

WARREN DUNES STATE PARK PHASE 2 GENERAL MANAGEMENT PLAN

LONG RANGE ACTION GOALS

Long-range management guidance focused on the specific natural resources, historic/cultural resources, recreation opportunities and education/interpretation opportunities of Warren Dunes State Park



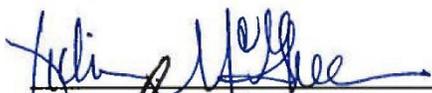
Michigan Department of Natural Resources
Parks and Recreation Division
04/10/2019

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This plan was prepared by:
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Michigan Department of Natural Resources, Parks & Recreation Division

Warren Dunes State Park Phase 2 General Management Plan Approvals:



Chief, Planning & Infrastructure Section

7.24.19
Date



Chief, Field Operations Section

8/1/19
Date



Chief, Parks & Recreation Division

8/7/19
Date



PLAN APPROVAL RECOMMENDATIONS:

Reviewed and approved by:

Drew Montgomery, Park Manager

Joe Strach, Regional Field Planner

Gary Jones, Plainwell District Supervisor

Ray Fahlsing, Stewardship Unit Manager

Debbie Jensen, Park Management Plan Administrator

FOR INFORMATION:

PRD – SECTION CHIEFS

MSAPC – STEWARDSHIP SUBCOMMITTEE

NRC – MICHIGAN STATE PARK ADVISORY COUNCIL

RE: Warren Dunes GMP Phase 2 Final Plan Approval:

4.17.2019

I approve the Warren Dunes Phase 2 General Management Plan.

Gary Jones
Plainwell District Supervisor
621 N. 10th St.
Plainwell MI 49080
269-204-7044

4.23.2019

I approve the Warren Dunes Phase 2 GMP.
Thank you!

Debbie Jensen
Park Management Plan Administrator
Michigan Department of Natural Resources
Parks and Recreation Division
517-284-6105
JensenD1@michigan.gov

Invest in Michigan's future - check yes! Learn more about the Recreation Passport at:
www.michigan.gov/recreationpassport

4.15.2019

Nice job! I approve.

Joe Strach

4.15.2019

Wow....That's a lot going in...Looks good

Drew

5.30.2019

I approve the Warren Dunes GMP Phase 2 Final Plan.

- Ray

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1) Introduction

Warren Dunes State Park is located on Lake Michigan in Berrien County, 20 miles north of the Indiana border. The 1,439-acre park was from the City of New Buffalo in 1938. The City of New Buffalo originally received the property from the Edward K. Warren Foundation in 1924 to provide opportunities for recreational uses and experiences that are unique and compatible with the park’s natural resources. The park was also established to protect the natural resources and to provide educational and interpretive opportunities for the public. The park was named after Edward K. Warren, an inventor who discovered a way to use turkey feathers as a stiffener for dresses and corsets in the late 1800’s.

The park includes 2.5 miles of shoreline with a large swimming beach, critical dunes and a dedicated Natural Area. Recreational opportunities including modern and rustic camping, hiking, swimming, picnicking, cross country skiing, wildlife viewing and hunting.

The General Management Plan (GMP) guides the future long-term management of Warren Dunes State Park and is based on the mission of the Parks & Recreation Division (PRD): “to acquire, protect and preserve the natural and cultural features of Michigan’s unique resources, and to provide access to land and water public recreation and education opportunities”.

1.1 Planning Objectives

The objective of the GMP is to bring together Parks and Recreation Division staff, representatives from other DNR divisions, stakeholders and the public into a planning process that directs management decisions and implementation strategies for the park.

The Phase 1 GMP for Warren Dunes State Park, approved in March 2010, presents a 20-year management zone plan and defines the purpose and significance of the park. This phase 2 plan builds upon the previous planning step and identifies 10-year action goals to be accomplished in the park as a whole and in each of the management zones. These are implementation items for park staff and partners, addressing infrastructure and park management and operations that impact the resource protection and visitor experience at the park.



1.2 Plan Process Overview

The Warren Dunes State Park planning team met periodically over a ten month period, beginning in February 2018. For this phase 2 plan, the first step was to review the Phase 1 GMP to assure that no conditions have changed that would result in the need to amend the overall guiding document. The planning team completed the required 5-year review of the Phase 1 GMP and determined that no changes were needed. However, some corrections to the maps were made to address errors in the phase 1 plan and boundary changes since the plan was approved.

Stakeholder and public input was sought throughout the planning process to ensure the DNR is responsive to its partners and visitors. Stakeholders were invited to provide input early in the planning process through a workshop designed to identify strengths, weaknesses, opportunities and threats at Warren Dunes State Park. An on-site survey conducted by Michigan State University (MSU) in the summer and fall of 2017 also provided user insight to the park. The planning team used this information to guide the development of the draft phase 2 plan. The public was invited to comment at a Public Input Meeting to review the draft plan. The draft plan was also available on-line and comments were accepted via Email. The planning team reviewed all of the comments received before recommending the final plan for adoption.

1.3 Planning Team

This Phase 2 General Management Plan was developed with valuable input and expertise of the planning team.

NAME	TITLE	DIVISION
Andrew Montgomery	Unit Manager	Parks and Recreation Division
Debbie Jensen	Management Plan Administrator	Parks and Recreation Division
Matt Lincoln	Lands Program Manager/Plan Administrator	Parks and Recreation Division
Glenn Palmgren	Stewardship Ecologist	Parks and Recreation Division
Gary Jones	District Supervisor	Parks and Recreation Division
Joe Strach	Regional Field Planner	Parks and Recreation Division
Jill Sell	Trails Specialist	Parks and Recreation Division
Brian Gunderman	Southern Lake Michigan Unit Supervisor	Fisheries Division
Zach Bauer	Conservation Officer	Law Enforcement Division
Ken Kesson	Wildlife Biologist	Wildlife Division
Scott Jones	Planning Specialist	Forest Resources Division
Peter Rose	Geologist	Minerals Management

1.4 Stakeholder and Public Input Overview

An on-site survey was conducted by Michigan State University (MSU) between June and November, 2017. This survey provided representative sampling of park visitors to ascertain visitor demographics, park experience and suggested changes/things not to change. Of the questionnaires distributed to a sample of those visitors who arrived by vehicle, 155 were completed and returned by respondents. Data analysis showed that the average amount of time a day visitor vehicle was in the park was 5.3 hours and the day visitor party averaged 3.4 people per vehicle. Many visitors from out-of-state contributed significantly to local spending in the region. The three most common activities at the park were camping, swimming and sunbathing. Visitors were generally very satisfied with their visit, with 94% of respondents giving the park a favorable level of satisfaction. The most common change respondents would like to see is updated restrooms at the day-use beach, followed by improved roads. The full On-site Use and User Study Report is provided in Appendix C.

A Stakeholder Workshop was held on May 2, 2018 at the Lake Township Hall in Bridgman, Michigan. A total of 35 invitations were sent to organizations associated with, or that have an interest in, Warren Dunes State Park. Participants were invited to provide their input, identifying strengths, weaknesses, opportunities and threats related to the park. A total of 15 participants represented organizations from around the region. A summary of the input received is provided below: a full report of the meeting is provided in Appendix B.

Strengths identified by stakeholder representatives in attendance include operations items such as the public-address warning system in place, park staff, stewardship efforts at the park, and improved traffic control in recent years. Location was cited as a strength, attracting out-of-state visitors, providing year-round access, local economic impact, community support and diversity of users. Natural resources, including wooded dunes, meadows, birds and Lake Michigan, were also identified. Recreation opportunities identified were camping, cross-country skiing, dune climbing, extreme running, dark sky viewing and kayaking.

Weaknesses of the park identified by stakeholders in attendance include: dated and worn-out infrastructure, lack of trail connection to local communities, lack of interpretive kiosk or center, lack of Americans with Disabilities Act (ADA) access to the water, traffic during busy days, lack of Spanish speaking staff, dogs off leash, trash after busy weekends and lack of community outreach.

Opportunities identified include recreation improvements such as more food options, interpretation of park history, mobi-mat to the beach for access, dog-friendly beach, non-motorized trail to local communities and meteor viewing after midnight. Outreach and communication opportunities include partnerships with Weko Beach, establishment of a friends group, local bus system coordination on the weekends, and cross-promotion with local partners and environmental education.

Threats identified by stakeholders included overuse, lack of education or mis-use of the park, funding, political will, fire, climate change, erosion, invasive species, e-coli and lake levels.

A letter was sent to fourteen tribes from Michigan in March 2018 which gave each tribe a chance to provide comment on the draft plan and the park. No comments were received.

A public input open house was held on November 28, 2018 at Lake Township Hall to review the draft plan. A press release was distributed to 13,623 recipients, as well as 35 stakeholders in advance of the meeting. Attendees included representatives from the Southwest Michigan Land Conservancy, Chikaming Township, Berrien County and members of the general public. Comments received were in line with the 10-year action goals established in the plan which included partnering with volunteer organizations, establishing a friends group, upgrading restroom facilities and improving entrance circulation. In response to the input received at the public open house, language in several goals was changed to provide clarification. This included descriptions of trail locations in the park. Goals were also added to address the lack of lights for the entrance sign and to address new trail wayfinding signs.

2) Overview of Phase 1 Plan

The Phase 1 GMP for Warren Dunes State Park was completed in March 2010. The following information includes a summary of each significance statement and management zones for the park, which were defined in the Phase 1 GMP.

2.1 Significance Statements

Warren Dunes State Park was determined to be significant for the following reasons. These statements contain minor corrections made by the phase 2 planning team without changing the original meaning or intent.

- Warren Dunes State Park offers the public 2.5 miles of Lake Michigan shoreline along with a variety of outdoor recreational activities.
- Warren Dunes State Park attracts nearly 1 million visitors annually. Revenues from this park are a significant resource for the State of Michigan park system.
- Warren Dunes State Park is a gateway to the State of Michigan park system from the west. Approximately 92% of visitors come from outside the state, most of those from Indiana and Illinois.
- Most of Warren Dunes State Park lies within a designated critical dune area.
- A significant portion of the park is a dedicated Natural Area and includes both active and stabilized dunes, part of a complicated mosaic of sand dunes from former lake levels.
- Warren Dunes State Park currently supports an extensive network of richly forested dunes, large open dunes, and interdunal wetlands.

- There are important natural communities found in the park, including elements of many forest types.
- As a stopover location on a bird migration route, Warren Dunes State Park features significant bird diversity.
- Warren Dunes State Park offers unique recreational opportunities for people of all ages.

In addition to the significance statements above, the planning team recognized kayaking and paddle sports as a significant recreation activity that was introduced to the park since the Phase 1 GMP.

2.2 Management Zones

Considering the identity and significance of Warren Dunes State Park, management zones have been assigned to each area of the park. From a palette of nine standard zones, five were applied to Warren Dunes State Park. A condensed review of the management zones follows. A thorough description of each management zone can be found in the Phase 1 GMP.

- Primitive Zone reflects a desired condition that emphasizes the natural resources. About 1,013 acres, or 70% of Warren Dunes State Park, including most of the designated Critical Dunes area, is designated as Primitive Zone and will be managed to only allow dispersed and low frequency use for low impact recreational purposes (foot traffic only).
- Natural Resource Recreation Zone permits active recreation with moderate to high density of use conducted in a natural setting. The Natural Resource Recreation Zone comprises approximately 43 acres (3%) of Warren Dunes State Park, recognizing the unique opportunities for a higher intensity of use while maintaining natural resources.
- Scenic Overlay recognizes that there are aesthetic qualities to be preserved and protected in the Park. While there are many, those identified during the planning process, and noted on the management zone plan, are along the 2.5 miles of Lake Michigan shoreline and at Mt. Randall, comprising 220 acres, or 15% of the park.
- Developed Recreation Zone allows 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. The Developed Recreation Zone includes the campground areas, the beach and parking lots and heavily used southern dune area surrounding Mt. Randall, comprising 334 acres or 23% of the park.
- Visitor Services Zone encompasses the developed areas required for program administration and operations, about 49 acres or 4% of the park area. Typically, it will include offices, contact stations, maintenance facilities and all related land base required to conduct the business of

running a state park or recreation area. The current administrative offices for the park are in the Visitor Services Zone.

Upon reviewing the Phase 1 GMP, the planning team considered Resolution No. 12-2009-04 from the Citizens Committee for Michigan State Parks (CCMSP) which was contingent upon the northern two Developed Recreation Zones in the park to be changed to Natural Resource Recreation. The Phase 1 GMP was later signed and approved by the DNR Director without this change being made. The team recommended revising the zoning map that follows to reflect this change, which removes 30 acres from the Developed Recreation Zone and adds 30 acres to the Natural Resource Recreation Zone.

In addition, 3.2 acres of land located at the north end of the park with frontage on Lake Street was acquired in 2015. The planning team determined this land to be consistent with the surrounding zoning and recommends that this additional land be zoned Primitive.



2.3 Changes Since Phase 1 Plan

Management

Warren Dunes State Park is also responsible for the management of 14 boating access sites throughout the region. These sites offer developed and undeveloped water access to area rivers and lakes.

Land Acquisition

3.2 acres of land was acquired in 2015 with a Michigan Natural Resources Trust Fund grant. The land is located on the north end of the park on Lake Street and is recommended to be managed as part of the adjacent Primitive Zone.

Developments and Management Changes

The following projects and management changes have been completed since the Phase 1 General Management Plan was approved:

- 2009 - New campground toilet/shower buildings, electric, water and road pavement
- 2010 - New Painterville Creek Bridge
- 2010 - Dog Beach officially designated
- 2012 - Oak Wilt identified in the park
- 2014 - Entrance was reconfigured to allow for 3 lanes of traffic
- 2015 - Contact stations were renovated
- 2016 - New beach toilet building, ranger station and gift shop including new ADA parking spaces and vendor pads

Boundary

Since the Phase 1 GMP, the park boundary has changed with the addition of 3.2 acres on the north end of the park. In addition, corrections were made to the park boundary when reviewing parcel legal descriptions. The most significant change from the phase 1 GMP is the addition of land on the east side of Red Arrow Highway. The team recommended disposal of this land as it has no significant natural resource or recreation value to the park.

The park's 2004 Project Boundary approved by the Natural Resource Commission (NRC) includes land owned primarily by private residential owners surrounding the park. A Project Boundary is a geographic area in which the DNR is seeking to acquire property that supports the mission of the DNR on a willing buyer/willing seller Basis. The planning team evaluated land within the 2004 Project Boundary to determine whether it still possessed both natural resource and recreational value, and would complement existing land within Warren Dunes State Park. The planning team recommended no changes to the 2004 project boundary other than minor changes due to the corrections made to the existing park boundary.

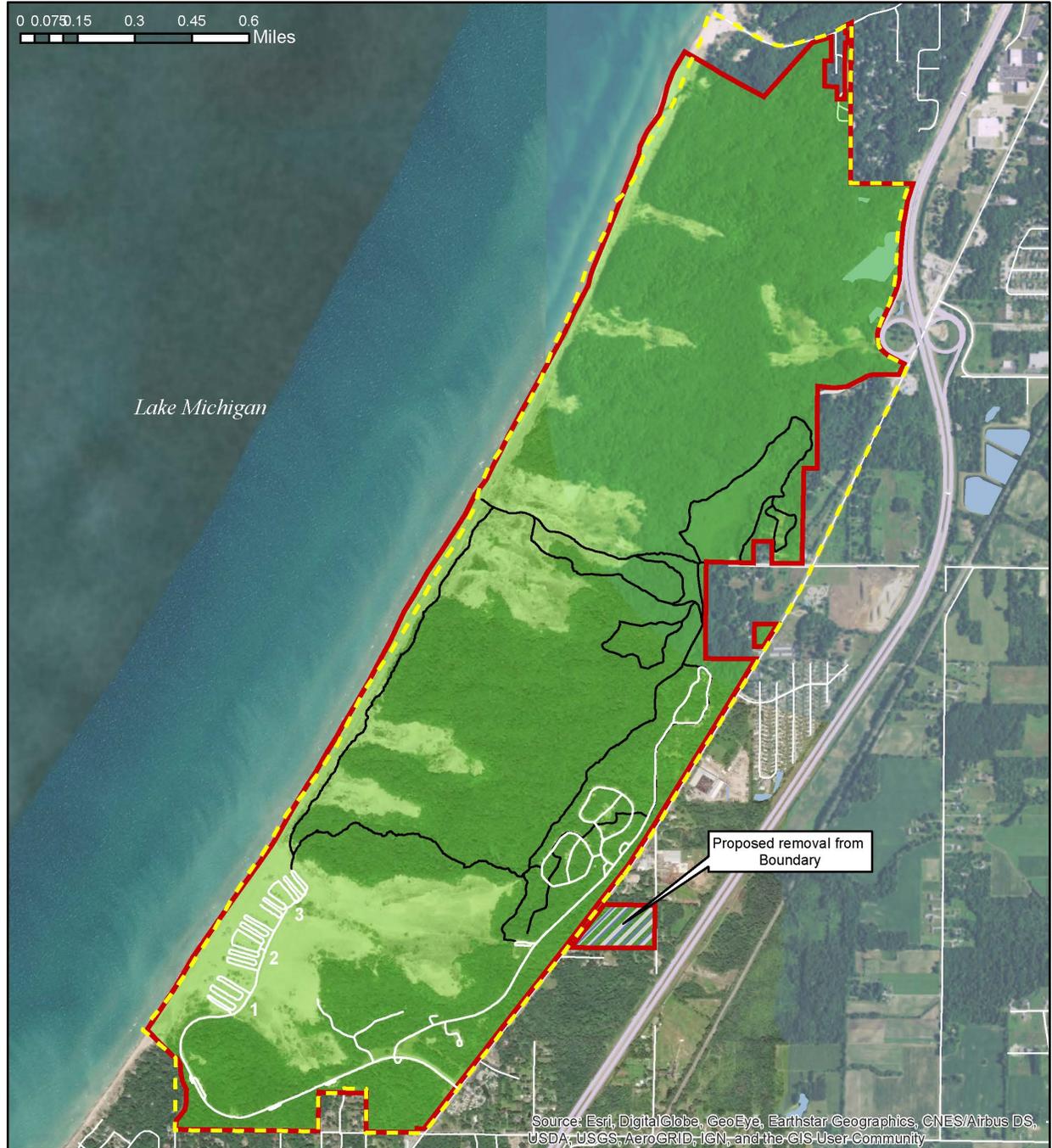
Both park boundary and project boundary revisions are illustrated on the map that follows.

Legend

-  Warren Dunes SP Boundary
-  2004 Project Boundary*, Approved by the NRC
-  Trails
-  State Land Ownership
-  Proposed Changes to Project Boundary
-  County Paved Roads
-  Highway
-  Paved Roads

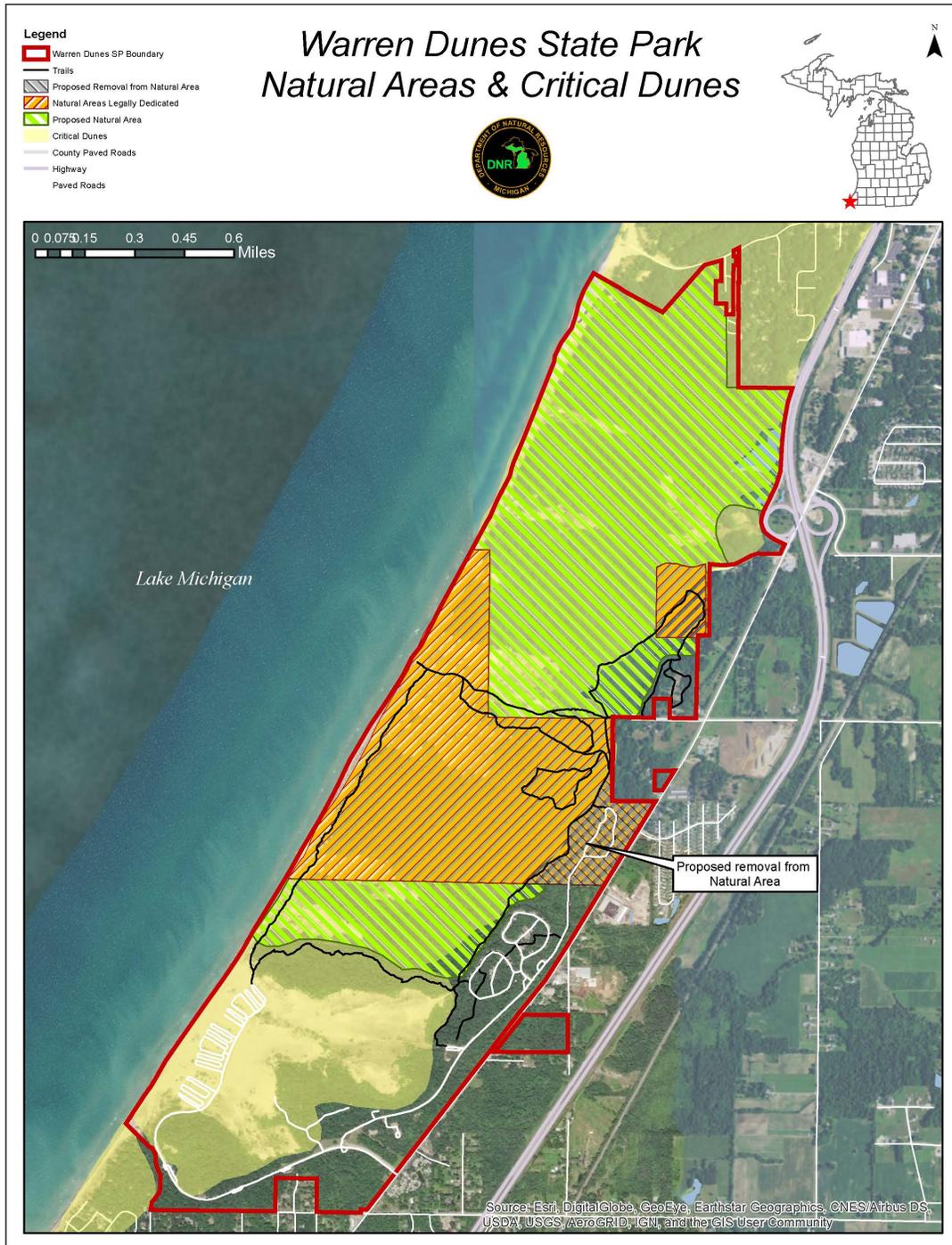
*A project boundary is a geographic area in which the DNR is seeking to acquire property that supports the mission of the DNR on a willing seller/willing buyer basis.

Warren Dunes State Park Project Boundaries



Natural Area:

The Phase 1 GMP recommended expansion of the dedicated Natural Area within Warren Dunes State Park as shown on the map that follows. In addition, the existing dedicated Natural Area includes the rustic campground loop which is inconsistent with the management practices of a Natural Area. A 10-year action goal within this plan recommends removing the Natural Area dedication from the existing rustic campground loop and expanding the Natural Area as shown in the map that follows.



Visitor Use:

Since the inception of the Recreation Passport and improved marketing, visitor use has increased. Day use visitor numbers have nearly doubled from 316,941 in 2014 to 604,916 in 2017. Camping nights have increased from 17,265 in 2014 to 19,849 in 2017.

Stewardship Volunteer Participation:

Warren Dunes State Park is the most active park in the Volunteer Stewardship Program. This committed core began in 2005 and logged 86 workdays in 2018. Through these workdays, the DNR has engaged 656 volunteer interactions totaling 1,449 service hours. In addition, 265 hours were logged outside of scheduled workdays. Many of these volunteers come from the Boy Scouts of America, local school districts and even universities, with some coming from out of state. Volunteers are trained by DNR stewardship staff in controlling invasive species, native tree planting and habitat mapping.

2.4 Supporting Documentation Updates

Threatened and Endangered Species

The following is the list of Threatened and Endangered Species found at the park according to a survey performed by the Michigan Natural Features Inventory.

Rare animals:

Prairie warbler (<i>Setophaga discolor</i>)	State Endangered
Dune cutworm (<i>Euxoa aurulenta</i>)	State Special Concern
Eastern box turtle (<i>Terrapene carolina carolina</i>)	State Special Concern
Pinetree cricket (<i>Oecanthus pini</i>)	State Special Concern

Rare plants:

Pitcher’s thistle (<i>Cirsium pitcheri</i>)	Federal Threatened and State Threatened
Bladderwort (<i>Utricularia subulata</i>)	State Threatened
Frost grape (<i>Vitis vulpina</i>)	State Threatened
Ginseng (<i>Panax quinquefolius</i>)	State Threatened
Panicled hawkweed (<i>Hieracium paniculatum</i>)	State Threatened
Red mulberry (<i>Morus rubra</i>)	State Threatened
Showy orchis (<i>Galearis spectabilis</i>)	State Threatened
Watermeal (<i>Wolffia brasiliensis</i>)	State Threatened
Climbing fumitory (<i>Adlumia fungosa</i>)	State Special Concern
Prairie trillium (<i>Trillium recurvatum</i>)	State Special Concern

Exemplary quality natural communities:

Interdunal Wetland
Mesic Southern Forest
Open Dunes
Sand and Gravel Beach

Legal Mandates

Legal Mandates have been updated and are included in Appendix A of this plan for reference.

Funding Sources

An updated funding source map has been produced for the park, depicting the funding sources used to purchase property for the park, including the most recent acquisitions.

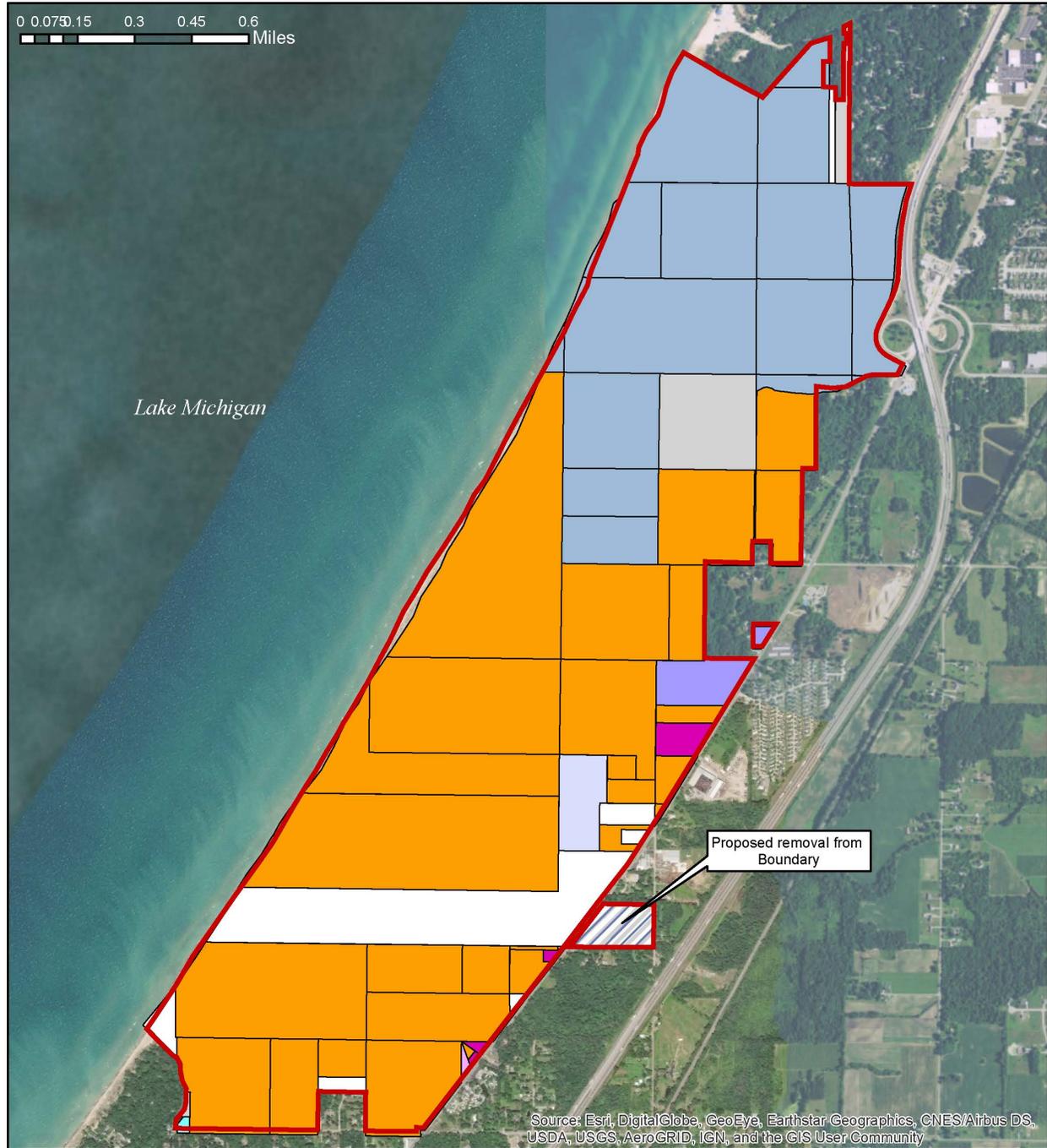
Legend

-  Warren Dunes SP Boundary
-  Proposed Changes to Project Boundary
-  Other Funds
-  Federal Land and Water Conservation Fund
-  Gift
-  Mich Natural Resources Trust Fund
-  Michigan Land Trust Fund
-  No Data
-  Pittman/Robertson Fund
-  Special Legislation
-  State Game Fund

Warren Dunes State Park Funding Sources



0 0.075 0.15 0.3 0.45 0.6
Miles



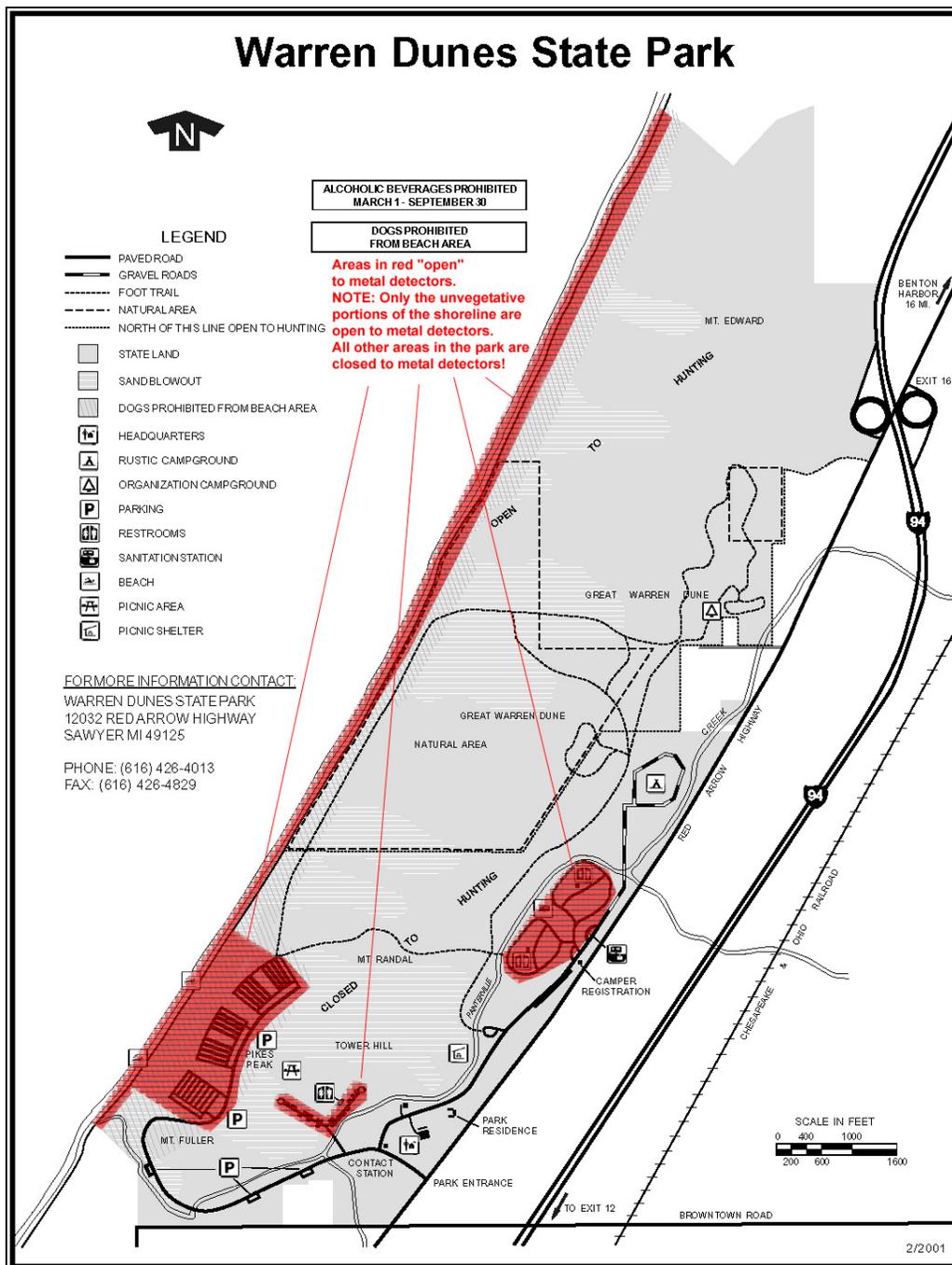
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Minerals

100% of mineral rights are owned by the State of Michigan for Warren Dunes State Park except for a small parcel under 1 acre located in the southwest corner of the park.

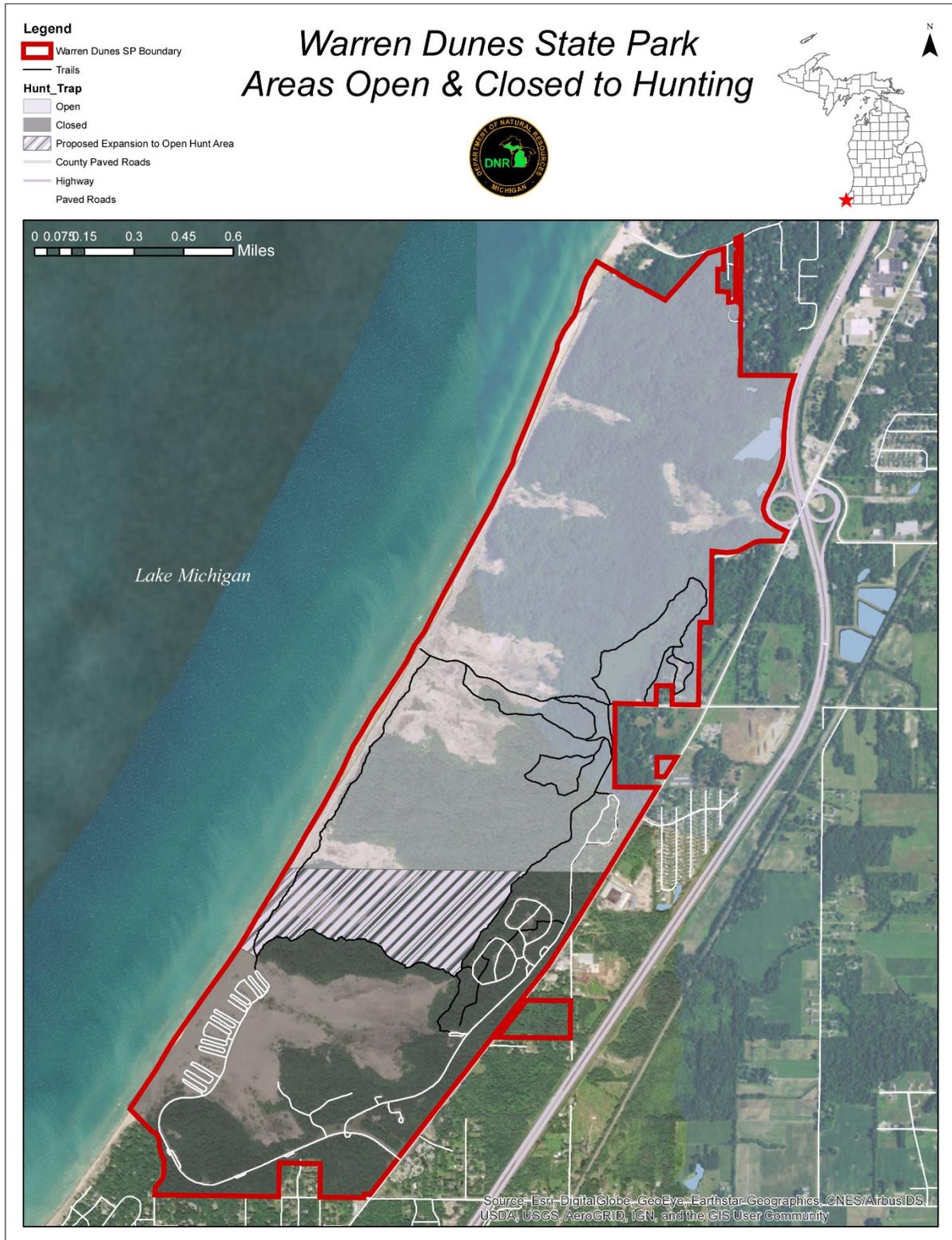
Metal Detecting

A metal detecting map has been included in this document, depicting the areas open to metal detecting at Warren Dunes State Park.



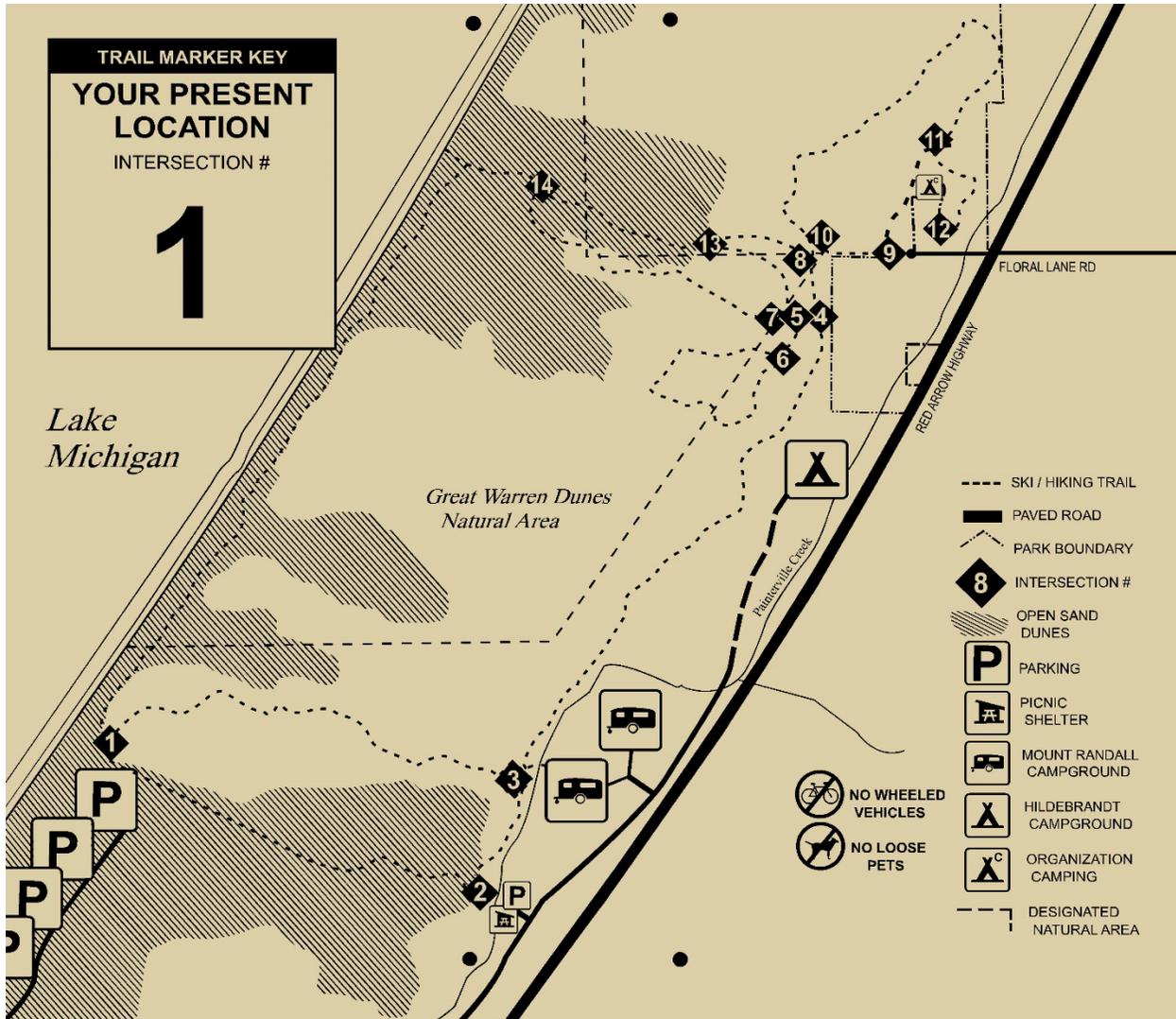
Hunting

A hunting map has been included in this document, depicting the areas currently open to hunting at Warren Dunes State Park and the proposed expansion to better manage this area in the park.



Trails

Since the Phase 1 Plan was approved, names of trails within the park were changed to a number system to align with current trail wayfinding standards.



3) 10–Year Action Goals

The Action Goals proposed for Warren Dunes State Park were developed by the planning team in response to stakeholder and public input and in context with the core values and guiding resources discussed in phase 1 of this plan. Priorities identified in this plan include restroom replacement and renovation, and improvements to the park roads, accessibility, trails and interpretation. Working collaboratively with Lake Township and other regional partners is also a priority, supported by the recommendations of all of the major planning efforts guiding recreation in Michigan, including the Michigan Statewide Comprehensive Outdoor Recreation Plan (SCORP), the Blue Ribbon Panel Report to Governor Snyder and the Michigan Comprehensive Trail Plan. The Governor’s Economic Prosperity initiative is another illustration of the importance of planning regionally. Warren Dunes State Park is located in Economic Prosperity Region #4. Other improvements proposed will continue to maintain and improve the recreation opportunities available at Warren Dunes State Park while protecting the natural and cultural resources of the park.

The planning team has developed 10-Year Action Goals that it believes are necessary to guide management and development within the four designated management zones and one overlay zone in order to achieve the desired user experience. Action goals are categorized under two types: Management and Operations and as Infrastructure and Development, which is further broken down to small projects and capital outlay projects. These categories align with the PRD Strategic Plan as well as the annual Capital Outlay funding process. Action goals are recommended to address the following categories:

- Natural Resources
- Historic/Cultural Resources
- Recreation Opportunities
- Education/Interpretation Opportunities
- Management Focus
- Development

Management plans are based on known needs, funding realities and sound investment policies, but do not guarantee future PRD funding to achieve the actions identified. PRD will seek internal funding, alternative funding sources, partnerships and other potential mechanisms for implementing the desired future conditions defined in this plan. On an annual basis, PRD districts determine priorities for project planning and project capital outlay. Each district’s top projects are then evaluated at a state-wide level for available funds.

The following 10-year action goals are ranked in terms of priority based on health, safety, and welfare, as well as ease of implementation (cost, ability to implement with own staff, partnerships etc.). Priority Level 1 projects indicate those that should be addressed within the next 2 years. Priority Level 2 projects include those that should be addressed within 2-5 years. Priority Level 3 projects are desired, but can be tackled in the next 5-10 years, once funding has been identified. The Program Input From column identifies the team members for each goal with the team leader identified in bold.

MANAGEMENT & OPERATIONS			
Action Goals	Priority	Management Zone	Program Input From
Implement invasive species control, with a strong emphasis on early detection and rapid response. Monitor roads, trails, and any new development sites for possible invasive species introductions.	Ongoing	All	Stewardship Park Supervisor Fisheries
Continue to complete and comply with annual safety inspections and plans	Ongoing	All	Park Supervisor
Continue to train volunteers for stewardship projects in the park	Ongoing	All	Stewardship Park Supervisor Local Partners
Maintain and enhance natural resource-based recreation opportunities (e.g. hunting/gathering/trapping/birding)	Ongoing	All	Park Supervisor Stewardship Wildlife
Continue monitoring archaeological and cultural resources	Ongoing	All	Park Supervisor Stewardship State Archaeologist
Review all proposed earthwork activities for potential impact on historic/cultural resources	Ongoing	All	Stewardship Regional Planner
Review and update Wildfire Plan and Emergency Plan	Ongoing	All	Park Supervisor Stewardship Forest Resources
Continue park programs geared towards kids (storytelling, hikes, roving)	Ongoing	All	Park Supervisor MOD
Explore acquisition of property within proposed General Management Plan project boundary	Ongoing	All	Park Supervisor Lands Specialist
Cross-promote and strengthen partnerships with local parks/preserves, publications, brochures and visitors guides, incorporating bilingual language into publications.	Ongoing	All	Park Supervisor MOD Local Partners
Improve communication and engagement with local community to strengthen partnerships and resolve community issues	Ongoing	All	Park Supervisor Local Partners

MANAGEMENT AND OPERATIONS Cont'd			
Action Goals	Priority	Management Zone	Program Input From
Implement an online system for selling non-resident passes to improve traffic flow at the park entrance	1	All	MOD Park Supervisor
Complete a Natural Resources Stewardship Plan for the park, identifying targets for conservation and related natural resource management strategies	1	All	Stewardship Park Supervisor
Expand opportunities for citizen science in the park by identifying desired research and data collection (e-birding, wildflowers, etc.)	1	All	Stewardship Park Supervisor
Extend dark sky viewing hours for special events hosted by park interpreters	1	All	Park Supervisor District Supervisor
Dispose of land east of Red Arrow Highway	1	All	Lands Specialist
Work with the City of Bridgman to resolve any issues between Weko Beach and Warren Dunes State Park	1	Primitive	Park Supervisor Regulatory Unit City of Bridgman
Form partnerships with rental lodging businesses to provide recreation passports for rental lodging guests	1	All	Park Supervisor
Explore the feasibility of opening beach parking lot #3 for limited camping use during non-peak seasons	1	All	Park Supervisor District Supervisor
Develop an interpretive plan for the park identifying topics and methodology	2	All	Park Supervisor MOD Stewardship
Research FAA regulations and establish a policy for motorized backpacks and paragliding in the park	2	All	Regulatory Unit
Work towards establishing a Friends Group for the park	2	All	Park Supervisor
Follow the legislative process and expand Natural Area as shown on the map and remove dedicated Natural Area designation from Hidebrandt Campground using the western boundary of the nearby trail	3	Developed Primitive	Stewardship Regulatory Unit
Expand area open to hunting south to existing trail as shown on the map, updating the Wildlife Conservation Order and defining the hunting zone boundary on the ground	3	All	Park Supervisor Stewardship Regulatory Unit

INFRASTRUCTURE & DEVELOPMENT: CAPITAL OUTLAY			
Action Goals	Priority	Management Zone	Program Input From
Complete design in partnership with MDOT for parking lot and road renovation	1	Developed Natural Resource	Field Planner MDOT Park Supervisor
Renovate and re-pave parking lot and main park road	1	Developed Natural Resource	Field Planner Park Supervisor
Replace beach restroom building #1 and add bus parking as part of the project per the existing beach infrastructure plan	1	Developed	Field Planner Park Supervisor
Renovate or replace beach restroom building #3 and include rinse-off showers, dog fountain and interpretive shelter/kiosk per the existing beach infrastructure plan	1	Developed	Field Planner Park Supervisor
Explore changes to the existing campground entrance drive to improve traffic circulation including the exploration of a separate campground entrance drive	1	Developed	Field Planner Park Supervisor Road Department
Develop play opportunities at the beach	2	Developed	Field Planner Park Supervisor Local Partners
Support local community efforts to connect to the park with a non-motorized trail along Red Arrow Highway and to the Warren Dunes beach, via the park entrance road corridor	3	Developed Natural Resource	Park Supervisor Trail Specialist Field Planner Local Partners

MDOT = Michigan Department of Transportation
MOD = Marketing and Outreach Division
FAA = Federal Aviation Administration

INFRASTRUCTURE & DEVELOPMENT: SMALL PROJECTS			
Action Goals	Priority	Management Zone	Program Input From
Explore improvements to park entrance and operations to improve traffic flow and safety, working with MDOT, the Road Department and operations staff	1	All	Field Planner Park Supervisor Road Department Productivity Analyst
Install a light to illuminate the park entrance sign	1	Developed	Park Supervisor
Assess user-created trails to determine any potential changes to the designated trail network	1	All	Park Supervisor Field Planner Stewardship
Install mobi-mats to beach #2 per the existing beach infrastructure plan	1	Developed	Park Supervisor District Supervisor
Install new trail signs to improve user navigation, incorporating bilingual language	1	All	Park Supervisor Trail Specialist
Continue to reclaim the former church camp site to improve park safety	2	Primitive	Park Supervisor Stewardship
Interpret church camp water tower at beach	2	Developed	Park Supervisor MOD
Remove fence along Red Arrow Highway in coordination with proposed multi-use trail	3	All	Park Supervisor Field Planner District Supervisor

4) Implementation Strategy

This chapter of the general management plan (GMP) provides guidance for implementation of the action goals and maintaining the plan so it remains relevant in the long term. These guidelines will also help the park align the action goals with park, district and statewide annual funding processes and annual tasks outlined in the Parks and Recreation Division's Strategic Plan or other planning documents. Although the implementation of the GMP will require commitment from staff at every level, it will be the primary responsibility of the Unit Supervisor/Manager to oversee plan implementation.

A long-range plan such as this must maintain a degree of flexibility in order to be responsive to changing circumstances or opportunities that cannot be foreseen. It is recognized that some goals may be accomplished in a short time frame, while others may carry over through multiple years. It will be important to track progress so that the plan remains a relevant park management tool. The GMP will be reviewed every five years to ensure it remains viable.

4.1 Implementation Toolbox

The following is a list of items to consider when reviewing and prioritizing the implementation of action goals identified in the GMP.

Coordination/ Communication

- Meet regularly with the Regional Field Planner and District Supervisor to coordinate and prioritize large capital projects for capital outlay requests.
- Maintain an open dialogue with local partners and stakeholders to coordinate community-related projects as identified in the action goals.
- Follow-up regularly on progress for action goals that are not the primary responsibility of the Unit Supervisor/Manager with the responsible program position.

Funding

- Identify estimated cost for each capital improvement/infrastructure project, with assistance from Regional Field Planner or other planning and infrastructure section staff as needed.
- Identify potential funding sources for each project/task. Liaise with PRD grants coordinator as appropriate.
- Align potential funding sources with the annual "call for projects" in July for capital outlay funding requests.
- Review action goals list and determine which projects can be requested to receive District Small Project funding through the District Supervisor.

Scheduling

- Further prioritize projects based on need, funding, staffing and other constraints and opportunities.
- Incorporate project/task assignments into annual staff performance objectives

4.2 Documentation of Changes

The Unit Supervisor/Manager should keep a record of any major changes to the park since approval of the GMP and note potential updates that may be required in the future. Documenting these changes will assist in the 5-year plan review or when the GMP is updated. Changes may include:

- New user requests or conflicts
- Emerging recreation, funding or partnership opportunities
- Changes in land management
- Land transactions or changes to the Approved Project Boundary
- Major infrastructure projects or removal of structures

Changes may be documented by marking up the park's copy of the GMP or maintaining a log that is kept with the GMP. In reviewing the action goals for changes, document goals that may become irrelevant or are no longer viable, as well as proposed new action goals, including justification.

The management zoning map should also be reviewed regularly. Any proposed changes to the map related to land acquisition or disposal, errors in the original zoning, or land management changes should be documented. Note that the park zoning is intended to be a long-term document: changes will only be considered with adequate justification and are subject to a formal review and approval process.

4.3 Documentation of Accomplishments

As action goals are completed, the Unit Supervisor/Manager should mark them as such in the park's copy of the GMP, including the completion date. This will also help to maintain a log of accomplishments for district and division-wide reporting purposes, including PRD's strategic plan.

4.4 Five-year Review Process

General management plans are reviewed every five years from the date of approval of either the phase 2 plan or the complete GMP. The planning team for the 5-year review is made up of the Park Management Plan Administrator, Unit Supervisor/Manager, Regional Field Planner and District Supervisor, with other team members included as may be necessary. A 5-Year Review Form will be used to record all changes to the plan within the past 5 years. Upon reviewing the GMP and the documented changes, the planning team will determine whether the changes warrant a complete update of the plan.

If there are no major changes required in either the zoning or the action goals, the planning team will complete the 5-Year Review Form and attach it as a supplement to the existing GMP. If zoning changes are needed, the GMP will be revised or updated following the established planning process led by the Park Management Plan Administrator. If changes to the action goals only are required, the phase 2 GMP planning process will be implemented.

APPENDIX A – LEGAL MANDATES UPDATE

Legal mandates are identified that serve to further guide the development of the Phase 2 General Management Plan. For our planning purposes, the term “Legal Mandates” refers not only to federal and state law, but also the administrative tools of “Policy” and “Directive” of the Natural Resource Commission, the Department of Natural Resources (DNR), and the Parks and Recreation Division. Examples include Orders of the Director, Parks and Recreation Areas State Land Rules and other laws, commission orders, and rules of directives that apply to the recreation area.

Legal mandates applicable to Warren Dunes State Park were identified for the Phase 1 General Management Plan. The legal mandates listed in Appendix A of the Phase 2 General Management Plan provide a supplement to the legal mandates previously identified in the Phase 1 General Management Plan and should be referred to concurrently.

FEDERAL STATUTE

ENDANGERED SPECIES ACT, 1973
The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the act.
BALD AND GOLDEN EAGLE PROTECTION ACT, 1940 AND AMENDMENTS
This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." "Disturb" includes actions that may result in injury to the eagle, a decrease in its productivity or nest abandonment.
NATIONAL HISTORIC PRESERVATION ACT, 1966 AS AMENDED
This is the primary federal law governing the preservation of cultural and historic resources in the United States. The law establishes a national preservation program and a system of procedural protections which encourage the identification and protection of cultural and historic resources of national, state, tribal and local significance.

STATE STATUTE

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (NREPA) AND AMENDMENTS	
PA 451 of 1994, Part 5	Gives the DNR authority to make rules to support its mission. This includes State Land Rules, Land Use Orders, Wildlife Conservation Orders, Fisheries Orders and Watercraft Control.
PA 451 of 1994, Part 31 Water Resources Protection	Provides authority to DEQ to require a permit for any occupation, construction, filling, or grade change within the 100-year floodplain of a river, stream, drain, or inland lake.
PA 451 of 1994, Part 303 Wetlands Protection	Requires a permit from the state (DEQ) to undertake certain activities in regulated wetlands, such as, dredging, fill, construction or drainage.
PA 451 of 1994, Part 325 Great Lakes Submerged Bottomlands	A permit is required for all filling, dredging, and placement of permanent structures (i.e., docks, piers, pilings, etc.) below the "ordinary high water mark" and on all upland channels extending landward of the "ordinary high water mark" of the Great Lakes.
PA 451 of 1994, Part 419 Hunting Area Control	Section 324.41901 establishes the powers of the Department to establish safety zones for hunting. Refer to hunting map for the park.
PA 35 of 2010, Part 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.
PA 451 of 1994, Part 761 Aboriginal Records and Antiquities	The state reserves the exclusive right and privilege to all aboriginal records and other antiquities including those found on the bottomlands of the Great Lakes.

PUBLIC HEALTH CODE	
PA 368 of 1978, Part 125, Campgrounds, Swimming Areas and Swimmers' Itch	Established to protect and promote the public health by establishing health code requirements and regulations that all public (including DNR) and private campgrounds must meet. Includes permitting, licensing, inspections and rules regarding sanitation, safety standards and public health. Also covers testing and evaluating quality of water at bathing beaches, safety and rescue equipment.

LAND USE ORDERS

5.2 Possession or consumption of alcoholic beverages in certain state parks and recreation areas, prohibited conduct.

(6) Possess or consume an alcoholic beverage within the following described locations from March 1 through September 30:

- (b) Warren dunes SP - entire park.

5.8 Hang gliders in Warren dunes state park, conditions for use, permit, prohibited conduct.

Order 5.8 A person shall not possess or fly a hang glider in Warren dunes SP except under the following conditions:

- (1) A person desiring to hang glide must possess a valid United States hang gliding association (USHGA) proficiency rating card and a Warren dunes SP hang glider permit, except for students under the instruction and direct supervision of a USHGA certified instructor. The established fee for the permit shall be paid.
- (2) USHGA certified instructors may utilize the area for student instructions only after they have obtained a Warren dunes SP instructor permit and paid the established fee. Instruction shall be in the designated instruction zone only.
- (3) Persons hang gliding shall have in possession and produce upon demand of the park staff, personal identification, USHGA rating card, and a valid department permit.
- (4) Hang gliding will be permitted only in designated zones and hang gliding proficiency will determine allowable zone. It is unlawful to launch from a zone with a higher rating than the pilot has attained.
- (5) All pilots shall wear safety helmets while flying.
- (6) All accidents resulting in injury or property damages shall be reported to park staff.
- (7) No motorized hang gliding will be permitted in the park.
- (8) No competitive or spectator events will be allowed without prior written permission.
- (9) The park manager may close the park to hang gliding for the day, or portions thereof, if in the opinion of the park manager weather conditions, conflicting public use, or other circumstances develop which may cause a serious hazard to people or property.

5.16a Entry, use and occupancy of certain state parks, recreation areas and scenic sites, prohibited conduct.

Order 5.16a (1) A person shall not do any of the following:

(a) Enter any of the following state-owned lands with a motor vehicle unless a valid Michigan recreation passport has been purchased and affixed to the vehicle:

- (87) Warren Dunes SP, Berrien county.

WILDLIFE CONSERVATION ORDERS

Species Regulations

3.423 Taking crows, open seasons; exceptions.

(3) Crows shall not be taken in state parks and recreation areas from April 1 to September 14.

History: Eff. Mar 31, 1989; Am. 8, 1991, Eff. Jul 1, 1991; Am. 9, 1996, Eff. Jul 1, 1996; Am. 8, 2009, Eff. May 7, 2009.

3.424 September teal hunt; open season; areas defined.

Sec. 3.424 (1) The open season for teal shall be September 1 to September 16 statewide.

(2) All state parks shall be closed.

History: Am. 16, 1993, Eff. Sep 1, 1993; Am. 8, 2014, Eff. Jul 11, 2014; Am. 2, 2017, Eff. Mar. 10, 2017; Am. 3, 2018, Eff. Mar. 16, 2018.

3.506 Woodchucks, open season, exception; taking woodchucks doing or about to do damage, individual taking considered permittee.

Sec. 3.506 (1) The open season for woodchucks shall be statewide all year except for state park and recreation areas which shall be closed April 1 to September 14.

History: Eff. Mar 31, 1989; Am. 20, 1989, Eff. Sep 1, 1989; Am. 3, 2015, Eff. May 8, 2015.

3.604 Skunks, hunting and trapping, open season, exception; unlawful act.

Sec. 3.604 (1) The open season for taking skunk by hunting or trapping shall be statewide all year except for state park and recreation areas which shall be closed April 1 to September 14. A person shall not possess a live skunk taken in Michigan.

History: Eff. Mar 31, 1989; Am. 20, 1989, Eff. Sep 1, 1989; Am. 3, 2015, Eff. May 8, 2015.

State Parks and Recreation Areas

7.1 Hunting or trapping in state parks or game refuges; designating where permissible; permits; hunting or trapping in state recreation areas.

Sec. 7.1 (1) Except as otherwise provided in this chapter or by permit issued by the director, no person shall trap or hunt with firearms or dogs or in any other manner in any state park, state game refuge, or other lands under the control of and dedicated by the department as a game refuge or wildlife sanctuary.

(2) Except as otherwise provided in this chapter, state recreation areas shall be open to hunting and trapping during established seasons.

(3) Trapping in state recreation areas, except as otherwise provided in this chapter, shall be limited to those areas at least 50 feet outside of the mowed portions of developed picnic areas, swimming beaches, parking lots, boat launches, children's playground structures, campgrounds or headquarters' areas. A duffer-type, egg-type, or similarly designed foothold trap for raccoon may be used within the exempted area only by written permission by the designated department representative.

History: Eff. Mar 31, 1989; Am. 16, 1989, Eff. Aug 1, 1989; Am. 9, 2008 Eff. Jun 6, 2008; Am. 2, 2016, Eff. April 15, 2016.

7.37 Warren dunes state park, hunting and trapping allowed.

Sec. 7.37 Hunting and trapping shall be allowed during the established seasons on all state-owned lands of Warren dunes state park in sections 24, 25 and 26, T06S R20W.

History: Eff. Mar 31, 1989.

STATE LAND RULES

Parks and Recreation Areas – State Land Rules are issued by authority conferred on the Michigan DNR by Section 504 of 1994 PA 451 MCL 324.504. The rules cover entry, use and occupation of state lands and unlawful acts.

APPENDIX B – STAKEHOLDER AND PUBLIC INPUT SUMMARY

Over the duration of the Phase 2 General Management Planning process, the Planning Team provided a variety of opportunities for stakeholder and public input and feedback.

Stakeholder Workshop

A Strengths-Weaknesses-Opportunities-Threats (S.W.O.T.) analysis was performed on May 2, 2018 at the Lake Township Hall in Bridgman, Michigan to gather information from stakeholders about the park to inform the Action Goals. Participants were invited to provide their input, identifying Strengths, Weaknesses, Opportunities and Threats related to the park. A total of 15 participants represented organizations from around the region and provided input. The feedback received at the stakeholder meeting is summarized below:

STRENGTHS

Operations

- Public address/flag warning system
- Staff – great support
- Recreation Passport
- Stewardship efforts
- Improved traffic control from past years

Location

- Accessible year-round
- Diversity of visitors
- Out-of-state visitors
- Economic impact/tourism/second homes
- Community support – Emergency Medical Services
- Location on Lake Michigan/I-94 (accessible)

Natural Resources

- Resource for research on shifting dunes/age of dunes for local schools/colleges/botany/science classes
- Outdoor education
- Variety of ecosystems that the trails go through
- Large block of protected land for wildlife
- Lake Michigan
- Forests and meadows for birds

Recreation/Facilities

- Camping
- Cross-country skiing
- Dune climbing
- Extreme running on back trails
- Intense/dispersed use
- Kayaks and stand-up paddleboards (5 years)
- Lots of parking
- Dark sky viewing
- Boardwalks to inaccessible areas
- Birding

WEAKNESSES

Recreation/Facilities

- Dated/lacking infrastructure
- Broken infrastructure (drinking fountain)
- Lack of non-motorized trail to and from park
- Lack of interpretation center
- Trails are difficult to navigate because of confusing signage
- Worn-out infrastructure
- Chain-link fence is not welcoming
- Remains of church camp is a safety issue
- E-coli contamination in Painterville Creek
- Lack of ADA access to Lake Michigan

Operations

- Seasonal traffic control
- Trash on Sunday night
- Lack of community outreach/engagement
- Website – can't find programs
- Lack of Spanish speaking staff
- Dogs on leash not enforced (for safety and shorebirds)
- Lack of enforcement on north shore

Community/Location

- 92% out-of-state visitors/lack of local visitors
- No Friends Group

OPPORTUNITIES

Recreation/Facilities

- Interpretation of history
- More food options
- Mobi-mat for beach access
- Dog friendly beach to take pressure from local parks
- Non-motorized trail connection to park from nearby communities
- Offer meteor shower viewing after midnight

Community

- Establish a Friends Group
- Partnership with Weko Beach
- Coordinate with Berrien County Linear Park
- Strengthen partnerships/cooperation to resolve community issues
- Economic impact
- Continue to coordinate with local community bus system on weekends
- Link park needs to local publications (visitors guides)
- Establish connections to local parks/preserves

Operations/Programs

- Consider no dogs north of Tanners Creek
- Promote other destinations near the park including agri-tourism promotion
- Weekend pass to encourage vacation rentals
- Develop smart phone app/online guide (MSU Ag. Extension)
- Connect with kids
- Group training
- Environmental education
- Invasive species education

THREATS

Park Use

- Over-use
- Lack of education/mis-use
- Illegal trails
- Trespass/surrounding development

Operations

- Funding
- Firewood – invasive pests
- Political will – education for future generations

Natural Environment

- Erosion threatening paths and campground
- Fire
- Climate change
- Forest succession
- Invasive/exotic species
- Extreme weather events (emergency preparedness)
- Lake levels
- E-coli

WRITTEN COMMENTS

- Benefits of non-motorized trail connecting park to Bridgman:
 - Cater to locals using park more and appreciating it more
 - Lessen traffic issues/congestion
 - Economic impact to surrounding communities
 - Provides another activity for campers to bike to town for dinner
 - Increases partnership/collaboration between park and surrounding communities through shared maintenance/costs to develop
- I am very much in favor of coordinating a non-motorized trail from the park to Bridgman with Berrien County Parks for the enjoyment of visitors and economic impact to the community
- Opportunities include:
 - special events for the public i.e. beach front cold camping for meteor shows, etc. to develop a sense of community, meeting people, etc.
 - Bike path connections to surrounding communities (Bridgman, Sawyer, Three Oaks, New Buffalo, St. Joseph)

Name	Stakeholder Affiliation
Robert Brown Jr.	Fred Meijer RVRT
Ron Gunderson	Fred Meijer RVRT
Terri DeBarr	IFTGA Lease Manager
Laurie Perkins	Michigan History Center
Ray Fahlsing	MDNR-PRD
Matt Lincoln	MDNR-PRD

Pat Fisher	Harbor Country Hikers
Beth Helm	Berrien RESA and Flag Camp
Brad Anderson	Berrien Birding
Hanna Anderson	City of Bridgman
George Burgoyne	Southwest Michigan Land Conservancy
Bob Clark	Lake Charter Township
Janet Schrader	Harbor Country Hikers
Sandy Asmus	Berrien RESA
Joan Guilfoyle	
Casey Struecker	Chikaming Open Lands
Craig Blasko	Berrien RESA
Gary Wood	Chikaming Township
Rick Fuller	City of Bridgman
Peta Tan Louv	

Public Open House

The public was invited to an open house on November 28, 2018 at Lake Township Hall to learn about the Phase 2 General Management Planning process and comment on the Draft 10-Year Action Goals. The Draft Phase 2 Plan was also posted on the DNR’s website and comments were invited via e-mail. A total of 21 participants attended and provided input. Below is a compilation consisting of open house instructions, press release and input collected during the open house.

**DEPARTMENT OF NATURAL RESOURCES
WARREN DUNES STATE PARK
PHASE 2 GENERAL MANAGEMENT PLAN**

**Public Input Open House
November 28, 2018, 5pm to 7:00pm
Lake Township Hall**

Welcome! Please review the boards around the room and provide feedback using the instructions below. The Department of Natural Resources will use your feedback to refine the Phase 2 General Management Plan for Warren Dunes State Park. DNR staff members are available if you have any questions.

1. Please use the GREEN dots provided to indicate the 10-year action goals you feel are most important. Please use only one dot per goal.
2. If there is a goal you do not agree with, please use a RED dot and a sticky note explaining why you do not agree with it.
3. Also use sticky notes to provide any other comments on the boards.
4. You may also use the comment forms provided to provide feedback.

For More Information:

DNR Management Planning Website: www.michigan.gov/parkmanagementplans

Email: Matt Lincoln lincolnm@michigan.gov or Drew Montgomery, montgomeryA1@michigan.gov

Phone: 517-284-6111 or 269-426-4013



MICHIGAN DEPARTMENT OF

NATURAL RESOURCES

- DNR NEWS -

Nov. 13, 2018

Contact: Matt Lincoln, 517-284-6111

DNR to host open house Nov. 28 to gather input on Warren Dunes State Park management plan



The Michigan Department of Natural Resources is inviting the public to help shape future management at Warren Dunes State Park in Berrien County. The DNR will host an open house Wednesday, Nov. 28, to gather input on the park's draft phase 2 general management plan. The open house will run 5 to 7 p.m. at the Lake Township Hall, 3220 Shawnee Road in Bridgman.

The phase 2 general management plan defines a long-range (10- to 20-year) planning and management strategy that will assist the DNR in meeting its responsibilities to protect and preserve the site's natural and cultural resources, and to provide access to land- and water-based public recreation and educational opportunities.

The 1,439-acre park provides recreational activities compatible with the park's natural resources, including 2.5 miles of Lake Michigan shoreline, a large swimming beach, a critical dunes area and a dedicated natural area. Recreational opportunities include modern and rustic camping, hiking, swimming, picnicking, cross-country skiing, wildlife viewing and hunting.

People are welcome to attend at any time during the two-hour period to review components of the draft plan, provide comments and talk to DNR staff. Comments also can be made via email to lincolnm@michigan.gov through Dec. 6.

A link to the draft plan and additional information on the DNR's management planning process are available at michigan.gov/parkmanagementplans.

For more information, contact Matt Lincoln at 517-284-6111 (TTY/TDD711 Michigan Relay Center for the hearing impaired) or via email at lincolnm@michigan.gov. Anyone needing accommodations for the meeting should contact Lincoln at least five business days before the meeting.

/Note to editors: An accompanying photo is available below for download. Caption information follows.

Warren Dunes State Park (in Berrien County) is known for its expansive shoreline located along Lake Michigan./

- [WarrenDunes.JPG](#)

The Michigan Department of Natural Resources is committed to the conservation, protection, management, use and enjoyment of the state's natural and cultural resources for current and future generations. For more information, go to www.michigan.gov/dnr.



Name	Affiliation
Jason Catham	Berrien County Road Department
Bob Clark	Lake Township
George Burgoyne	Southwest Michigan Land Conservancy
David Bunte	Chikaming Township
Chad Gradowski	Chikaming Township
Steve Ellis	Deer Creek Open Space Shorewood Hills
Brad and Hannah Anderson	Public
Bill and Bonnie Wolf	Berrien County
Joan Guilfoyle	City of Bridgman
Doug Rystamp	Public
Pat and Cindi Fisher	Harbor County Hikers
Jacquie Buackuell	Drain Commision
Brian R. Bailey	Berrien County Parks
Michelle Heit	New Buffalo Township
Michael McDonald	MSPAC
Mark Vavba	Lake Township
Chuck Heit	Berrien County Sheriffs Office
Tim Rodechier	Public

Meeting attendees were asked to place green dots on action goals they considered to be the most important and red dots on those that they disagreed with. The total number of dots for each goal is illustrated below:

MANAGEMENT AND OPERATIONS		
Action Goals	Priority	Votes
Implement invasive species control, with a strong emphasis on early detection and rapid response. Monitor roads, trails, and any new development sites for possible invasive species introductions.	Ongoing	4
Continue to complete and comply with annual safety inspections and plans	Ongoing	
Continue to train volunteers for stewardship projects in the park	Ongoing	
Maintain and enhance opportunities for hunting/fishing/gathering/trapping/birding	Ongoing	3, 1
Continue monitoring archaeological and cultural resources	Ongoing	2
Review all proposed earthwork activities for potential impact on historic/cultural resources	Ongoing	
Review and update Wildfire Plan and Emergency Plan.	Ongoing	1
Continue park programs focused on kids (storytelling, hikes, roving)	Ongoing	2
Explore acquisition of property within proposed General Management Plan project boundary	Ongoing	1
Cross-promote and strengthen partnerships with local parks/preserves, publications, brochures and visitors guides.	Ongoing	3
Improve communication and engagement with local community to strengthen partnerships and resolve community issues	Ongoing	6
Implement an online system for selling non-resident passes to improve traffic flow at the park entrance	1	5
Complete a Natural Resources Stewardship Plan for the park, identifying targets for conservation and related natural resource management strategies.	1	2
Expand opportunities for citizen science in the park by identifying desired research and data collection (e-birding, wildflowers, etc.)	1	3

Extend dark sky viewing hours for special events hosted by park interpreters	1	4
Dispose of land east of Red Arrow Highway	1	
Adjust dog beach area boundaries to be from the north beach to Blue Jay Trail, following the appropriate process to ensure enforcement	1	4, 2
Form partnerships with rental lodging businesses to provide recreation passports for rental lodging guests	1	
Explore the feasibility of opening beach parking lot #3 for limited camping use during non-peak seasons	1	1
Develop an interpretive plan for the park identifying topics and methodology	2	
Research FAA regulations and establish a policy for motorized backpacks and paragliding in the park	2	1
Work towards establishing a Friends Group for the park	2	4
Follow the legislative process and expand Natural Area as shown on the map and remove dedicated Natural Area designation from Hidebrandt Campground using the western boundary of the nearby trail	3	1
Expand area open to hunting to trail as shown on the map, updating the Wildlife Conservation Order and defining the hunting zone boundary on the ground	3	3

INFRASTRUCTURE & DEVELOPMENT: CAPITAL OUTLAY		
Action Goals	Priority	Votes
Complete design in partnership with MDOT for parking lot and road renovation	1	1
Renovate and re-pave parking lot and main park road	1	2, 1
Replace beach restroom building #1 and add bus parking as part of the project per the existing beach infrastructure plan	1	
Explore the feasibility of a separate campground entrance drive from Red Arrow Highway	1	6
Develop play opportunities at the beach	3	19, 3

Support local community efforts to connect to the park with a non-motorized trail along Red Arrow Highway and to the Warren Dunes beach, parallelling the park entrance road	3	
Renovate beach restroom building #3 and include rinse-off showers, dog fountain and interpretive shelter/kiosk per the existing beach infrastructure plan	3	

INFRASTRUCTURE & DEVELOPMENT: SMALL PROJECTS		
Action Goals	Priority	Votes
Explore improvements to park entrance and operations to improve traffic flow, working with MDOT and the Road Department	1	14
Assess user-created trails to determine any potential changes to the designated trail network	1	6
Install mobi-mats to beach #2 per the existing beach infrastructure plan	1	3
Improve trail signage to align with DNR standards and local systems	2	2
Continue to reclaim the former church camp site to improve park safety	2	1
Interpret church camp water tower at beach	2	1
Remove fence along Red Arrow Highway in coordination with proposed multi-use trail	3	1

Additional Comments:

- Trail along Red Arrow (in favor of)
- Separate campers' entrance (in favor of)
- Light main sign and install park entrance signs with flashing lights to alert motorists of congestion
- Entrance lighting needs to be addressed. Cannot see at night.
- Prefer to protect our species with designated protected areas used for viewing, observation and breeding
- Make sure marked trails are navigable, not flooded, blocked, etc., especially trails off Floral Lane.
- Have an express lane for Michigan passport and pre-paid online passes.
- What are the non-resident daily and non-resident Annual Revenues?
- Dog trails are so difficult to enforce, concerned about e-coli
- Trails for American's With Disabilities Act Amigo-type transportation (in favor of)
- Use "Green Pavement" ideas for resurfacing parking lots
- Please explore a separate entrance to the campground a must
- Include use of old Hildebrandt Road bed for non-motorized trail

- Love the idea of a linear trail running along side Red Arrow Highway on the edge of the park, win-win for park visitors, community and health initiatives
- A non-motorized trail along Red Arrow Highway should not be a security issue
- Look at Harbor Country Plan for standardized trail signage
- Take the fence out, not tying it to any trail project.
- Remove fence on Red Arrow and replace it with a split rail that looks nice – priority 1!
- Allow bike trails in the park
- Allow fat tire bikes on the beach – seasonal – ok, time-of-day restriction – ok
- My dream bike path/trail from Browntown Road all the way to Weko Beach, all off-road woodland trail

Project Website

A webpage was maintained through the duration of the planning process and was updated with maps, meeting information and the draft plan. Contact information was provided for members of the public to submit comments or ask questions via e-mail. These comments are listed below.

1. *The park is beautiful, but my main complaint is that there are huge lines in summer and holidays for those trying to enter the park. Lines even extend out to the street. In planning for the future, the state needs to hire an expert in queuing theory to determine how to make it easier to enter the park. Can you please pass my suggestion on to those who are conducting the public hearing on plans for the future.*
2. *Reducing the dog beach to an area between the Blue Jay Trail to the north and the Warren Dunes swimming beach to the south makes good sense. That area is patrolled by rangers more easily and would still allow approximately a mile of beach for our four-legged friends. It would also allow the City of Bridgman to more easily enforce their ordinance that doesn't allow dogs on Weko Beach. There has been an ongoing problem with a considerable number of unleashed dogs occupying the north end of the park, sometimes bothering beach walkers and children.*
3. *I am writing this email to provide information to assist the DNR in evaluating and planning the management of Warren Dune State Park ("Park"). I live in Harbert, Michigan, just 3 miles south of the Park. I am frequent visitor to the Park. I use the park for hiking and cross-country skiing.*

I have been extremely disappointed in how the Park has been managed over the years. The trails are not maintained. Trees cover the trails for years. Last winter, many cross-country trails were inaccessible due to downed trees. The trail signage is in disrepair. Moreover, the trail signage is inadequate under current best standards. It has been that way for over 20 years. (I have lived in Harbert for 35 years.) The foot bridges over the wetter portions of the trail are pathetically in disrepair. It is a shame that a visitor's hiking experienced is spoiled by the lack of care and attention to the trails.

The lack of management was most evident with the failure to repair the only bridge from the campsites (over 180) to the trails and the beach. It must have been out of commission for 8 plus years. It was just recently repaired. Why did it take so long? For those many years, campers and families had to drive to the beach or to the trails. Many I suppose tried to get over the creek by walking across the downed trees. It was a dangerous condition that was left neglected. If the rangers really cared they would have found a way to get it repaired. In my view, the excuse that we don't have the funds just doesn't cut it.

I am the current President of the Rotary Club of Harbor Country. Our Club, along with Chikaming Open Lands and Chikaming Township, have installed (or in the process of installing) trail signage according to National Park Standards on trails throughout Harbor Country. I strongly recommend that DNR do the same in the Park. Pat Fisher of Harbor Country Hikers has been leading that effort. Currently, Hoadley Trail in Three Oaks and Robinson Woods in Union Pier have the new trail signage.

Another problem I have found is excessive uncollected trash especially on the north end of the beach. The trash could be removed by a ranger in just a couple hours. My guess is that the rangers forget about the beach once the beach visitors are gone for the season. The Park is a facility that is used year around by many, including myself.

I suspect one of the problems is that the rangers don't get out of their office and walk the trails or the beach. The problems are so evident if they would do so. My best guess is that rangers are focused on visitors that use the beach. How else to you explain the neglect of the trails?

I suggest that the Park try to organize a group volunteers to help maintain the trails and address invasive species. It could be called "Friends of Warren Woods State Park." They could have stewardship days, say one day per month. Please talk to the people at Chikaming Open Lands. They are doing an outstanding job of maintaining their properties. They build trails and tackle invasive species all over Harbor Country.

I believe the Warren Dunes State Park is one of the most visited state parks in the State. It is sad that it is has been neglected. It has not been property maintained. There are so many things that could be done to improve it. It doesn't have a nature center or any facility to educate the public, particularly students, about its ecology, geology, and history. There could be a displays explaining the dunes and the creation of Lake Michigan. I think there is a lost educational opportunity.

I really hope that the DNR takes immediate steps to fix and to improve the Park. It is an amazing parcel of land with over 3 miles of beach on Lake Michigan.

4. *I am a 35 year resident of Berrien County who uses Warren Dunes State Park for pleasure and I volunteer in the Stewardship Program. This year alone I have over 500 volunteer hours at the park with Stewardship and Astronomy. I am in my mid 60's so my use has changed over the years. I have visited the park more than 250 days this year.*

I would like to make the following comments on the Phase 2 Plan:

Invasives – I see nothing in the proposal that addresses the educational aspect of the Invasive program. This to me is a high priority because even if we don't control the invasives completely, we need to educate the younger generations about the harm invasives can do and enlist their concern and help for the future.

We have had over 500 volunteers this year that were students, scouts, or young campers removing invasives at the park. There are Explorer Rangers who have some information on invasives but with new campers each weekend at the park this should have a greater presentation.

Having a Ranger who can spend more time on this would allow more education and invasives removal by park day visitors, campers, and youth organizations. Every weekend of the summer when my time allows, I offer a conservation project on invasive removal to scout groups. Someone hired to do this throughout the summer could enlist many more people than I can since I can only do this on weekends when I have time. This would be true for any volunteer.

I envision a ranger spending a few hours on a weekday for campers and on Sat and Sun for a few hours offering an educational program on invasives and some invasive removal. We could see some major accomplishments if we tap these visitors. I work under Heidi Frei and as she has said "If every camper gave one hour of service removing invasives, we would have no problems".

What about campers bringing firewood with invasives into the park? How strongly is that being enforced.

DNR needs to work better at informing the local community about Explorer Guide and Invasive Programs. Some of the largest employers in the county (Lakeland Hospital, Whirlpool, LECO, the school system, and the Cook Nuclear Plant) have wellness programs and community service volunteer programs that should be tapped. Local people are always saying they had no idea these programs existed.

Trails – The Yellow Birch Trail would make a great handicap accessible trail with the addition of a few boardwalks over wet areas. It would be nice to have a tower at the Floral Lane Circle for looking out over the marsh and for bird watching.

Trail names should be re-introduced. At present there are no trail names.

The numbers are only intersections. People remember and embrace trail names. If I were injured and called 911 I would have to know between what points I am located. Your management plan mentions the Blue Jay Trail – see the necessity?

Spider trails need to be controlled, perhaps by signage. The worst ones are short cuts down dunes.

Camping – A backpackers/bikers campsite could be made at the old sand dune mining area near the Bridgman interstate exit north of Wilson Road. This area enclosed by dunes could easily accommodate 100 campers.

With climate change, camping can extend into November and begin in March. It would be nice to have some campsites open.

Yurts would be a nice addition to attract young families who don't have camping equipment nor a camp trailer/RV. Put Yurts in where Rustic camping is now and move Rustic camping to the Bridgman exit area. Another possibility is to have camp equipment for rent. Universities do this.

Opening camping at the beach in the winter (as proposed) will present problems when people show up to camp and can't because of the strong winds.

Birding – Besides trails and an overlook mentioned above, protect the fore dunes east of the beach parking lot for the bank swallows that currently nest there. Don't expand parking lots into this area. Also, barn swallows nest under the roofs of the old beach buildings. The new building has no place for nesting. Girl Scouts built some nesting platforms by the north and south end of the parking lots and these were installed on Earth Day 2018. More nesting sites closer to the beach will be needed when the two remaining beach buildings are removed. It should be noted that these birds feed on insects with a preference for sand flies. Thus, their presence is essential for protection of beach goers from these insects.

Roads – fix the roads. There are large bumps and holes.

Biking – fix the roads and fill in edges of roads where there are drop-offs from the pavement. It would be nice to allow mountain biking somewhere in the park and I realize the problems with that. Could the Nature trail from Floral Lane along the old Hildebrandt Rd be used for a short trail then winding along the campground road to the beach road? Why not allow mountain biking at Grand Mere State Park from mid June to mid August when deer flies are so bad there you can't hike at all.

Add a bike public service station with tools and pump. This could be at the main entrance at the self-registration station loop. They cost about \$1000.

Astronomy – Inform the local community about this. This has been a hobby of mine all my life, but until I volunteered for invasives I had never heard of the programs at the park. I now volunteer at astronomy programs. Extending hours as proposed would be great.

Drones – is there a policy or not? Many people fly them in the summer at the park.

Restrooms – in day use picnic area – terrible. How many times do men's toilets clog because of underwear or swim suits flushed down toilets?

Guys wait in line for a toilet and crap their pants. They then discard them in the toilet. I have seen this. Try adding a wall trash can in the stall.

Racoons - they get into the trash cans at night dragging trash all over the park, especially on weekend nights. I realize the problem with having workers to deal with this, perhaps a repellent spray could be used if more workers can't be hired.

Streams - I own a lab that has monitored bacteria in the creek/drain for many years. We have made great strides to cleanup some sources of contamination outside of the park but it needs more. People play in the creeks especially where the clay banks are found. They cover themselves with this and go to the beach to wash off. A way needs to be found to stop this. Travel websites actually mention this as a highlight of things to do at the park. All I can think of is laying chain link fencing or something on the banks, but someone should be able to come up with something. Otherwise signage.

Traffic and entrance backups - this year did not see the extensive backups along Red Arrow Hwy as experienced in past years. I think this must be to the use of three entrance lines and rangers walking up the lines. It would be nice if those with Rec Passes and those with other passes could somehow jump the line. I have no answers for this since others would surely try to pass as well. But the problem is much better.

I don't think opening the gate at Hildebrandt road would help campers much, since they are probably not entering the park at peak beach times.

Selling off property east of Red Arrow Highway - bad idea. Think long term beyond 10 years. You will never get this property back. Think research station, housing for rangers, parking with shuttle bus pickup, camp store, firewood sale, camp equipment rental, alternative power for park, nursery for park, etc.

Employees and Infrastructure - it always seems the park is understaffed and in need of repairs. WDSP is one of the gems of the state park system and may be the most visited. The state needs to invest more money in it.

I am always surprised at how few students work at the park in the summer. Yes, I realize this is a funding problem.

APPENDIX C - 2017 ON-SITE USE AND USER STUDY REPORT

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Introduction

As part of the management planning process for Warren Dunes State Park (SP), an on-site study was conducted of a representative sample of park visitors to provide an overall estimate of mean user hours per vehicle in day use parking areas, assess local spending, ascertain the opinion of park users about the future management options and approaches and provide a profile of park visitors, both campers and day users. This on-site approach sampled users on systematically selected days and times across June - November of 2017. It used a windshield survey at all day use parking areas and the same survey handed to a sample of up to 20 camping parties on sample days to ensure representation of the full range of park users.

Methods

The on-site study methodology and questionnaire were developed by the senior author in cooperation with the DNR Park Planner Debbie Jensen of the DNR Park and Recreation Division (PRD) staff. The questionnaire is found in Appendix B and is very similar to an instrument that was used in 2016 in the pilot project of integrating visitor surveys into the state park management planning process at Sleepy Hollow State Park. A sampling calendar of 27 sample days was developed that proportionally allocated sampling days across June - November based on seasonal estimates of park use for summer and fall provided by the DNR (Appendices C and D). The survey commenced in the field on June 22, 2017.

On a sample day, the survey administrator (a Michigan State Park employee) would begin sampling at one of the day use parking areas at the beginning of the designated sample period (9AM, Noon, 3PM or 6PM) per the sampling schedule. The survey administrator would count all vehicles present upon entering the lot. Once the count is made, a questionnaire with location, questionnaire number and time is distributed to each vehicle front windshield or directly handed to the driver if he/she is at the vehicle. If it is raining, surveys are enclosed in a clear plastic bag and placed on the windshield. While most vehicles receive a questionnaire, occasionally one leaves before a survey can be administered, hence the number of surveys distributed is slightly less than the vehicle count. Also, if there are more than 50 vehicles in a lot, it is the intention that all are counted, but only the first 50 counted receive a questionnaire to limit confusion and keep to a time schedule to complete all other vehicle counts and survey distribution. At Warren Dunes this was a significant challenge on busy summer days as lots near the beach would often hold more than 250 vehicles with traffic constantly coming and going, thus making it impossible to get an initial count. If this was the case, the survey administrator would then just distribute 50 surveys in the lot and move quickly to the next one where the problem was often repeated. Thus,

these major day use parking areas near the beach are under-sampled compared to other day use areas of the park.

This method does not capture input from those arriving by bicycle and on foot, only those arriving by vehicle. However, those arriving by vehicle directly support the Michigan State Park system through the purchase of the Recreation Passport or, in the case of non-residents, through the purchase of the non-resident motor vehicle permit. Those arriving by bicycle or on foot, if they have not purchased the Passport or a non-resident motor vehicle permit, are not providing such direct financial support.

For campers, surveys were often distributed by a different park employee as day use areas often took a considerable amount of time for survey distribution. In the campground, a survey administrator would randomly choose a campsite number between 1 and 222 (185 modern sites and 37 rustic sites) and proceeded to sample the next 20 campsites where campers were present by handing them with a questionnaire. If there were less than 20 sites with campers present, then the number of occupied sites with camper present received a questionnaire. If there were more than 20 present, only 20 were distributed.

Respondents returned the questionnaire by U. S. mail using the postage paid, business reply feature of the postcard. Cards were directly delivered to Dr. Nelson at MSU.

Results

Results are presented in three ways. The first is observations/vehicle counts done by the survey administrator. These provide an assessment of use levels for each facility/parking area. The second is survey responses to questions 1-10, which focus on the respondent's experience the day they were sampled. Since these questions ask about the specific day's experience, there is no possibility of oversampling frequent users as each use is a use, whether done by a person who visits the park one time or 100 times in a year. However, Questions 11-16 are weighted to account for frequency of use bias as they ask about suggested improvements, things not to change and demographic information that defines the distinct park user. A frequent user, such as one who visits the park 100 times a year has 100 times greater chance of receiving a survey than one who visits the park once a year. To be able to use a one person, one vote rule where each person has an equal say in suggesting potential changes or the lack of them, the data is weighted to eliminate the frequency of use bias in sampling. For distinct users the data is weighted by the reciprocal of the number of uses the previous year (Q 16). If a person used the park once in the previous year, their weight is 1/1. If they used it 100 times, their weight is 1/100.

All results tables are provided in Appendix A and are numbered as they are in the text of this report.

Observations

There were 14 sample days in Summer and four in Fall. This is a departure of 9 sample days during the summer from the sampling calendar and provides a less complete picture of park use and users than would have been provided by sampling on all 27 days specified in the sampling plan (Appendix D). Table 1 shows that a total of 14,988 vehicles were counted in day use parking areas over the 18 sample days (12,163 in summer and 2,825 in fall) with a total of 1,732

questionnaires distributed (1,512 in summer and 220 in fall) in day use lots. The busiest lots by far were those nearest the beach. Campers were sampled on 15 summer and 3 fall days with a total of 480 surveys distributed (339 in summer and 141 in fall).

Survey Results: Uses

One hundred and fifty-five completed questionnaires were returned by day use respondents and 62 by campers as of the December 31, 2017 cutoff for a total of 217 respondents. Since the last survey date was November 15, this provided almost seven weeks for surveys to be returned after the last sampling date. The response rate for day visitors was 9%, for campers 13% and for the combined group 10%.

Activities and Party Characteristics

The average amount of time a day visitor vehicle was in the park was 5.3 hours and the day visitor party averaged 3.4 people per vehicle. However, many day visitors were grouped with others in other vehicles as the average day visitor group had 5.5 people. For camper respondents, mean people per vehicle was somewhat lower, averaging 2.7 people per vehicle.

A total of 4 percent of day use respondents and 6 percent of camper respondents reported on the day they were sampled that one or more people in their vehicle had a physical impairment that seriously limited him/her from participation in work or recreation. These persons would be classified as disabled under the Americans with Disabilities Act.

Park visitors participated in a wide range of activities. Table 2 shows that the five most common activities for campers in order of participation were swimming, camping, hiking, sunbathing and nature observation. For day visitors the five most common activities were swimming, sunbathing, hiking, photography and picnicking.

When campers were asked the one most important park activity to them, the five most mentioned in descending order were camping, experiencing the dunes/lake/beach, hiking, swimming and photography (Table 3). When day visitors were asked this question, their five most common responses in descending order were experiencing the dunes/lake/beach, swimming, hiking, sunbathing and camping. Due to the beach at Warren Dunes being more than a mile from the campground over a moderately challenging trail or walking on the road, many campers choose to take their vehicle to the beach, thus being sampled with day visitors not camping at the park.

Local Spending

Park visitor spending in the local area of Warren Dunes State Park was substantial (Table 4). Camper reported spending an average of \$141 in the 24 hours prior to being surveyed with 93% of campers spending something within 20 miles of the park. The greatest average amounts were for lodging fees and food and beverages from a store. Day visitor spending averaged \$119 per vehicle with 84% of them spending something in the local area in the past 24 hours. The greatest portion of day visitor spending was on lodging and restaurant expenses, followed by grocery and convenience store food/drink and other spending on miscellaneous items such as souvenirs.

Satisfaction

When asked to rate their satisfaction with their Warren Dunes SP experience the day they were sampled, day visitors were generally very satisfied with a mean rating of 8.0 (Table 5). They rated the experience on a scale of 1-9 with 1 being highly dissatisfied, 5 being neutral and 9 being highly satisfied. Almost half of camper and half of day visitor respondents gave their experience the highest satisfaction rating (9). Only four percent of campers and three percent of day visitor respondents rated their experience as dissatisfying, with 2 percent of campers and five percent of day visitors rating it as neutral.

When asked an open ended question about the one most important reason for their experience rating, the most common positive comments focused on the nature aspects of the park including the dunes, beach and Lake Michigan (Table 6). Also responsible for positive ratings in the campground were comments about good maintenance and patrol from park staff. The most common concerns voiced related to the ratings were a lack of facilities, others with concerns about poor maintenance, concerns about the distance to the beach from the campground and dissatisfaction with trails. However, with a generally positive rating for the experiences of visitors, there were relatively few complaints.

Distinct Users Opinions

To understand the opinions of distinct users, one open ended question asked visitors to identify the one most important change they would like at Warren Dunes SP. This information is weighted as previously discussed to insure frequent users who are more likely to be sampled are not over represented in the results. If a respondent provided more than one desired change, only the first change was recorded in data entry. Campers and day visitors most commonly suggested updating and increasing the number of facilities such as bathrooms, benches, drinking water sources, etc. The two other most frequent suggestions from each group were to improve roads and that there were no changes needed. Each group also had some changes relatively unique to it. For example, campers suggested improved firewood, better campground maintenance and expansion of the campground to accommodate more campers. Day visitors suggested reducing the entry fee, hiring more staff and more concessions by the beach.

When asked what one most important thing should not be changed at Warren Dunes SP (Table 8), both camper and day visitor distinct users were most likely to note not changing the lake, beach and dunes. Day visitors were more supportive than campers of keeping the existing rules, existing fees and easy access to the dunes. Campers were more supportive of keeping the campground as it is, keeping the facilities in the campground as they are and keeping staffing and maintenance levels.

Demographics

Distinct respondent campers had a mean age of 50, with ages ranging from 23-72. Seventy-one percent of distinct camper respondents were female and 29% male. For distinct day visitors, the mean age was 44, with ages ranging from 18-78. Sixty-eight percent of distinct day visitor respondents were female and 32% male.

The majority of distinct campers and day visitors were non-residents of Michigan (Table 9). Illinois was the second most common origin of campers (following Michigan) and Illinois was

the most common origin of day visitors, originating even more than Michigan. Among other states in the region, Indiana was a common origin for both campers and day visitors. Warren Dunes serves a wide diversity of tourists from across the country as well as from across Michigan.

Summary

Warren Dunes is a destination for a wide range of visitors. These visitors are clearly attracted by Lake Michigan, the dunes, the beach and the easy access to all three. These visitors spend substantially in the local area, with camper spending focused on lodging fees to Michigan State Parks and food and beverages from grocery and convenience stores. Day visitors also spend significantly, with most of their expenditures in the lodging sectors for hotels and motels and at restaurants for food and beverages. This provides a very positive impact to the local economy as many lodging and restaurant establishments are locally owned and labor intensive, keeping money spent local and quickly reverberating and multiplying through the economy as local workers spend their wages and their employers purchase many goods and services from local vendors. Satisfaction is high among both campers and day visitors with the most common requests for improvements to update and provide more basic facilities such as bathrooms, benches, etc. There is great support for maintaining the current condition of the dunes, beach and Lake Michigan, including the convenient access provided by the lakeside parking for day visitors.

Acknowledgements

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Appendix A. Tables of Results

Table 1. Vehicle counts and surveys distributed on-site 2017 at Warren Dunes State Park day use areas and campground.

Area	Summer Count	Summer Surveys Dist.	Fall Count	Fall Surveys Dist.	Total Count	Total Surveys Dist.
Small lot closest to park entrance	53	51	10	10	63	61
Small lot second closest to park entrance	72	57	12	10	84	67
Small lot closest to Mt Fuller	120	67	21	12	141	79
Southernmost major lot	2968	385	700	50	3668	435
Middle two lots by Pike's Peak	4523	390	1024	53	5547	443
Northernmost two lots	4257	380	1010	40	5267	420
Picnic shelter/#2 trail marker Parking lot	89	89	13	12	102	101
Floral Lane Parking lot	42	42	14	13	56	55
Vehicles parked legally in park on road sides	0	0	0	0	0	0
"Old campground"/main picnic area open only on weekends	87	51	21	20	108	71
Total Day Use	12163	1512	2825	220	14988	1732
Campers Sampled in Campground	NA	339	NA	141	NA	480

Table 2. Percent Warren Dunes SP respondents participating in selected recreational activities during sample day in 2017.

Activity	Campers	Day Visitors	All
Swim	69%	75%	73%
Hike/walk	66	71	70
Sunbathe	56	72	67
Photography	29	37	35
Picnic	27	36	34
Nature observation	34	33	33
Camp	68	16	30
Bicycle on paved road	27	9	14
Paddle canoe/kayak	5	4	5
Bike on unpaved trail	6	0	2
Metal detect	0	3	2
Fish from shore	0	1	1
Pick berries/mushrooms	0	1	1
Hunt	0	1	1
Fish from boat	0	0	0
Geocache	0	0	0
All others	13	9	10

Table 3. Percent Warren Dunes SP on-site respondents one most important recreational activity during sample day in 2017. (a)

Activity	Campers	Day Visitors	All
Camp	66%	9%	26%
Experience dunes, beach, lake	10	26	21
Swim	5	23	18
Hike/walk	10	16	14
Sunbathe	2	14	10
Picnic	0	6	4
Photography	3	1	2
Nature observation	0	1	1
Paddle canoe/kayak	2	1	1
Metal detect	0	1	1
Bicycle	0	0	0
Fish	0	0	0
Pick berries/mushrooms	0	0	0
Hunt	0	0	0
Geocache	0	0	0
All others	2	3	3
Total	100%	100%	100%

(a) Total may not add to 100% due to rounding

Table 4. Expenditures of on-site respondents during past 24 hours within 20 miles of Warren Dunes SP in 2017 (a).

Item	Campers Mean \$ (% spent something)	Day Visitors Mean \$ (% spent something)	All Mean \$ (% spent something)
Lodging fees	\$47 (53%)	\$41 (25%)	\$43 (47%)
Restaurant & bar meals & drinks	18 (45)	34 (62)	29 (58)
Grocery and convenience store food & drink	34 (62)	18 (48)	22 (52)
Vehicle related	17 (44)	16 (48)	16 (47)
Sporting goods	7 (10)	1 (3)	2 (5)
All other items including souvenirs	18 (35)	9 (20)	12 (24)
Total	\$141 (93%)	\$119 (84%)	\$124 (87%)

(a) Totals may not exactly add up due to rounding.

Table 5. Rating of satisfaction with Warren Dunes SP use experience by on-site respondents on the day sampled in 2017.

Rating Scale	Campers %	Day Visitors %	All %
1 (very dissatisfied)	1.6%	0%	0.5%
2	0	1.3	0.9
3	1.6	0.7	0.9
4	1.6	1.3	1.4
5 (neutral)	1.6	5.3	4.2
6	3.2	5.3	4.7
7	14.5	11.8	12.6
8	29.0	24.3	25.7
9 (very satisfied)	46.5	50.0	49.1
Total	100.0%	100.0%	100.0%
Mean Rating (a)	8.0	8.0	8.0

(a) Rating scale: 1=highly dissatisfied; 5=neutral; 9=highly satisfied.

Table 6. Response to open-ended questions about one most important reason for satisfaction rating with Warren Dunes SP use by on-site respondents on the day sampled in 2017. (a)

Reason	Campers	Day Visitors	All
Lake, dunes, beach	20	24	23
Generally like, wonderful, amazing, being outdoors	8	18	15
Nature, wildlife, quiet	12	11	11
Clean, well maintained and patrolled	16	6	9
Poor/Lack of bathrooms, other facilities	7	8	7
Like campground	7	4	4
Poor maintenance	2	4	3
Like staff	7	1	3
Like bathrooms, other facilities	2	3	2
Like dog beach	2	3	2
Like price/value for money	3	1	2
Like trails	0	3	2
Poor trails	0	2	2
Lack of concessions	0	2	2
Don't like poor access to lake	2	0	1
Like range of activities	3	0	1
Like nature programs	2	0	1
Poor price/value for money	2	1	1
Poor signs/lack of signs	0	1	1
Overcrowded	0	1	1
Poor campground	1	0	1
Like convenient location	0	1	1
Uncrowded	0	1	1
Like easy lake access	0	1	1
Too many rules	0	1	1
Other negative reasons difficult to classify	7	4	4
Total	100%	100%	100%

(a) Total may not add to 100% due to rounding.

Table 7. Response to open ended question about one most important improvement at Warren Dunes SP by distinct on-site user survey respondents in 2017 (a).

Improvement	Campers	Day Visitors	All
Update and increase bathrooms, benches, drinking water	20%	44%	37%
Improve roads	12	6	8
Nothing to improve/change	11	6	7
More trails	9	4	6
Improved accessibility to beach for disabled	3	4	4
Loosen park rules	3	5	4
Improve campground maintenance	6	0	4
Reduce entry fee	0	4	3
Hire more staff	0	4	3
Improve campground reservation system	3	1	2
Have better firewood in campground	8	0	2
Expand the campground, more sites	6	0	2
More concessions by beach	0	3	2
More parking by beach	3	1	2
Provide more activities for visitors	0	2	1
More enforcement patrol	1	1	1
Improve campground utilities	3	0	1
Eliminate dog beach	0	2	1
Increase size of dog beach	0	1	1
Provide watercraft launch	3	0	1
Remove unused buildings by beach	0	2	1
Improve vehicle entry to park	0	1	1
Other suggestions difficult to classify	7	4	5
Total	100%	100%	100%

(a) Total may not add to 100% due to rounding.

Table 8. Response to open ended question about one most important thing not to change at Warren Dunes SP for distinct on-site user survey respondents in 2017. (a)

Don't change	Campers	Day Visitors	All
Condition of beach/dunes/lake	16%	11%	13%
Don't know/Keep as is	12	12	12
Rules and regulations	4	12	10
Natural areas/nature/wildness/wildlife/quiet	8	7	7
Cost/price	1	10	7
Campground	12	5	7
Easy access to lake/dunes/beach	0	7	6
Staff personnel	8	5	6
Level of maintenance	7	4	5
Dog beach	4	5	5
Vendors/concession	3	6	5
Facilities	8	2	4
Naturalist/Explorer Guide program	4	2	2
Areas set aside for kids	3	2	2
Parking	0	3	2
Level of rule enforcement	1	1	1
Trails	0	2	1
Flag warning system on beach	0	2	1
Convenient	0	2	1
Other hard to classify	3	3	3
Total	100%	100%	100%

(a) Total may not add to 100% due to rounding.

Table 9. Origins of distinct park visitors to Warren Dunes SP by state for on-site user survey respondents in 2017 (a)

State	% Campers Originating	% Day Visitors Originating	% All Originating
Michigan	46%	36%	39%
Illinois	19	39	33
Indiana	9	20	17
Ohio	3	1	2
Iowa	3	1	2
Wisconsin	4	1	2
California	0	0	1
Florida	3	0	1
Arkansas	0	0	1
International	10	1	4
Total	100%	100%	100%

(a) Total may not add to 100% due to rounding.

Appendix B. On-site questionnaire

Warren Dunes State Park Use Assessment

_____ Date

Dear Driver:

Michigan State University (MSU) and the Michigan DNR are cooperating to measure recreation use of Warren Dunes State Park as part of updating the park management plan. Please take the 4 minutes needed to complete this form and mail it to us postage paid or put it in one of the drop boxes at the beach or the campground office. You will be anonymous and your name will not be connected with study results. You indicate your voluntary agreement to participate by completing and returning this survey.

1. Please check ALL of the activities in which one or more of the people from your vehicle participated while you were in the park today.

Hiking/Walking/Running Photography Paddling watercraft
 Bicycling paved road/trail Camping Sunbathing
 Bicycling unpaved trail Picnicking Swimming
 Fishing from boat Hunting/Scouting Metal detecting
 Fishing from shore/dock
 Pick berries/mushrooms
 Nature observation (birding, etc.) Other(_____)

2. Which ONE activity was the MAIN reason visited the park today? _____

3. How many HOURS was your vehicle in the park today? _____ # HOURS

4. Including you, how many PEOPLE came here in this vehicle? _____ # PEOPLE

5. Including other vehicles, how many people are in your group? _____ # PEOPLE

6. Does anyone in your vehicle have a physical impairment that seriously limits his/her participation in work or recreation? Yes No

7. Where did you stay last night (check one)? Campground in Warren Dunes SP
 Own principal home Another campground Another's home/2nd home
 Hotel/motel/rental cabin Own 2nd home Other (_____)

8. During the past 24 hours, how much did you and those in your vehicle spend within 20 miles of Warren Dunes State Park on the following items.

Vehicle related (gas, oil, trip related repair, etc.) \$ _____
Restaurant & bar meals & drinks \$ _____
Grocery or convenience store food, drink or ice \$ _____
Sporting goods (fishing supplies, camping gear, etc.) \$ _____
Lodging fees (camping, motel, cabin rental, etc.) \$ _____
All other items (watercraft rental, souvenirs, etc.) \$ _____

9. Please rate on a scale of 1-9 (w/ 1 highly dissatisfied; 5 neutral; and 9 highly satisfied), how satisfied you were with **today's Warren Dunes SP** experience. #_____ **Rating**

10. What is the ONE most important reason for your rating? _____

11. What ONE change would you recommend to improve Warren Dunes SP? _____

12. What ONE thing would you recommend not change at Warren Dunes SP? _____

13. What is your principal home zip code? _____

14. Your age? _____ years

15. Please circle your gender. M or F

16. How many days did you visit Warren Dunes SP in **2016** (last year)? _____ #days

Thanks for your help in improving the management of Warren Dunes State Park.

Dr. Chuck Nelson, Project Director

MSU Dept. Community Sustainability, 480 Wilson Rd.,

East Lansing, MI 48824 Phone (517) 432-0272

nelsonc@msu.edu

_____ Time

_____ Site

_____ Ques #

Appendix C. Warren Dunes Sampling Schedule 2017

- 27 sample days prescribed, 18 accomplished
- Based on Summer and Fall use levels per 2016 DNR park use data
- For our study purposes
 - Summer sampling June-August
 - Fall sampling September - November
- Sample days are divided the same way with 2/3 on weekdays and 1/3 on weekends similar to calendar.
- Warren Dunes SP sampling will begin at one of the following times each sample day: 9 AM, Noon, 3PM and 6PM.

Appendix D. Warren Dunes State Park Planned On-Site Sampling Calendar (a)

Day	Date	Sampling Time Start
Thu	6/22	Noon
Sat	6/24	3PM
Mon	6/26	9AM
Fri	6/30	6PM
Tues	7/4	3PM
Sat	7/8	9AM
Wed	7/12	3PM
Fri	7/14	9AM
Sun	7/16	Noon
Mon	7/17	6PM
Thu	7/20	9AM
Sun	7/23	Noon
Tues	7/25	Noon
Sat	7/29	6PM
Mon	7/31	3PM
Tue	8/1	6PM
Sun	8/6	3PM
Wed	8/9	Noon
Tue	8/15	6PM
Fri	8/18	Noon
Sun	8/20	6PM
Thu	8/24	6PM
Wed	8/30	9AM
Sun	9/3	3PM
Thu	9/21	Noon
Tue	10/17	9AM
Wed	11/15	3PM

(a) Day/Date/Time crossed out were missed for day use sampling by park personnel. In addition, camper sampling was missed 7/8-7/23. Additional campers were sampled on four days in excess of the 20 specified in the methods: 8/18 (60 campers total), 8/30 (40 campers total), 9/5 (60 campers total) and 9/21 (80 campers total).