3. Will be inundated by a flood which as a one percent chance of occurring or being exceeded in any given year (intermediate regional flood), as determined by detailed hydraulic studies which are acceptable to the Michigan Water Resources Commission; or
4. In the absence of such detailed flood plain studies, have a history of flooding or are delineated by approximate methods such as USGS flood prone area maps or HUD's special flood hazard boundary maps. Page 37.