



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



The outlet of Duck Lake into Lake Michigan under the Scenic Drive bridge.
Photo Credit: Tyler Leiprandt and Michigan Sky Media LLC

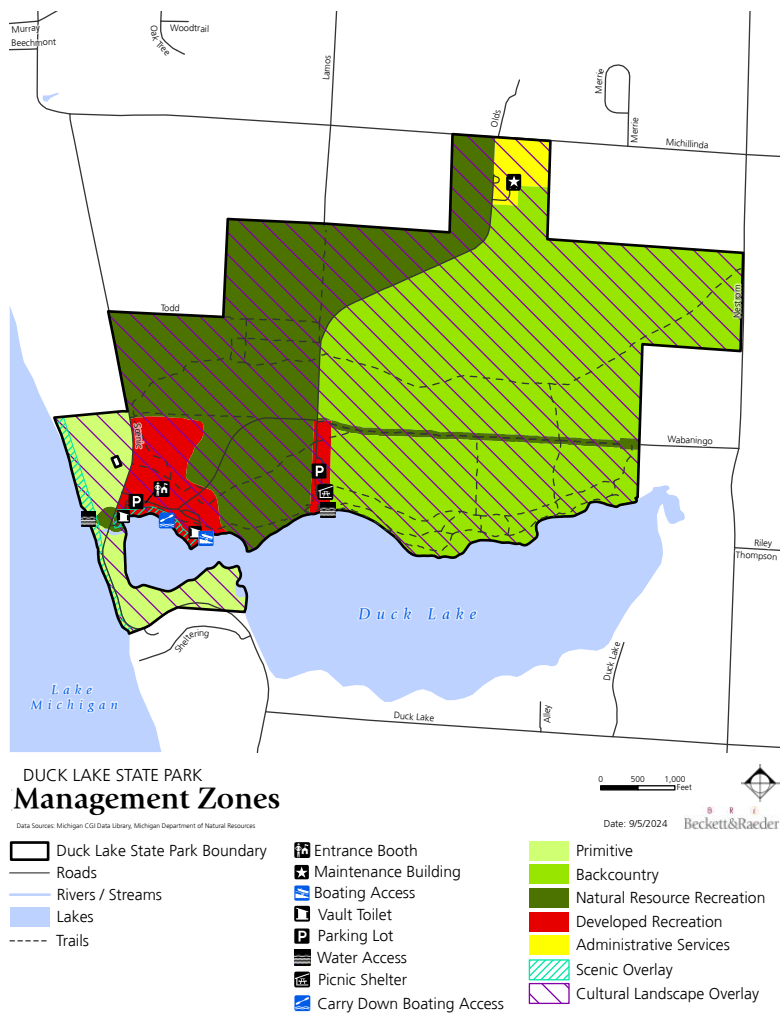
Duck Lake State Park

GENERAL MANAGEMENT PLAN

APPROVED SEPTEMBER 16, 2024

Prepared with the assistance of Beckett & Raeder, Inc

B R 
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This project was directed by Deborah Jensen, Management Plan Administrator, Department of Natural Resources, DNR Parks & Recreation Division with assistance from Beckett & Raeder, Inc.

PLAN APPROVALS:


DNR Chief, Parks & Recreation Division

9/13/2024
Date


DNR Natural Resources Deputy

9/16/2024
Date


DNR Director, Department of Natural Resources

9/16/2024
Date

PLAN APPROVALS

PLAN APPROVAL RECOMMENDATIONS

The following dates reference when the plans were presented for recommendation. In some instances, additional time was allotted for plan review following the presentation with subsequent approval received by email.

APPROVAL BODY`	APPROVAL DATE
PRD - Section Chiefs	7/2/2024
DNR- Resource Management Bureau	7/26/2024 (Via email)
MSPAC- Stewardship Subcommittee	8/7/2024
NRC- Michigan State Parks Advisory Committee	8/7/2024

RESOLUTION NO. 08-2024-07

MICHIGAN STATE PARKS ADVISORY COMMITTEE (MSPAC)

RESOLUTION TO RECOMMEND APPROVAL OF THE
“DUCK LAKE STATE PARK GENERAL MANAGEMENT PLAN”

ADOPTED: August 7, 2024

WHEREAS, the Michigan Department of Natural Resources’ (DNR) Parks and Recreation Division has completed the General Management Plan for Duck Lake State Park; and

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

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

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

WHEREAS, the General Management Plan is consistent with the recommendations of the Michigan State Parks and Outdoor Recreation Blue Ribbon Panel and the Parks and Recreation Division’s strategic plan; and

WHEREAS, the General Management Plan has been reviewed and recommended for approval by the Parks and Recreation Division and the MSPAC Stewardship Subcommittee.

THEREFORE, BE IT RESOLVED, that the Michigan State Parks Advisory Committee recommends approval of the Duck Lake State Park General Management Plan; and

THEREFORE, BE IT FURTHER RESOLVED that the Michigan State Parks Advisory Committee further recommends that the DNR Director approve the General Management Plan for Duck Lake State Park;

Submitted by: Michigan State Park Advisory Committee

Motioned by: Chuck Nelson
Seconded by: Carol Rose

Yeas:	9
Nays:	0
Abstained:	0
Absent:	3

This Resolution was adopted by the Michigan State Parks Advisory Committee at their meeting on August 7, 2024, as Resolution No. 08-2024-07.

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A park visitor walks two dogs on the boardwalk that crosses under Scenic Drive and leads to Lake Michigan



Two anglers maneuver their fishing boat at the Duck Lake boat launch.

Photo credit: Tyler Leiprandt and Michigan Sky Media LLC

General Management Plan

Executive Summary

Duck Lake State Park is a 728-acre day-use park in Muskegon County, with shoreline and a large sand dune on Lake Michigan. The park also has shoreline on Duck Lake, a small inland lake (271 acres) with a channel connecting to Lake Michigan. Visitors to the park enjoy beach access and paddle sports, fishing, hiking, cross-country skiing and hunting. The park features a boat launch and sandy beach on Duck Lake, a picnic area with a shelter and modern bathrooms, and access to Lake Michigan. Formerly two Boy Scout camps, the park features many trails that were once used to access the camp buildings. This largely undeveloped park is well-loved by local residents and enjoyed by visitors to the area as well.

The purpose of this general management plan (GMP) is to guide the future long-term management and development of Duck Lake State Park. Overall, this plan seeks to uphold the Michigan Department of Natural Resources (DNR) Parks & Recreation Division's (PRD) Mission: "to acquire, protect, and preserve the natural and cultural features of Michigan's unique resources, and to provide access to land and water based public recreation and educational opportunities." The

management plan brings together DNR staff, stakeholders, and the public into a process that defines the following for the state park:

- Purpose and significance that captures the unique identity of Duck Lake State Park.
- Twenty-year management zone plan reflecting the resource protection goals and level of development appropriate for different areas of the state park.
- Ten-year action plan that addresses the desired future condition within the state park as a whole and within each of the designated management zones.

The supporting analysis, included as Appendix A of this plan, provides important background information on Duck Lake State Park that informs this planning initiative. It includes a comprehensive review of the state park setting, area demographics, history, land ownership, legal mandates, and cultural, natural, and recreation resources. Furthermore, several existing planning documents, including the DNR Evergreen Goals and the Michigan Statewide Comprehensive Outdoor Recreation Plan, were used as guiding references (see Chapter One).

Significance of Duck Lake State Park

This general management plan was developed in consideration of the property's significant features that make it distinct from other parks in the state park system. Duck Lake State Park was determined significant due to the aspects that are summarized below. The full statements of significance can be found in Chapter Three.

- The park is an excellent day-use destination with easy access to recreation opportunities on both the inland Duck Lake and the expansive Lake Michigan shoreline.
- Duck Lake State Park is cherished for its largely undeveloped nature. The mile of undeveloped inland lake shoreline within the park is relatively rare in west Michigan, benefiting land and water wildlife.
- Duck Lake State Park offers a range of recreation options, including beach access and paddling in the calmer waters of Duck Lake, enjoying the shores of Lake Michigan, fishing on Duck Lake and Lake Michigan, and hiking along wooded trails.
- Situated close to regional population centers, the park serves as a convenient destination for day-use outdoor recreation and family gathering that is valued highly by the local community.
- Duck Lake State Park plays an important role in preserving natural habitats within a larger mosaic of public lands. It serves as a migratory stopover site and nesting habitat for waterfowl and passerines, and the forests are home to a variety of plant and animal species.
- Duck Lake State Park bears a rich historical legacy, including evidence of indigenous culture, a former 1840's sawmill and associated settlement, notable Boy Scout camps, and offshore shipwrecks.
- Duck Lake State Park's location and status as a migratory pathway make it a favored destination for hunting enthusiasts, particularly those interested in waterfowl hunting.



A group of thirteen swimmers pose in the shallow waters of Duck Lake

Management Zones

A key goal in the development of this general management plan is to continue to protect the park's natural and cultural resources, while providing recreation and education opportunities. Taking this into account, the planning team, with stakeholder and public input, established appropriate management zones for the park from a palette of nine standard zones. The management zone map and a thorough review of each management zone are found in Chapter Four of this plan. A condensed description of each of the applied management zones is as follows:

Primitive Zone

The primary purpose of the Primitive Zone is the protection of natural resources and natural processes. The zone is managed for low-impact recreational experiences in a primitive, natural landscape. Only dispersed, self-reliant, and low-frequency use is allowed. Attaining and maintaining a high-quality natural resource condition dictates the extent to which recreational improvements or uses are allowed. This zone covers about 7% of the park and includes the area along the Lake Michigan shoreline designated as Critical Dunes.

Backcountry Zone

The character of this zone is natural, with minimal evidence of human impact through recreational use. While the Primitive Zone is highly restrictive for recreational use and human impact, this zone allows for slightly increased use, including bicycle and equestrian use if appropriate, and modifications of the landscape (e.g., trail development) to accommodate that use. This zone covers 53% of the park and includes the wooded areas in the eastern portion of the park, except the area around the headquarters/shop building.

Natural Resource Recreation Zone

The Natural Resource Recreation zone supports active recreation conducted in a natural setting with medium to high-density use. There is an emphasis on resource quality over recreation, but moderate to high levels of use may be accommodated. This zone covers 32% of the park and includes the planted pines areas in the western area of the park. This zone also includes the boardwalk from Duck Lake to the Lake Michigan beach and the former Wabaningo Road corridor.

Developed Recreation Zone

The Developed Recreation Zone supports 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. This zone is approximately 6% of the park and includes the boat launch, parking areas, picnic shelter, and beach area on Duck Lake. The zone is expanded north of the current parking lots in an area that is predominantly pine plantation to allow for future expansion.

Administrative Services Zone

This zone encompasses the developed areas required for program administration and operations. Typically, it will include offices, contact stations, maintenance facilities and all related land base required to conduct the business of running a state park or park. This zone covers 13 acres of the park and includes the park headquarters/shop area as well as additional area for potential alternative energy generation.

Scenic Overlay

The Scenic Overlay recognizes that there are aesthetic qualities to be preserved and protected in our state park and recreation areas. Examples of this zone include scenic views, such as the overlook escarpment at the Lake of the Clouds in Porcupine Mountains Wilderness State Park, or linear components such as a scenic road or a scenic river. In this park, the Scenic Overlay is applied over the Lake Michigan shoreline and the portion of the Duck Lake shoreline and covers 10.4 acres of the park.

Cultural Landscape Overlay

This zone addresses the overall cultural setting of a site, including historic structures and ethnographic sites. For example, a location associated with a particular cultural resource, such as an abandoned mine townsite representative of a bygone era, would qualify as a Cultural Landscape Zone. In this park, the Cultural Landscape Zone is used as an overlay (sub-set) of the management zones, and as such, the guidance for the underlying zone will also apply. The cultural landscape zone is applied to the entire park, due to its status as two former Boy Scout camps, site of a historic mill town, and activity by indigenous peoples.

Ten-Year Action Plan

Once the planning team has established management zones to guide Duck Lake State Park for the next 20 years, action are identified that are desired to be implemented within the next ten years. The actions are broken down into categories pertaining to an area of management and operations, infrastructure/development projects that require capital outlay, small infrastructure and development projects, or partner projects. Future improvements will be considered in the context of efficiency, environmental sustainability, and resiliency. Below is a summary of the action plan for the park. The full ten-year action plan can be found in Chapter Five.

Management and Operations

Projects related to the management and operations of the park include continuing to explore land acquisition of properties within the Project Boundary, seeking alternative energy solutions for all current and proposed facilities to work towards energy independence at the park, reviewing all proposed earthwork activities for potential impact to cultural resources, invasive species detection and removal efforts, considering education programming at the park, and completing a natural resource stewardship plan. In addition, the park will develop an interpretation plan that highlights historic and natural resources, analyze the existing trail system and make improvements to routing and wayfinding signage, work with the township to consider access and protection of the cemetery, and consider improvements to bathrooms at the day-use beach area. The park will also evaluate boating

access site use levels, types, and traffic flow to identify if any modifications are needed.

Infrastructure and Development: Capital Outlay

Projects within the next ten years that require capital outlay funds to complete include adding a well and septic system to the headquarters building to enable the addition of a restroom and expansion for the office, or considering an alternate location for a new headquarters building; replacing the contact station; repairing and/or replacing the Lake Michigan beach boardwalk, developing an accessible kayak launch on Duck Lake; creating an accessible trail loop; improving the accessibility of the Duck Lake beach and picnic area, expanding the day-use parking lot; and performing a phase 1 archaeological survey in the area of the parking lot expansion.

Infrastructure and Development: Small Projects

A small project will include developing a small trailhead parking lot at the Wabaningo Road entry.

Partner Projects

The park will continue to work with partners on some initiatives. Park staff will continue to work with the Duck Lake Association and Fruitland Township to re-open the channel to Lake Michigan when it is blocked with sand and continue to work with other entities to support regional trail and connector trail initiatives as they may impact the park.



A yoga class practices on their mats in the shade of the forest



The northern lights can be seen shining over the Lake Michigan sand dunes. Photo credit: Photo Ambassador Blair Celano

Chapter One:

Core Values & Guiding Resources

1.1 Mission Statements

Throughout the planning process, the core values of the Department of Natural Resources (DNR) were the foundation of the planning team's decisions. These include the mission statement of the DNR, the DNR Evergreen Goals, and the DNR Parks & Recreation Division (PRD) Mission Statement. These values set the protection of natural and cultural resources and the provision of recreational and educational opportunities at the forefront of the plan.

DNR Mission Statement

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.

DNR Evergreen Goals

- **Protect** natural and cultural resources
- **Ensure** sustainable recreation use and enjoyment
- **Enable** strong natural resource-based economies
- **Foster** effective business practices and good governance
- **Improve** and build strong relationships and partnerships, internally and externally

PRD Mission Statement

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

1.2 Guiding References

The general management planning process is guided and shaped by several resources developed to provide recommendations for managing Michigan's parks and recreation system. In particular, these resources have helped shape the ten-year action plan established in this plan.

Michigan State Parks & Outdoor Recreation Blue Ribbon Panel Report (2012)

The Blue Ribbon Panel's report to Governor Snyder identifies a number of recommendations for system-wide changes to programs, management, infrastructure type, and investment strategies that set up the visionary framework for the next 30-50 years of park and outdoor recreation management in Michigan. Recommendations in the report include:

- Identify and protect important natural, cultural, historic, and prehistoric resources

- Diversify funding
- Prioritize development of statewide and regional systems of connected trail networks
- Encourage connections between communities and their recreational assets to strengthen regional identities
- Integrate tourism and economic development marketing
- Prioritize investment in parks and recreation

Michigan Statewide Comprehensive Outdoor Recreation Plan 2023-2027 (SCORP)

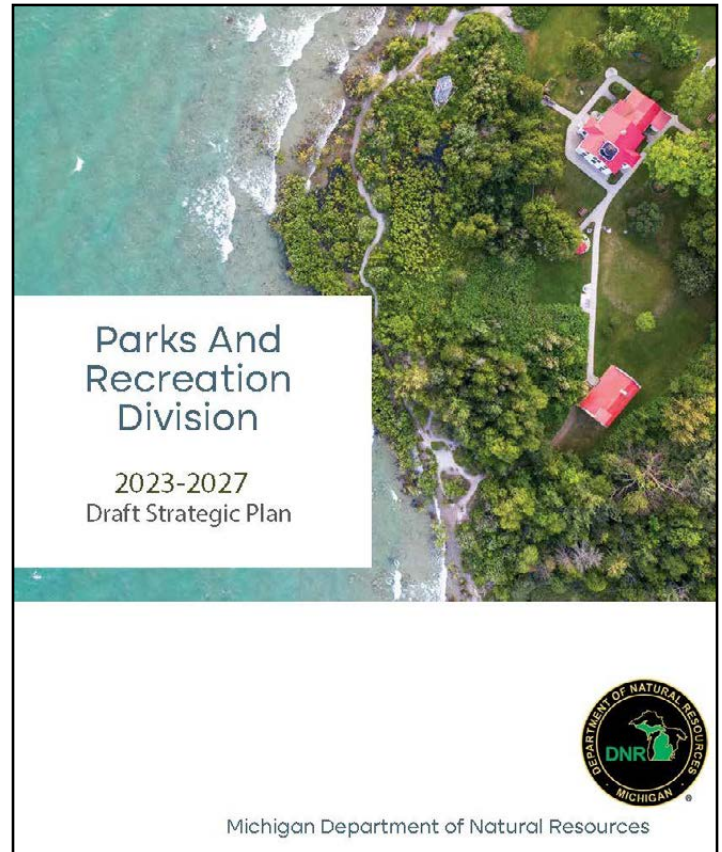
SCORP is a five-year strategic plan that shapes investment by the state and local communities in priority outdoor recreation infrastructure and programming. The plan's overarching goal is to "ensure that Michigan's outdoor recreation assets are equitably distributed, developed and managed to provide convenient and welcoming access to the outdoors for healthful, outdoor physical activity; and while sustaining our lands, waters and wildlife for current and future generations, drive broad-based economic and quality-of-life benefits to people and communities," with the following strategies:

- Improve collaboration: Outdoor recreation stakeholders collaborate and cooperate to ensure that Michigan's recreation system meets the needs of residents and visitors.
- Improve and expand recreational access: Recreation opportunities are connected and accessible to residents and visitors of all backgrounds, abilities, means and geographic locations.
- Enhance health benefits: Outdoor recreation increases the physical activity and health of Michigan's residents and visitors.
- Enhance prosperity: Outdoor recreation advances economic prosperity and supports a high quality of life as well as talent retention in Michigan's communities.

DNR Public Land Strategy – The Power of Public Lands (2021-2027)

The public land strategy provides a framework for the conservation and management of DNR-managed public land to ensure the best use of the state's natural and cultural resources for the benefit of Michigan residents and visitors. The strategy sets priorities and guides actions for the best use of the 4.6 million acres of state forests, parks, trails, game and wildlife areas, and other public lands the Michigan DNR is entrusted to manage on behalf of the people. The plan identifies three broad goals with strategies and measurable objectives for each goal. These goals are to:

- Protect natural and cultural resources
- Provide access to outdoor public recreation opportunities
- Perform responsible natural resource management



Michigan DNR PRD Strategic Plan Cover

PRD Strategic Plan (2023-2027)

The PRD Strategic Plan is the overarching document that guides the Parks and Recreation Division in carrying out its mission. This plan establishes long-range goals, objectives, and strategies for Michigan's state parks and recreation system for the 5-year period beginning in 2023. The goals identified in the plan are:

- Preserve, protect, maintain and restore Michigan's natural and cultural resources on PRD administered lands.
- Foster appreciation for natural and cultural resources by providing inclusive and diverse recreation and education experiences.
- Sustainably fund PRD programs, operations, maintenance and facilities.
- Integrate environmentally sustainable practices into PRD culture.

Michigan Department of Natural Resources Trail Plan (2022-2032)

The 2022-2032 Michigan DNR Trails Plan guides the direction of more than 13,400 miles of Michigan's diverse trail opportunities and lays out key goals to ensure these assets are sustained and remain relevant into the future. To further elevate Michigan's national reputation as the Trails State, the DNR will pursue the following goals over the next ten years:

- Sustainable maintenance and development: Manage Michigan's state-designated trails system to sustainably maintain and improve existing conditions while supporting the DNR's long-term natural and cultural resource management goals.
- Funding: Develop and refine funding structures to ensure state-designated trails provide quality recreation and transportation experiences.
- Planning and collaboration: Model trail planning best practices to maintain and improve strong relationships and partnerships with the public, stakeholders and other governmental agencies.
- Marketing, promotion and education: Promote Michigan's diverse trail opportunities to residents and visitors, accurately depicting experiences found throughout the state.

1.3 Summary of Legal Mandates

For all park general management plans, legal mandates are identified that serve to further guide the development of the plan, park management, and park operations. For the DNR's planning purposes, the term "Legal Mandates" refers to not only state law, but also the administrative tools of "Policy" and "Directive" of the Natural Resources Commission, the

Department of Natural Resources, and the Parks & Recreation Division. The general and site-specific legal mandates applicable to Duck Lake State Park are listed in Appendix A: Supporting Analysis.

The legal mandates that most directly impact planning and management at Duck Lake State Park focus on the following areas:

- Federal mandates to provide accessible facilities
- Preservation of natural and cultural resources
- Water resources and wetlands protection
- Hunting area controls
- Requirement for a Recreation Passport for entry into the park
- Watercraft controls for Duck Lake creating a no-wake zone in the western portion of the lake



Michigan DNR Trails Plan Cover



A monarch butterfly rests on a pink milkweed blossom. Photo credit: Photo Ambassador Blair Celano



A wooden boardwalk leads through the woods. Photo credit: Tyler Leiprandt and Michigan Sky Media LLC

Chapter Two:

Plan Process Overview

2.1 Planning Objectives

Duck Lake State Park is a relatively young park in the Michigan state park system, established in 1974 through the purchase of two former Boy Scout camp properties. The camp buildings were in poor condition and were demolished, but some remnants of the former activity remain, such as the foot trails criss-crossing the land near the shore of Duck Lake. Planning efforts for the park included day-use such as parking, a boat launch, and beach access, and some plans recommended modest rustic and group camping facilities which were not developed. The park's day-use amenities were constructed in the mid- to late-1980's and have since served the park well. However, demand at the park has increased, and the facilities are starting to show their age. To determine the best course of action in shaping the park's future, a renewed planning process has been undertaken.

This general management planning process sets out a framework for protecting the park's resources while providing for meaningful visitor experiences. The long-range vision and management objectives for Duck Lake State Park are derived from the missions of the DNR and the Parks & Recreation Division (PRD), applicable legal directives, the purpose of the

park, and the park's significant natural and cultural resources.

The objective of the general management plan (GMP) is to bring together PRD staff, staff from other resource divisions, stakeholders, and the public into a planning process that defines and clarifies the unique purpose and significance of Duck Lake State Park. Collectively, those attributes will be reinforced in the planning and management decisions that impact the park. Through this process, the team creates a 20-year management zone plan to guide park planning decisions as well as a 10-year action plan to establish specific action strategies for the park. Each GMP is reviewed every five years to ensure there have been no major changes that would warrant a revision to the approved plan.

2.2 Planning Process

The planning team met periodically over a twelve month period to develop the GMP, beginning in May 2023 and ending in May 2024. Throughout the process, the team sought the input of the public and stakeholders to guide the decisions made in the plan. A stakeholder workshop was held in May 2023 to gather insight from organizations tied to the park. In addition, an online public input survey was available for

interested parties to comment on their current use of the park and their priorities for the future. Following the input sessions and survey, the team developed a ten-year action plan and developed the draft plan.

2.3 Planning Team

This plan was developed with the direct assistance, input, and expertise provided by all members of the planning team. The planning process and document development was facilitated by Beckett & Raeder, Inc.

2.4 Summary of Input Opportunities

Public input is a critical part of the planning for Duck Lake State Park. Below is a summary of the public and stakeholder input methods that were used to inform the development of the GMP. Several different methods were used to ensure everyone had an opportunity for input. Full reports for each of the outreach methods are included in Appendix B of this plan.

Project Website

Information about the general management planning process was hosted on a webpage for the project. This was updated with results of the public input survey, the draft of the GMP, and notifications about the public meeting. The website contained contact information so that the public could contact the planning team at any time with questions, concerns, and input.

On-Site Survey

Another method designed to give representative user feedback to guide the management plan, but in less depth than the online public input survey, was an on-site use and user study undertaken in association with Michigan State University. The study included a survey 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. This on-site approach sampled users on systematically selected days and times across June – October of 2018. It used a windshield survey at the day-use parking area.

Results of this survey indicated a high overall satisfaction rating for day visitors at Duck Lake State Park. When asked about improvements, day visitor respondents sought improvements in park maintenance, easier access to Lake Michigan and updated facilities such as restrooms. They also suggested providing additional parking and an improvement to the existing trail system. A full report can be found in Appendix D.

Planning Team

DIVISION	TITLE	NAME
PRD	Management Plan Administrator	Debbie Jensen
PRD	Planning Assistant/ Lands Liaison	Matt Lincoln
PRD	Unit Manager	Gregory Sherburn
PRD	Unit Supervisor	Josh Fogel
PRD	District Supervisor	Pat Whalen
PRD	Regional Planner	Justin Gerould
PRD	Ecologist	Greg Norwood
MHC	Archaeologist	Wayne Lusardi
FD (Fisheries)	Fisheries Manager	Scott Heintzelman
FD (Fisheries)	Fisheries Biologist	Mark Tonello
FRD (Forestry)	Forester	Jesse Bramer
LED (Law)	Conservation Officer	Anna Cullen
MOD (Marketing)	Interpreter	Elizabeth Brockwell-Tillman
FOD (Finance)	Geologist	Peter Rose
WLD (Wildlife)	Wildlife Biologist	Greg Hochstetler

Stakeholder Input Workshop

To gather targeted input from individuals and groups in the community representing governmental, non-profit, and business/tourism entities, the planning team invited nearly 50 stakeholders, both individuals and community groups, to participate in a facilitated input workshop held on September 18, 2023, from 2:00 p.m. to 4:00 p.m. at the Fruitland Township Hall in Whitehall, Michigan. Representatives of the Michigan Department of Natural Resources (DNR) provided the stakeholders with an overview of Duck Lake State Park, including its natural features, cultural resources, and recreational offerings. The stakeholders were also presented the general management plan process, timeline, and an explanation of the plan elements that their input would inform: the statements of significance, the twenty-year management zone map, and actions intended to be accomplished over the next ten years.

The stakeholders were divided into two small-table discussion groups, which completed a series of exercises describing the park's context, the park itself, opportunities for partnerships, the park's potential benefit to the larger community, and the stakeholders' vision for the park's future. Each table then reported out to the larger group.

Stakeholders in attendance appreciated the undeveloped natural beauty of the park and desired the park to remain largely unchanged and for the shoreline to remain natural. They did note that accessibility of the beach and trails could be improved. Some stakeholders wanted to be able to access

the park in the winter months, and other wished the gates to be locked at night. Stakeholders also discussed the need for modern restrooms near the Lake Michigan beach. Park management considered these ideas and included action items to create an accessible trail loop and analyze options for adding restrooms near the Lake Michigan Beach. Park staff does not intend to change the current park access schedule, however, due to staffing limitations. The results of the table exercises can be found in Appendix B.

Online Public Input Survey

One of the methods the planning team used to gather input from park users was an online survey. This online approach provides a convenient way for those who have access to the internet to provide feedback, though it is not designed to be statistically representative of Duck Lake State Park users or uses, as respondents self-select. The online survey provides valuable information about what certain individuals or groups hope to see in the park's future management.

The survey was advertised to a diverse range of people through various means. A press release was sent out to subscribers of boating, wildlife viewing, trails, and statewide DNR news and filtered for counties in the immediate vicinity of the park, resulting in distribution to 32,204 email subscribers. The survey link was also promoted in local media outlets and was sent to over 45 stakeholders the planning team had identified. Stakeholders were encouraged to share the survey further.

Responses were collected from August 30, 2023 through September 30, 2023. During the collection period, 238 individuals responded to the survey. The survey included questions on what activities visitors like to participate in, their overall experience at the park, and their opinions on the day-use amenities, fishing, hunting, trails, programs, and how they think the park could be improved.

Common concerns in the public input survey results related to the park's limited parking capacity, a desire for restrooms near the Lake Michigan beach, and comments about the park trails and their condition and accessibility. Some of these comments were similar to the stakeholder input, and in response to these, the planning team will further analyze options for adding restrooms near the Lake Michigan day-use beach, improve routing of the trails and create an accessible trail loop, and continue to coordinate with external groups on regional trail proposals that impact the park. Equestrian trails were requested at the park in the public input survey, but the planning team discussed that the park is not large enough to support equestrian trails.

Tribal Communication

The department's Tribal Coordinator reached out to the twelve federally-recognized tribes in Michigan with a letter notifying them of the GMP process and timeline and inviting input.

Public Meeting

The public was invited to share their thoughts about the Duck Lake State Park Draft General Management Plan at a public meeting that was hosted by the Department of Natural Resources (DNR) on March 20, 2024 from 6:00- 7:30 p.m. at the Fruitland Township Hall in Whitehall, Michigan. The general public was notified about the meeting through a press release, internet postings, and email notifications. A total of 62 attendees were recorded on sign-in sheets.

The meeting began with an introduction of planning team members, followed by an overview of the general management plan process, Duck Lake State Park, and the draft general management plan contents. The presentation was followed by a question-and-answer period. Topics discussed included requests from the public for horse trails in the park, discussion of the policy to keep the park gates locked in the winter, the capacity of boat trailer parking at the launch and boats on the lake, regional trail proposals in the area, and others. Then, attendees were asked to review the presentation boards that included the following excerpts of the draft general management plan: statements of significance, management zone plan, and ten-year actions. A proposed project boundary map was also available for viewing. In addition, an online input method was provided for those who did not have the opportunity to come to the in-person meeting. A full report of the input received can be found in Appendix B.

Following the public review period, the planning team met to discuss the input received and make any necessary revisions. Changes made to the plan included revising a statement of significance that referred to Duck Lake as "large"; enlarging the administrative services zone to allow for potential future alternative energy generation; removing the action to expand boat access site parking and replacing with an action to evaluate the boating access site use levels, types, and traffic flow to see if any modifications are needed; removing the action to explore and evaluate the feasibility of adding limited rustic lodging opportunities to the park; and clarifying the action to create a trail loop compliant with the Americans with Disabilities Act. Though there were public comments asking for horse trails in the park, the length of trails that could be created and the limited season to avoid conflict with other uses would be too minimal to justify staffing to administer additional uses is not feasible at this time.

2.5 Climate Adaptation Planning

The following anticipated climate change impacts and vulnerabilities have been identified that could impact recreation and park infrastructure at Duck Lake State Park.

Source: Fourth National Climate Assessment (2018) – Northwest. www.adaptationworkbook.org/explore-impacts.

- Temperatures in the Midwest are projected to increase by 5.6 to 9.5F by the end of the century (2071-2100).
- The frequency and intensity of heat waves is expected to increase across the Midwest by the middle of the century (2036-2065).
- The frequency and intensity of cold waves is expected to decrease across the Midwest by the middle of the century (2036-2065).
- Drought risk is expected to increase across the Midwest by the end of the century.
- Climate conditions will increase fire risks in the Midwest by the end of the century.
- Average annual precipitation is projected to increase slightly across the Midwest over the next century.
- The frequency of intense precipitation will continue to increase across the Midwest under climate change.
- The annual frost-free season is expected to increase by roughly 30 days in the Midwest by the end of the century.
- Climate change will amplify many existing stressors to forest ecosystems in the Midwest, such as invasive species, insect pests and pathogens, and disturbance regimes.
- Surface water temperatures are expected to rise due to warming air temperatures and will cause decreased seasonal mixing of inland lakes, reducing lake dissolved oxygen levels.

In addition to climate change impacts, the following variability needs to be considered:

- Lake Michigan water levels fluctuate considerably over time (6.2 feet between 2013 and 2020).

Some of the potential impacts the above changes could have on park use and management include:

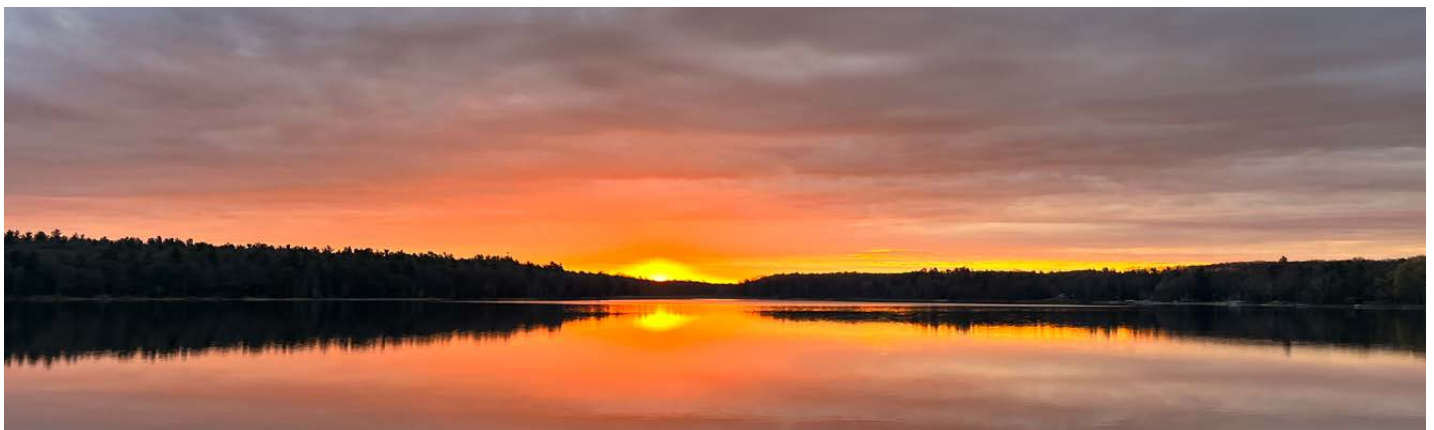
- Extended use season, which could have both benefits in terms of revenue and challenges in terms of staffing.
- Less snow could result in a shortened use season for winter activities, such as snowmobiling and cross-country skiing
- Shoreline/trail erosion
- Flooding due to increased precipitation/high waters, which could cause loss of campsites, re-routing of trails and roads, or other impacts
- More insect pests impacting visitors and vegetation
- Increased frequency and intensity of storms affecting infrastructure, vegetation, and visitor safety
- Higher temperatures affecting visitor comfort, safety, and desire to be close to and access to the water.

A variety of adaptation strategies, approaches and tactics will be considered to address these impacts in both the short- and long-term park management and development decisions.

Approaches include:

- Resistance: Improving defenses against change and disturbance to retain a relatively unchanged condition
- Resilience: Accommodating some degree of change to allow return to prior condition following disturbance
- Transition: Intentionally facilitating change to align a system to new conditions.

Adaptation planning is critical for communities and facilities, including Duck Lake State Park, that encounter risks such as those identified above. Increasing resilience and mitigating hazards will continue to be an important goal for the park management staff and will be considered as part of all action items moving forward. Specifically at Duck Lake State Park, actions will focus on continuing to monitor invasive species, adjusting to shifts in visitor demand as a result of a lengthened warm season, and ensuring the trail system is well-planned and sustainable.



A brilliant orange and pink sunset reflects over Duck Lake



A view of the Lake Michigan shoreline where a spit of sand forms at the channel to Duck Lake

Photo credit: Tyler Leiprandt and Michigan Sky Media LLC.

Chapter Three: Purpose and Significance

3.1 Purpose of Duck Lake State Park

Park purpose statements are based on park legislation, legislative history, special designations and Department of Natural Resources (DNR) policies. These statements reaffirm the reasons for which Duck Lake State Park was included as part of the state park system.

- To be used as a public park, for the purposes of public recreation or the preservation of natural beauty or historic association in accordance with Act 218, Public Acts of 1919, which created the Michigan State Park Commission.
- To preserve and protect Duck Lake State Park's unique natural and cultural resources for current and future generations.
- To provide access to land and water based public recreational opportunities, specifically to provide frontage and a swimming beach on Duck Lake.
- To provide educational and interpretive opportunities for the public that reflect the DNR mission and the unique qualities of Duck Lake State Park.

3.2 Statements of Significance

Each general management plan (GMP) developed by the Michigan DNR Parks and Recreation Division (PRD) is built upon the foundation of the park's significant features that make it distinct from other parks in the state's system. Duck Lake State Park was determined significant due to the following:

Day-Use Park on Two Lakes

Duck Lake State Park is an excellent day-use destination for visitors seeking to immerse themselves in the beauty of both Duck Lake and Lake Michigan. The park's convenient location allows for easy access to the expansive Lake Michigan shoreline and the more protected beach on Duck Lake, providing opportunities for beach and water recreation access.

Undeveloped Natural Beauty

Duck Lake State Park is cherished for its largely undeveloped nature. With its wooded dunes, rolling topography, and natural shoreline, the park boasts stunning and diverse scenery that captivates nature enthusiasts and photographers alike. The mile of undeveloped inland lake shoreline within the park is relatively rare in west Michigan, benefiting land and water wildlife, and contributing to the scenic beauty.

Land and Water Recreational Opportunities

Duck Lake State Park offers a range of recreational options, from swimming in the shallow and warmer waters of Duck Lake, enjoying the shores of Lake Michigan, fishing on Duck Lake and Lake Michigan, to hiking along wooded trails. The park's paddling opportunities are a highlight given Duck Lake's calm waters and clear visibility, making it ideal for paddlers of all levels.

Local Community Asset

Situated close to regional population centers, Duck Lake State Park serves as a destination for day-use outdoor recreation. Its convenient location and quiet atmosphere make it highly valued by the local community, as demonstrated by the many improvement projects undertaken by individuals and groups. Local visitors come to the park frequently for their daily recreation, as well as enjoy gathering with friends and family year after year.

Ecological Significance

Duck Lake State Park plays an important role in preserving natural habitats within a larger mosaic of public lands. It serves as a migratory stopover site and nesting habitat for waterfowl and passerines, including the state listed Cerulean warbler and hooded warbler. The park's oak, pine, and hemlock forest provides a home to a variety of plant and animal species. The relative lack of invasive species is a valued aspect of the park, showcasing high-quality natural landscapes.

Historic and Cultural Significance

Duck Lake State Park bears a rich historical legacy, including evidence of indigenous culture, the former 1840's Mears Sawmill and associated settlement including a cemetery, notable Boy Scout camps, and shipwrecks that comprise an underwater maritime preserve offshore. This historical context adds depth and significance to the park, allowing visitors to connect with the area's heritage.

Waterfowl Hunting

Duck Lake State Park is a favored destination for hunting enthusiasts, particularly those interested in waterfowl hunting. The park's location and its status as a migratory pathway make it an ideal spot for those seeking a rewarding hunting experience.



A young child in snow gear looks out into the forest, where the trees and ground are covered in fresh snow. Photo Credit: Morgan Liskey

3.3 Public Affirmation of Significance

Stakeholder and public input assisted the planning team with affirming the significant features and opportunities at Duck Lake State Park. The feedback from the online survey confirmed that the beautiful natural setting, access to two lakes, and day-use recreation amenities are significant aspects of the park. Select comments from survey respondents relating to those significant features are provided below.

"We like visiting in the park because you can go hiking on the trails. Also, it's just family friendly, and you have the waves of lake Michigan or can let your kids swim in the canal area. It's also just a beautiful spot!"

"It is close to my home. Have enjoyed the natural beauty for 40 years. I love that it is rustic and kept natural."

"I have spent every summer since 1984 at Duck Lake. It holds a special place in my heart and I'm

glad that over those years it still feels the same."

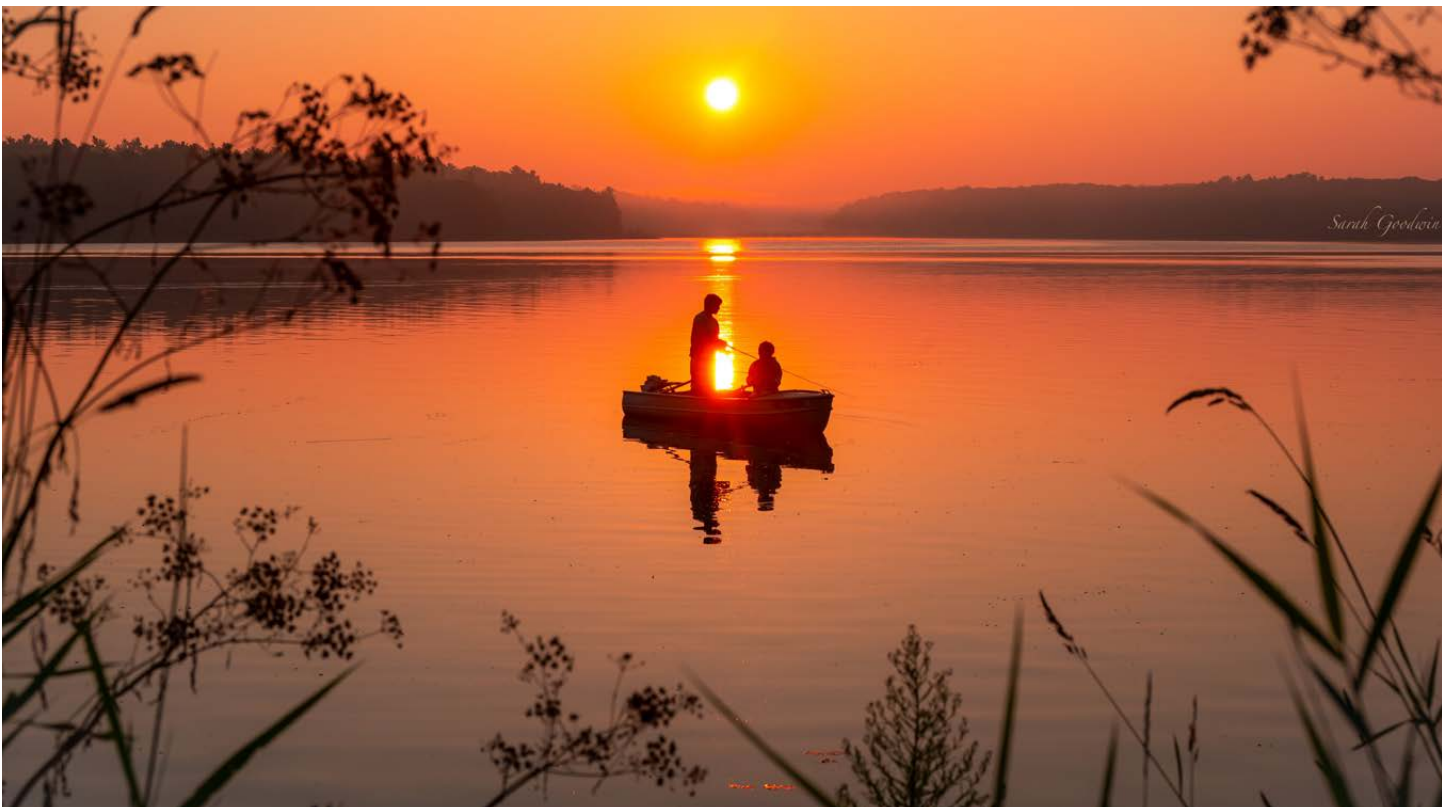
"We vacation to the lake and bring many friends and family to enjoy this natural landscape gem, which is clean and not overrun with crowds."

"It's so beautiful no matter the season. During the winter it is peaceful and quiet, in spring it stirs with life, in summer it's a popular beach goes paradise, and in fall, that one tree that's barely hanging onto the edge of the road remains standing strong against Lake Michigan's powerful wind and waves."

"It's just down the road from our home and we love it for hiking, swimming, family reunions at the picnic shelter and paddling on the lake."

"Good duck hunting, outlet creek to Lake Michigan is great in summer."

"[I choose to visit Duck Lake State Park to] hunt, fish, watch sunsets, swim, walk the dog, use Pavilion for family reunions."



A bright orange sunset frames the silhouette of two anglers in a fishing boat on Duck Lake. Photo Credit: Sarah Goodwin

3.4 Community Connection

Even before Duck Lake was a state park, it was enjoyed by local residents as a Boy Scout camp and a beautiful undeveloped location for scenic walks. Duck Lake State Park is beloved by the local community, who visit frequently due to its natural setting, easy access to Lake Michigan and Duck Lake, and wealth of day-use recreation opportunities. The park's picnic shelter is popular for community gatherings and family reunions. Many local visitors have been coming to the park for decades and cherish the tradition of returning year after year, or in some cases, daily. The local community is involved in projects that benefit the park, such as White Hall Schools, who have partnered with the park on environmental stewardship projects such as beach cleanup and invasive species control.

During the stakeholder workshop, local visitors commented that they valued the park for its pristine natural resource condition and undeveloped nature. There were several groups that could partner with the park on future initiatives, such as the Duck Lake Riparian Association, which currently works with the park as well as the township to clear the channel to Lake Michigan when it's blocked with sand. In addition, the park is near the site of local non-motorized trail initiatives through groups such as the Friends of Fruitland Township Trails, which could help to establish trails that connect to the park in the future.



A couple dressed in their wedding attire walks hand in hand down a road through the forest



A view of Duck Lake as seen from within the picnic shelter

Management Zone Progression Table

MANAGEMENT ZONE	NATURAL RESOURCE IMPACTS	VISITOR USE	DEVELOPMENT LEVEL
ECOLOGICALLY SENSITIVE	None	Restricted	None
PRIMITIVE	Very low	Low (dispersed)	Very low
BACKCOUNTRY	Low	Low to moderate	Low
CULTURAL LANDSCAPE	Low to moderate	Moderate	Moderate
NATURAL RESOURCE RECREATION	Moderate	Moderate to high	Moderate
SCENIC	Moderate	Moderate to high	Moderate
HISTORY EDUCATION	Moderate to high	High	Moderate to high
DEVELOPED RECREATION	High	High	High
ADMINISTRATIVE SERVICES	High	High (primarily staff)	High

Chapter Four:

Management Zones

The 20-year management zone plan was developed in keeping with the park's purpose and significance. The primary goal in the development of the management zones is to protect and enhance the park's natural and cultural resources while also supporting outdoor recreation and education opportunities. From a palette of nine management zones, the planning team studied the park and applied zones that best fit distinct areas of the park based on existing and desired future conditions. Management zones describe a variety of activities that may be appropriate within the zone and address the desired future condition for the following categories:

- Natural resources
- Historic/cultural resources
- Recreation opportunities
- Education/interpretation opportunities
- Visitor experience
- Management focus

The resource condition, visitor experience, and level of development vary in each of the nine standard zones, as indicated in the figure above. Duck Lake State Park was divided into the following five standard zones and one overlay:

- Primitive zone
- Backcountry zone
- Natural resource recreation zone

- Developed recreation zone
- Administrative services zone
- Cultural landscape overlay

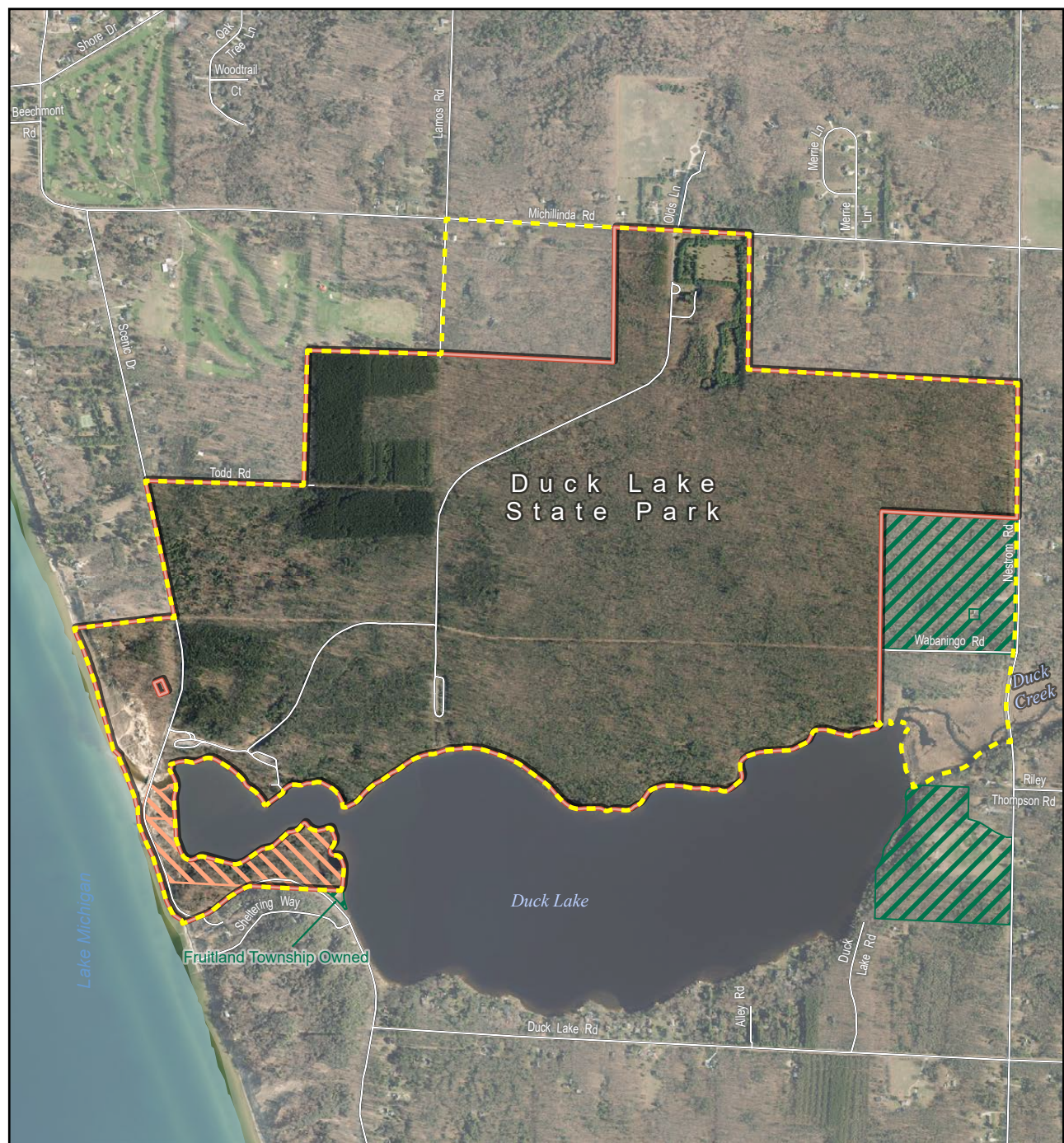
Examples of recreation activities and development that may be allowed in each zone are general and may not necessarily be appropriate or allowed at this location.

4.1 Project Boundary

Project boundaries are geographic lines that help define the state's public lands acquisition and disposal strategy (land strategy). These boundaries contain primarily state ownership, as well as privately owned lands that, should they ever become available for sale, would be a priority for the DNR to pursue acquiring.






The DNR undertook a comprehensive statewide project boundary review in 2020. The GMP planning team reviewed the project boundary for Duck Lake State Park and supports the 2020 project boundary approved by the Natural Resources Commission and the Director of the DNR.

If the land within the project boundary were purchased, it would add approximately 150 acres to the park. The project boundary includes undeveloped acreage that is currently owned by Fruitland Township, land in private ownership fronting Duck Creek in the southeast of the park and land to the north between the state park and Lamos Road.



MICHIGAN DEPARTMENT OF NATURAL RESOURCES

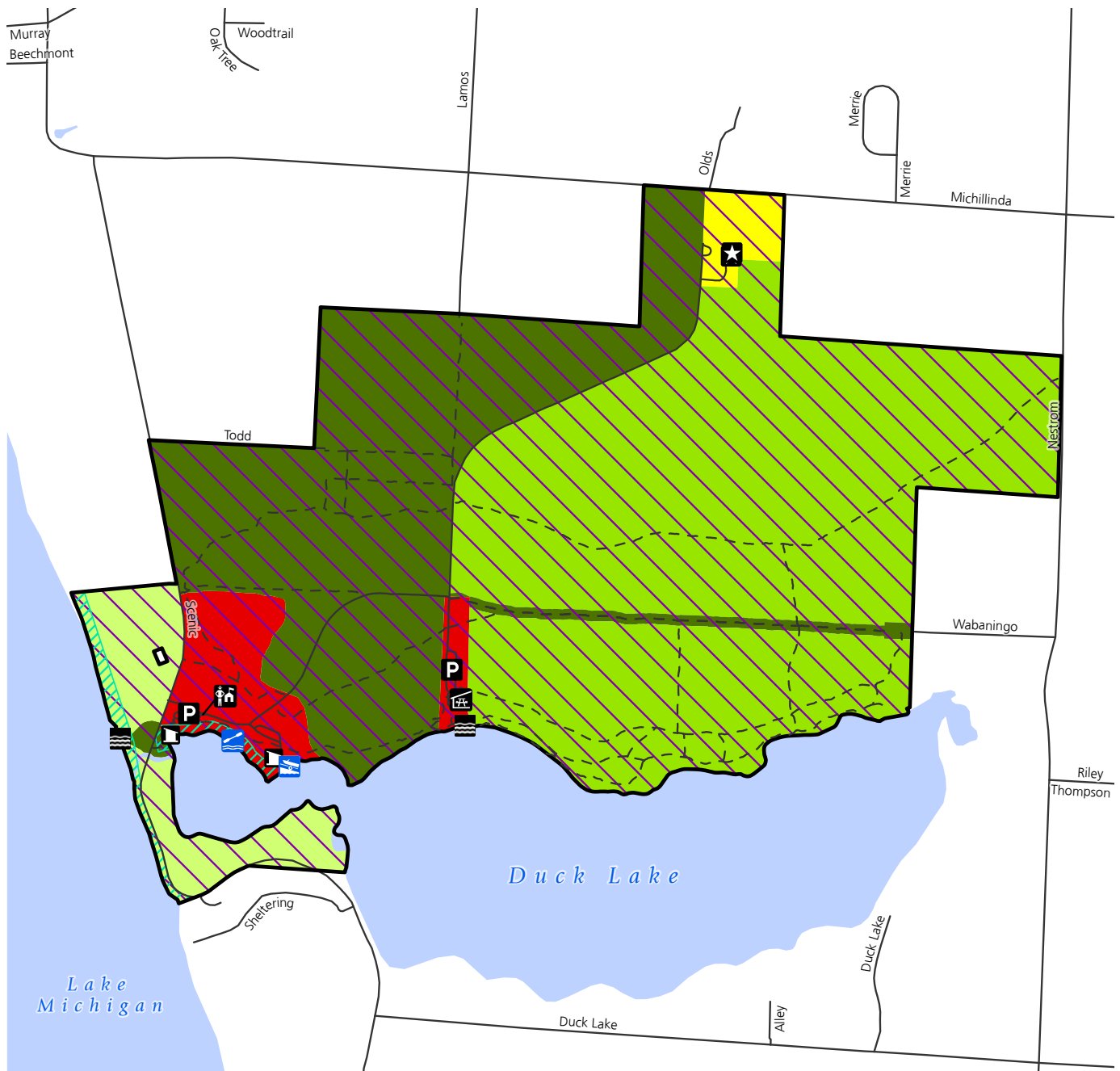
Duck Lake State Park - Park Boundary

-  State Park Boundary
-  NRC 2020 Approved Project Boundary*
-  Road
-  Land Use Restriction
-  Fruitland Township Owned

Updated: 06/14/2023

*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, approved by the Natural Resources Commission in 2020.





DUCK LAKE STATE PARK Management Zones

Data Sources: Michigan CGI Data Library, Michigan Department of Natural Resources

0 500 1,000 Feet

Date: 9/5/2024 Beckett & Raeder

- Duck Lake State Park Boundary
- Roads
- Rivers / Streams
- Lakes
- Trails

- Entrance Booth
- Maintenance Building
- Boating Access
- Vault Toilet
- Parking Lot
- Water Access
- Picnic Shelter
- Carry Down Boating Access

- Primitive
- Backcountry
- Natural Resource Recreation
- Developed Recreation
- Administrative Services
- Scenic Overlay
- Cultural Landscape Overlay

4.2 Primitive Zone

The primary purpose of the Primitive Zone is the protection of natural resources and natural processes. The zone is managed for low-impact recreational experiences in a primitive, natural landscape. Only dispersed, self-reliant, and low-frequency use is allowed. Attaining and maintaining a high-quality natural resource condition dictates the extent to which recreational improvements or uses are allowed. This zone covers about 7% of the park and includes the area along the Lake Michigan shoreline designated as Critical Dunes.

Natural Resources

- Native species and natural processes take precedence over visitor accommodation.
- Native Michigan natural communities/ecosystem components and processes are maintained, restored and protected.
- Human-caused habitat fragmentation is eliminated.
- Non-native species are controlled or eliminated.
- Natural hydrology is maintained or restored.
- Vegetative management is only allowed to restore and maintain natural ecological structure and processes (such as removal of invasive species), and to manage pests and disease.
- Where agricultural fields currently exist, a strategy should be developed to bring these areas into compliance with the intent (nature/character) of the zone.
- New agricultural fields may be allowed but only as a specific and limited phase of an Ecological Restoration Plan or as a critical component of a plan for managing species of greatest conservation need.
- Haying may be used as a short-term vegetation management treatment.
- Prescribed fire may be used to mimic natural disturbance or control invasive species.

Cultural Resources

- Archaeological resources are preserved.
- Ethnographic resources are protected.
- Extant historic structures may be preserved, but more often are removed or allowed to molder in place.

Recreation Opportunities

- Recreation is dispersed.
- Self-reliant, non-mechanized (no bicycle, horse, or motorized use) outdoor activities (e.g., hiking, backpacking, primitive camping, cross-country skiing, hunting/trapping/fishing, nature observation).
- Trail density is low. Trail routes are point to point and not sinuous in design. Trails are single track and natural surface (except as needed to protect the resource), although existing two-tracks may be allowed to remain.

Education Opportunities

- Primarily off-site.
- Interpretive signage is allowed at trail heads and at overlooks.

Visitor Experience

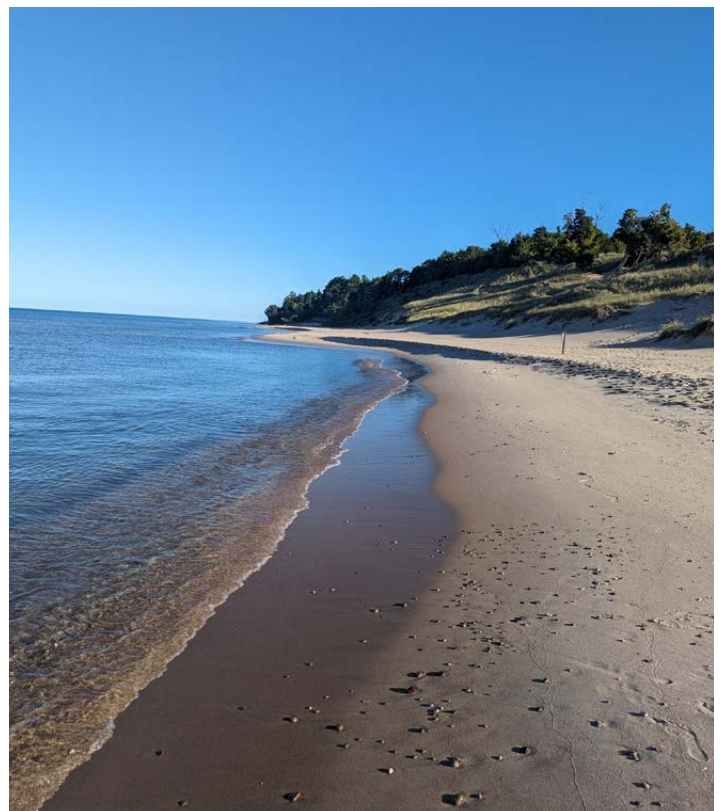
- Low visitor to visitor encounters.
- Visitors are engaged in high solitude, off-trail or trailed, self-reliant outdoor activities.
- High time commitment.
- High challenge and adventure.
- Discovery area with minimal on-site interpretation.
- Low noise tolerance.
- Low interaction with DNR staff.

Management Focus

- Maintain low-impact character of the zone, with emphasis on natural resource quality.

Development

- Very low level for visitor accommodation (e.g., foot trails).
- Site hardening only allowed to protect sensitive resources (e.g., boardwalk).
- Little evidence of human activity



Waves gently wash over the Lake Michigan shoreline

4.3 Backcountry Zone

The character of this zone is natural, with minimal evidence of human impact through recreational use. While the Primitive Zone is highly restrictive for recreational use and human impact, this zone allows for slightly increased use, including bicycle and equestrian use if appropriate, and modifications of the landscape (e.g., trail development) to accommodate that use. This zone covers 53% of the park and includes the wooded areas in the eastern portion of the park, except the area around the headquarters/shop building.

Natural Resources

- Natural resources may be modified slightly to support visitor use, but tolerance for natural resource impacts for visitor accommodations is low.
- Native Michigan natural communities/ ecosystem components and processes are maintained, restored and protected.
- Human-caused habitat fragmentation is minimized.
- Non-native species are controlled or eliminated.
- Natural hydrology is maintained or restored.
- Vegetative management is only allowed to restore and maintain natural ecological structure and processes (such as removal of invasive species), and to manage pests and disease.
- Where agricultural fields currently exist, a strategy should be developed to bring these areas into compliance with the intent (nature/character) of the zone.
- New agricultural fields may be allowed but only as a specific and limited phase of an Ecological Restoration Plan or as a critical component of a plan for managing

species of greatest conservation need.

- Haying may be used as a short- or long-term vegetation management treatment but the goal is native ecosystems.
- Prescribed fire may be used to mimic natural disturbance or control invasive species.

Cultural Resources

- Archaeological resources are preserved.
- Ethnographic resources protected.
- Extant historic resources are preserved, rehabilitated, removed, or allowed to molder in place.

Recreation Opportunities

- Moderate levels of recreation compatible with the natural character of the zone.
- Visitors engaged in non-motorized outdoor activities in diverse land and water natural settings (e.g., hiking, backpacking, backcountry camping, bicycling, horseback riding, canoeing, kayaking, fishing, hunting/trapping, nature observation, cross-country skiing, and snowshoeing).
- Trails are more point to point than sinuous in design. Trail purpose is viewing and access more than challenge.

Education Opportunities

- Interpretive signage at trail heads, on the trail, and at overlooks is allowed.
- Moderate off-site interpretation.

Visitor Experience

- Moderate visitor to visitor encounters.
- Visitors engaged in non-motorized outdoor activities in diverse land and water natural settings.
- High time commitment.
- Moderate challenge and adventure.
- Discovery area with minimal on-site interpretation.
- Low noise tolerance.
- Low interaction with DNR staff.

Management Focus

- Maintain low-impact character of the zone, with emphasis on natural resource quality.

Development

- Low level of development to support visitor access to outdoor activities (e.g., trails, trailhead parking, marked routes, designated backcountry campsites, vault toilets, water pumps) and educational opportunities.
- Development shall be unobtrusive and blend with natural environment.
- Site hardening (e.g., boardwalks, fencing, pedestrian paths) may be necessary to protect sensitive resources.



A park visitor and their dog on a trail in the woods

4.4 Natural Resource Recreation Zone

The Natural Resource Recreation zone supports active recreation conducted in a natural setting with medium to high-density use. There is an emphasis on resource quality over recreation, but moderate to high levels of use may be accommodated. This zone covers 32% of the park and includes the planted pines areas in the western area of the park. This zone also includes the boardwalk from Duck Lake to the Lake Michigan beach and the former Wabaningo Road corridor.

Natural Resources

- Natural resources support visitor activities with only moderate impacts.
- Natural resources are managed or modified to support visitor activities but protected to the degree possible and appear natural.
- Human-caused habitat fragmentation is minimized.
- Non-native species are controlled or eliminated.
- Natural hydrology is maintained or restored.
- This zone will reflect native Michigan natural communities/ecosystems and natural processes, with vegetative management to restore and maintain natural ecological structure and processes (such as removing of invasive species), to address hazard trees, and to manage pests and disease. Vegetation may also be managed to facilitate recreational use and maintaining an aesthetically appealing landscape.
- Where agricultural fields currently exist, a strategy should be developed to bring these areas into compliance with the intent (nature/character) of the zone.
- New agricultural fields may be allowed in the zone but only as a specific and limited phase of an 'Ecological Restoration Plan' or as a critical component of a plan for managing species of greatest conservation need.
- Agricultural haying may be used as a long-term vegetation management treatment.



A view between the straight rows of planted pines covered in snow

Cultural Resources

- Archaeological resources are preserved.
- Ethnographic resources are protected.
- Extant historic resources may be preserved, restored, allowed to molder in place, or adaptively used for operational or educational purposes.

Recreation Opportunities

- Moderate to high levels of recreation compatible with the natural character of the zone.
- Visitors engaged in outdoor activities in diverse land and water natural settings (e.g., hiking, backpacking, backcountry and rustic camping, bicycling, horseback riding, boating, canoeing, kayaking, fishing, hunting/trapping, nature observation, cross-country skiing, snowshoeing and snowmobiling).
- Except in areas with Exemplary Natural Communities, trails may be sinuous to provide for recreational challenge. Multi-use linear trails may be permitted in this zone.

Education Opportunities

- Interpretive signage may be provided at trail heads, on the trail, at overlooks and in campgrounds.

Visitor Experience

- Moderate to high visitor to visitor encounters accommodated.
- Visitors engaged in outdoor activities in diverse land and water natural settings for recreation and education.
- Variable time commitment.
- Variable challenge and adventure.
- Moderate noise tolerance.
- Moderate interaction with DNR staff.
- Moderate accessibility.

Management Focus

- Maintain use of zone in accordance with PRD's mission.
- Public safety.
- Protection of resources.

Development

- Moderate level of development of facilities for support of visitor activities (e.g., vault toilets, concrete/asphalt/gravel walkways and parking, trails, benches, picnic tables, rustic campsites, rustic cabins and shelters) for recreation and educational opportunities.
- Site hardening (e.g., boardwalks, fencing, surfaced pedestrian paths) as necessary to protect sensitive resources and provide accessibility.

4.5 Developed Recreation Zone

The Developed Recreation Zone supports 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. This zone is approximately 6% of the park and includes the boat launch, parking areas, picnic shelter, and beach area on Duck Lake. The zone is expanded north of the current parking lots to allow for future expansion.

Natural Resources

- Natural resources may be actively managed and modified to support visitor activities.
- Water quality is maintained or restored.
- Vegetative management will address hazard trees, invasive species, and pests and disease, and will also be allowed to facilitate development, recreational use, and to maintain an aesthetically appealing landscape. Native vegetation is still emphasized. PRD's tree planting standards should be followed in this zone.

Cultural Resources

- Archaeological resources are preserved.
- Ethnographic resources are protected.
- Extant historic resources may be preserved, restored, or adaptively used to support visitor activities, operational or educational purposes.

Recreation Opportunities

- High levels of recreation activity in a highly structured environment.
- Visitors engaged in activities in diverse natural and modified land and water settings (e.g., hiking, modern and semi-modern camping, bicycling, horseback riding, boating, canoeing, kayaking, fishing, hunting/trapping, cross-country skiing, snowshoeing, snowmobiling, day-use beach, swimming, picnicking, disc golf, and other day-use activities where people congregate).
- Except in areas with Exemplary Natural Communities, trails may be sinuous to provide for recreational challenge. Multi-use linear trails are allowed in this zone.

Education Opportunities

- Interpretive signage may be provided at campgrounds, day-use facilities, boating facilities, registration buildings, trail heads, on the trail, and at overlooks.
- Active programming at campgrounds and other areas where people congregate.

Visitor Experience

- High visitor to visitor encounters accommodated.
- Visitors engaged in activities in diverse land and water settings for recreation and education.

- Variable time commitment.
- Variable challenge and adventure.
- Variable level of exertion.
- High noise tolerance.
- High interaction with DNR staff.
- High accessibility.

Management Focus

- Maintain use of zone in accordance with PRD's mission.
- Management of people.
- Public safety.
- Protection of resources.
- Public accessibility.

Development

- High level of development of facilities for support of visitor activities (e.g., modern restrooms, walkways and parking, trails, benches, picnic tables, picnic shelters, modern and semi-modern campgrounds, modern cabins and shelters) for recreation and educational opportunities.
- Site hardening (e.g., boardwalks, fencing, surfaced pedestrian paths) as necessary to protect sensitive resources and provide accessibility.
- Strive for universal access in all new developments.



The Duck Lake picnic shelter and restroom building

4.6 Administrative Services Zone

This zone encompasses the developed areas required for program administration and operations. Typically, it will include offices, contact stations, maintenance facilities and all related land base required to conduct the business of running a state park or park. This zone covers 13 acres of the park and includes the park headquarters/shop area, with additional area for potential alternative energy generation.

Natural Resources

- Natural resources may be actively managed and modified to support administrative and support activities.
- Vegetative management (primarily tree removal for safety) is allowed.

Cultural Resources

- Cultural resources and structures are preserved, adapted, or rehabilitated to support administrative activities.
- Historic structures should be re-purposed before new construction where possible.
- Non-utilized or non-stabilized structures may be removed.

Recreation Opportunities

- None

Education Opportunities

- Person-to-person contact at park headquarters for general information, both verbally and written (brochures, maps, etc.).
- Informational kiosk.

Visitor Experience

- Business and information only.
- High noise tolerance.
- High accessibility.

Management Focus

- The business of running a park.
- Appropriate facilities for staff, equipment and materials.
- Employee safety.
- Public access to office.

Development

- High level of development of facilities for support of administrative activities (e.g., office space, meeting rooms, employee locker room, employee eating area, shop space, storage space and related)
- Provide maximum level of accessibility for public.



The park maintenance and shop building

4.7 Scenic Overlay

The Scenic Overlay recognizes that there are aesthetic qualities to be preserved and protected in our state park and recreation areas. Examples of this zone include scenic views, such as the overlook escarpment at the Lake of the Clouds in Porcupine Mountains Wilderness State Park, or linear components such as a scenic road or a scenic river. In this park, the Scenic Overlay is applied over the Lake Michigan shoreline and the portion of the Duck Lake shoreline and covers 10.4 acres of the park.

Natural Resources

- Natural resources may be modified slightly to support visitor use and viewing, but tolerance for natural resource impacts is low.
- Human-caused habitat fragmentation is minimized.
- This zone will reflect natural processes, with vegetative management to restore and maintain natural ecological structure and processes (such as removal of invasive species), and to manage pests and disease. Vegetation may also be managed to enhance observation of the views of the zone.

Cultural Resources

- Archaeological resources are preserved.
- Ethnographic resources are protected.
- With the scenic values in mind, extant historic resources may be preserved, restored, allowed to molder in place, or adaptively re-used for operational or educational purposes. Non-historic structures that do not contribute to the Scenic Zone may be removed.

Recreation Opportunities

- Moderate levels of recreation compatible with the purpose of viewing.

Education Opportunities

- Interpretive signage at key viewing points, trail heads, overlooks, and parking areas.
- Moderate off-site interpretation.

Visitor Experience

- High visitor to visitor encounters accommodated.
- Visitors engaged in transit or sightseeing activities by foot, car, bicycle, watercraft, or other conveyance.
- Moderate time commitment.
- Moderate noise tolerance.
- Variable interaction with DNR staff.
- High level of accessibility at vantage points.

Management Focus

- Maintain the quality of the views on which the zone is based.
- Public safety.
- Ensure all activities or developments in this zone are compatible with the overriding purpose of view quality.

Development

- Moderate level of development to support visitor access, transit, interpretive activities, and sightseeing (e.g., roads, trails, parking, restrooms, overlooks, small picnic areas, interpretive media).
- Development blends with the natural and cultural environment.
- Site hardening (e.g., boardwalks, barriers, fencing, surfaced pedestrian paths) to protect sensitive resources and provide accessibility.



Four waterfowl hunters dressed in camouflage are perched behind brush on the shore of Duck Lake

4.8 Cultural Landscape Overlay

This zone addresses the overall cultural setting of a site, including historic structures and ethnographic sites. For example, a location associated with a particular cultural resource, such as an abandoned mine townsite representative of a bygone era, would qualify as a Cultural Landscape Zone. In this park, the Cultural Landscape Zone is used as an overlay (sub-set) of the management zones, and as such, the guidance for the underlying zone will also apply. The cultural landscape zone is applied to the entire park, due to its status as two former Boy Scout camps, site of a historic mill town, and activity by indigenous peoples.

Natural Resources

- Prescriptive description of the underlying zone will apply.

Cultural Resources

- Resources may include historic buildings, structures, and other landscape characteristics and features which represent the evolution of the cultural resource, temporal change, and the continuum of time.
- Cultural resources are preserved or rehabilitated for visitor understanding and/or for compatible adaptive use by DNR or partners.
- Historic structures may be adaptively used for operational uses or educational purposes or preserved simply for their historic value.

Recreation Opportunities

- Visitors engaged in sightseeing, recreational, and educational activities in a cultural setting (e.g., automobile, bicycle, walking, hiking tour), compatible with and sensitive to the setting.
- Recreation opportunities as allowed by the underlying zone designation.

Education Opportunities

- Interpretive signage may be used at trail heads, on the trail, overlooks, and other points of interest.
- Moderate off-site interpretation.

Visitor Experience

- Visitor experience varies in accordance with the underlying zone.

Management Focus

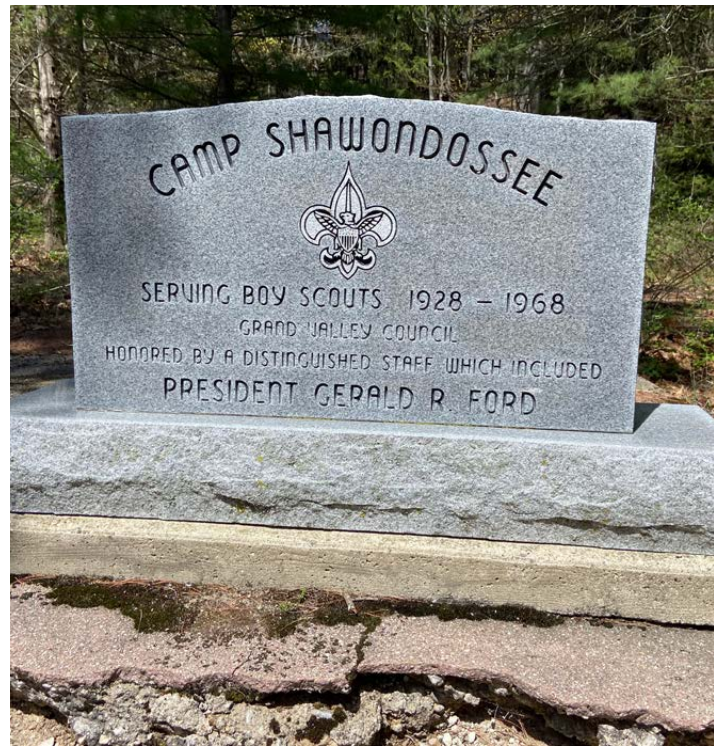
- Maintain cultural character of the zone, and if a sub-set of a resource zone, maintain emphasis on natural resource quality.
- Keep development consistent with the zone.

Development

- Non-historic development and activities that do not conflict with the cultural landscape are tolerated.
- Level of development consistent with the underlying zone.



A wooden sign commemorating "Mears Water and Steam Sawmills First Store 1846"



A monument commemorates Camp Shawondossee, a boy scout camp formerly on the site of Duck Lake. The camp was "honored by a distinguished staff which included President Gerald R. Ford"



Sand-covered stairs leading down to the Lake Michigan beach. Photo Credit: Photo Ambassador Paul Massie

Chapter Five:

Ten-Year Action Plan

5.1 Current Issues and Opportunities Overview

Duck Lake State Park currently faces several key issues that contribute to the need for long-range planning and action. These include:

- Demand for parking exceeds current parking lot capacity for the beach and boat launch.
- The channel from Duck Lake to Lake Michigan can become full of sand following storms, which causes lake levels in Duck Lake to rise and associated issues for lakeside property owners.
- The park currently has no overnight accommodations, but there is an opportunity for low-impact or alternative lodging in the park.
- The current headquarters building has no well or septic system and so has no restroom facilities for staff, creating an operations challenge. The headquarters is also located far from the main park amenities.
- The boardwalk from Duck Lake to Lake Michigan is in disrepair. It was created to offer a safe alternative to crossing the road between the park and the lakeshore, but pedestrians still often cross the road at-grade, which is a safety issue.
- Forest health – the park has been treated for hemlock woolly adelgid

- There are currently no modern restroom facilities at the Lake Michigan beach. There are vault toilets at the parking lot, and they are heavily used.

Any future improvements- for example, electric vehicle (EV) charging stations and solar energy infrastructure- will be considered in the context of efficiency, environmental sustainability and resiliency.

5.2 Duck Lake State Park Ten-Year Action Plan

The following tables outline the actions planned for the next ten years. In the program input column, the bolded party is the program lead. Action items are prioritized 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 3-5 years. Priority Level 3 projects are desired but can be tackled in the next 6-10 years once funding has been identified. Some actions are intended to continue throughout the plan timeframe and are an “ongoing” priority. Opinion of probable costs have been developed for each capital outlay action goal identified (see Appendix C), and these projects will be included in the statewide master project list.

Management and Operations

The following action items relate to the management and operations of the park.

ITEM	PRIORITY	MANAGEMENT ZONE	PROGRAM INPUT FROM
Seek alternative energy solutions for all current and proposed facilities to work towards energy independence at the park	Ongoing	All	Regional Planner Park Manager PRD Business Analyst
Continue to explore land acquisition within the Project Boundary.	Ongoing	All	Park Manager Lands Liaison
Review all proposed earthwork activities for potential impact to cultural resources.	Ongoing	All	Park Manager Field Planner Stewardship
Continue to work proactively to develop and implement measures to prevent, detect and control invasive species, including treatment to protect against hemlock woolly adelgid	Ongoing	All	Stewardship Park Manager
Consider education programming at the park as part of the Nature Awaits program for fourth grade students.	1	All	Park Interpreter Marketing and Outreach Park Manager
Evaluate boating access site use levels, types of boat, and traffic flow to identify if any modifications are needed, considering alternative locations as appropriate.	1	Developed Recreation	Park Manager Regional Planner
Complete a Natural Resources Stewardship Plan for the park, identifying targets for conservation and related natural resource management strategies, including invasive species management.	2	All	Stewardship Ecologist Park Manager District Supervisor Wildlife Division
Analyze the existing trail system and make any improvements to the routing and wayfinding signage as necessary.	2	All	Park Manager
Work with the township to consider appropriate access to and protection of the cemetery.	2	Primitive	Park Manager Stewardship Fruitland Township Archaeologist
Analyze options and make recommendations for improvements to the bathroom facilities at the Lake Michigan day-use beach area.	2	Developed Recreation	Regional Planner Park Manager
Develop an interpretation plan for the park that highlights historic and natural resources, considering digital media.	3	All	Engagement and Innovation Specialist Park Manager Marketing and Outreach Michigan History Center Stewardship

Infrastructure & Development: Capital Outlay

The following actions are larger projects that require the use of capital outlay funds.

ITEM	PRIORITY	MANAGEMENT ZONE	PROGRAM INPUT FROM
Analyze the options for improvements to the park headquarters by either adding a well and septic system to the existing headquarters building to enable the addition of a restroom and expansion for the office/breakroom area, or consider an alternate location for a new headquarters building.	1	Administrative Services Developed Recreation	Regional Planner Park Manager
Implement the improvements to the park headquarters building or construct a new headquarters building at an alternate location.	2	Administrative Services Developed Recreation	Regional Planner Park Manager
Replace the contact station.	2	Developed Recreation	Regional Planner Park Manager
Repair and replace the boardwalk to the Lake Michigan beach and consider ways to discourage pedestrian crossing of Lakeshore Drive.	2	Developed Recreation Natural Resource Recreation	Regional Planner Park Manager Muskegon County Road Commission
Develop an accessible kayak launch on the Duck Lake shoreline.	2	Developed Recreation	Regional Planner Park Manager
Create a trail loop compliant with the Americans with Disabilities Act.	3	Developed Recreation Natural Resource Recreation	Regional Planner Park Manager
Design and implement accessibility improvements at the Duck Lake beach and picnic area.	3	Developed Recreation	Regional Planner Park Manager
Design and construct an expansion to the Lake Michigan beach day-use parking lot to address parking concerns in coordination with the county road commission.	3	Developed Recreation	Regional Planner Park Manager County Road Commission
Perform a Phase 1 archaeological survey in the area of the parking lot expansion.	3	Developed Recreation	Regional Planner Park Manager Archaeologist

Infrastructure & Development: Small Projects

The following action items could be funded through the Small Projects funding source.

ITEM	PRIORITY	MANAGEMENT ZONE	PROGRAM INPUT FROM
Develop a small trailhead parking lot at the Wabaningo Road entry.	2	Natural Resource Recreation	Regional Planner Park Manager

Partner Projects

The following action items could be completed with the assistance of a partner organization.

ITEM	PRIORITY	MANAGEMENT ZONE	PROGRAM INPUT FROM
Continue to work with the Duck Lake Association and Township to re-open the channel to Lake Michigan when blocked with sand. Reserach alternative long-term solutions.	Ongoing	Natural Resource Recreation	Park Manager Duck Lake Association Fruitland Township
Continue to work with external entities to support regional trail and connector trail initiatives as they may impact the park.	Ongoing	All	Park Manager Regional Planner Trails Specialist Regional Recreation Partners



Three turkeys strut through the grass. Photo credit: Tyler Leiprandt and Michigan Sky Media LLC



The sunset shines over Lake Michigan and the sand dunes along the lakeshore
Photo credit: Photo Ambassador Sarah Goodwin

Chapter Six:

Implementation Strategy

This chapter of the general management plan (GMP) provides guidance for implementation of the action plan 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.

All proposed changes in the park should be reviewed to ensure they are in compliance with the approved Management Zones.

6.1 Implementation Toolbox

The following is a list of items to consider when reviewing and prioritizing the implementation of action items 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 items.
- Follow-up regularly on progress for action items that are not the primary responsibility of the Unit Supervisor with the responsible program position.

Funding

- Estimated costs for capital outlay projects are included in the Opinion of Probable costs section. These costs should be refined and adjusted by the Regional Field Planner as designs and studies are completed.
- Identify potential funding sources for each project/task. Liaise with PRD grants coordinator as appropriate.
- Align potential funding sources with the annual capital outlay funding requests.
- Request District Small Project funding through the District Supervisor for small projects identified in the 10-year Action Plan.

Scheduling

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

6.2 Documentation of Changes

The Unit Supervisor 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 five-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 it. In reviewing the action plan for changes, documentation should be provided for goals that may become irrelevant or are no longer viable, as well as proposed new action items, 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.



A smiling angler displays the fish caught on Duck Lake

6.3 Documentation of Accomplishments

As action items are completed, the Unit Supervisor 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.

6.4 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 five-year review is made up of the Park Management Plan Administrator, Unit Supervisor, Regional Field Planner and District Supervisor, with other team members included as may be necessary. A Five-Year Review Form will be used to record all changes to the plan within the past five 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 plan, the planning team will complete the Five-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 complete GMP planning process led by the Park Management Plan Administrator. If changes to the action plan only are required, the Phase 2 GMP planning process will be implemented.



A smiling child plays in the shallow waters of Duck Lake

Park Profile

ITEM	DESCRIPTION
AREA (ACRES)	728
COUNTY	Muskegon County
TOWNSHIP	Fruitland Township
LATITUDE	43.341600
LONGITUDE	-86.408360
ADDRESS	4733 N. Scenic Dr., Whitehall, MI 49461
PHONE #	(231) 744-3480



Appendix A:

Supporting Analysis

A.1 Park Overview

Duck Lake State Park is a day-use park located in Muskegon County on the shores of Lake Michigan, featuring a large sand dune and a channel connecting to the inland Duck Lake. The property is composed of open brush, hardwood forests, pine plantations and some open meadows. Activities include swimming and paddle sports, fishing, hiking, cross country skiing and hunting. The park has a 0.5 mile out and back trail, which is paved. Additional 7 miles of natural-surface hiking trails are located on the property. Facilities include a designated sandy beach and boat launch on Duck Lake, a picnic area with a shelter and modern bathrooms, and access to Lake Michigan. Duck Lake is known for its warm water fishery, including bass, crappie and panfish.

Location & Community

Duck Lake State Park is located in West Michigan, seven miles north of Muskegon State Park. The closest metropolitan area is Muskegon to the south, with Grand Rapids approximately 60 miles southeast. The smaller communities of Whitehall and Montague are located on the east end of White Lake, north

of Duck Lake State Park. The park is accessed off N. Scenic Dr, which runs along the Lake Michigan shoreline, about 10 miles west of Highway US-31, the primary north-south route along the lakeshore.

Muskegon County, with its sandy coastline, 20 inland lakes and more than 400 miles of rivers, offers many recreational activities. There are also a number of historic sites and museums in the area, and renowned festivals and events attract many visitors. The county is part of the West Michigan Shoreline Regional Development Commission (WMSRDC) which represents Lake, Mason, Muskegon, Newaygo, and Oceana counties. The WMSRDC is one of several organizations making up the West Michigan Economic Development Region 4.

The nearby city of Whitehall is the closest community to the park. Its economy is strongly linked to tourism, although there are a variety of small business and manufacturing facilities in the city and it is within easy commuting distance of the greater Muskegon area. The town is noted for its marina and the trailhead for the 22-mile William Field Memorial Hart-

Montague State Trail, just north of the White Lake channel.

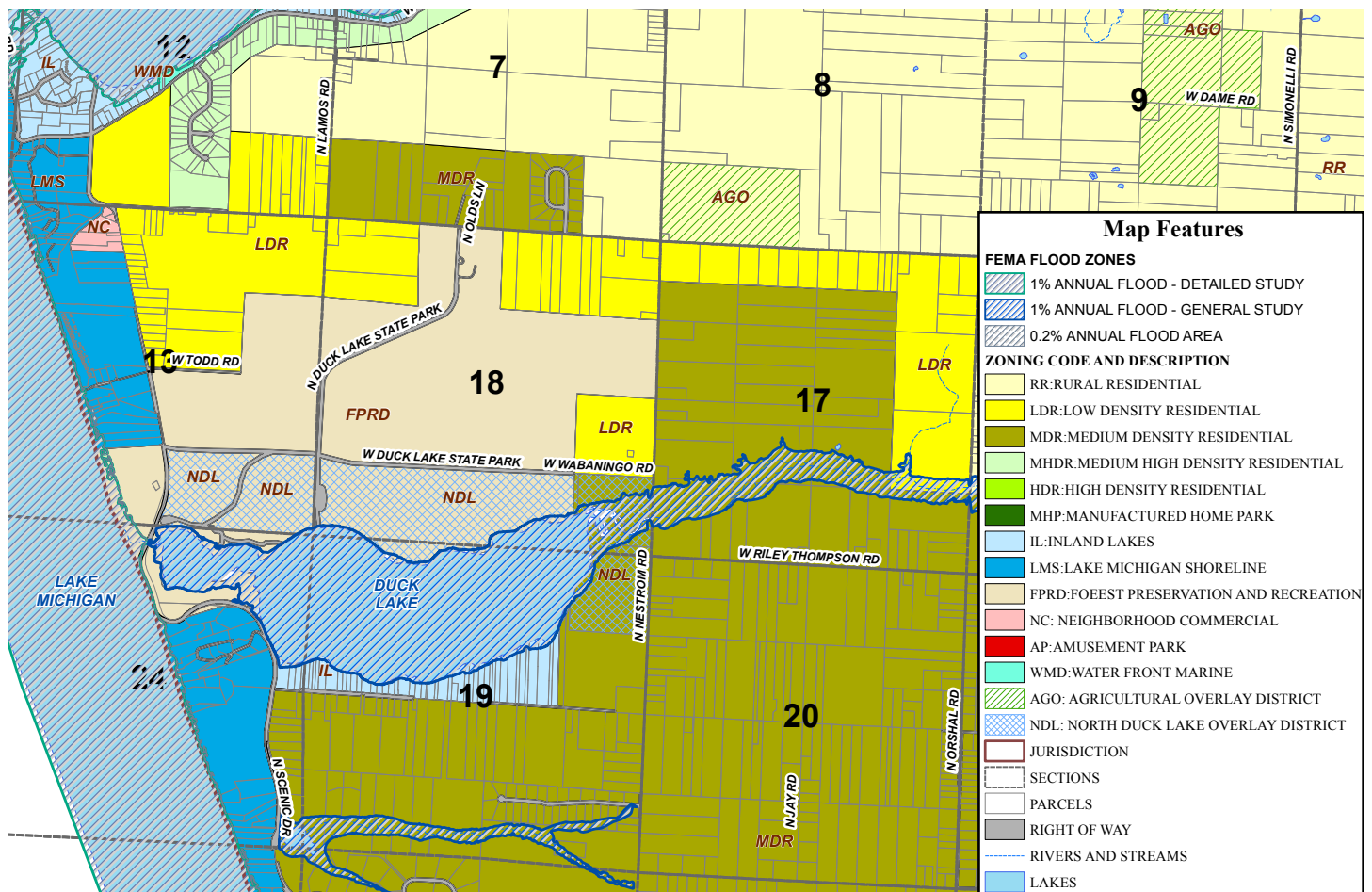
Duck Lake State Park is in Fruitland Township, a primarily rural residential township with less than 6,000 residents. Organized in 1869, it was named “land of fruit” because the soil was thought to be suitable for fruit production.

The zoning of Fruitland Township illustrates the desired land use of the park and surrounding area. Duck Lake State Park is in the Forest Preservation and Recreation Zoning District (FPRD). FPRD is intended to protect lands and water bodies most suitable for public recreation purposes and forest preserves. It supports the state of Michigan in the continuation of Duck Lake State Park as a significant recreational resource. The North Duck Lake Overlay is to recognize, preserve and protect the environmental, aesthetic and hydrologic functions; the public health, safety and welfare and to prevent and control water pollution. Most of the surrounding area is classified as Medium Density or Low Density Residential. The Lake Michigan Shoreline is zoned to regulate and protect the unique natural qualities, environmentally sensitive areas located near Lake Michigan, allowing low-density residential and preserving open space.

A.2 Demographics

The key demographic data for Muskegon County, as reported by the US Census Bureau, is illustrated by the following table. In 2020, Muskegon County had an estimated population of 175,824, an 2% increase from 2010. The age and racial makeup of the county are generally in line with state averages.

The population of Muskegon County is primarily urban, with nearly 70% of the population residing in urbanized areas in 2010. An additional five percent lived in urban clusters. Twenty-five percent of the county population lived in rural areas. In 2010, the US Census Bureau reported that just over 25% of vacant homes (2,004) were vacant for seasonal, recreational, or occasional use. Muskegon County has a lower percentage of people who have a bachelor’s degree (18.6%) than the state (28.1%). Both housing value and cost is lower than the average in Michigan meaning that housing is more affordable. However, the average household income and per capita income are also lower than the state average.



Fruitland Township Zoning Map and Flood Zone Overlay

Geography Quick facts (US Census Bureau)

FACT	MUSKEGON CTY	MICHIGAN
Population per square mile, 2020	348.9	178.0
Land area in square miles, 2020	503.91	56,608.22

Population Quick facts (US Census Bureau)

FACT	MUSKEGON CTY	MICHIGAN
Population Estimates, July 1, 2022, (V2022)	176,565	10,034,113
Population estimates base, April 1, 2020, (V2022)	175,814	10,077,325
Population, percent change- April 1, 2020 (estimates base) to July 1, 2022, (V2022)	0.40%	-0.40%
Population, Census, April 1, 2020	175,824	10,077,331
Population, Census, April 1, 2010	172,188	9,883,640
Persons under 5 years, percent	5.80%	5.50%
Persons under 18 years, percent	22.80%	21.40%
Persons 65 years and over, percent	18.00%	18.10%
Female persons, percent	50.20%	50.40%
White alone, percent	81.00%	79.00%
Black or African American alone, percent	13.80%	14.10%
American Indian and Alaska Native alone, percent	0.90%	0.70%
Asian alone, percent	0.70%	3.40%
Two or More Races, percent	3.50%	2.70%
Hispanic or Latino, percent	6.20%	5.60%
White alone, not Hispanic or Latino, percent	76.00%	74.20%
Veterans, 2017-2021	10,884	516,924
Foreign born persons, percent, 2017-2021	2.00%	6.90%
Housing units, July 1, 2022, (V2022)	75,191	4,611,660
Owner-occupied housing unit rate, 2017-2021	76.80%	72.20%
Median value of owner-occupied housing units, 2017-2021	\$138,700	\$172,100
Language other than English spoken at home, percent of persons age 5 years+, 2017-2021	3.50%	9.90%
Households with a computer, percent, 2017-2021	90.30%	92.40%
Households with a broadband Internet subscription, percent, 2017-2021	83.40%	86.40%
High school graduate or higher, percent of persons age 25 years+, 2017-2021	91.70%	91.60%
Bachelor's degree or higher, percent of persons age 25 years+, 2017-2021	20.50%	30.60%
With a disability, under age 65 years, percent, 2017-2021	10.30%	10.10%
Persons without health insurance, under age 65 years, percent	5.90%	6.00%
In civilian labor force, total, percent of population age 16 years+, 2017-2021	59.30%	61.50%
Median household income (in 2021 dollars), 2017-2021	\$57,047	\$63,202
Per capita income in past 12 months (in 2021 dollars), 2017-2021	\$28,431	\$34,768
Persons in poverty, percent	14.40%	13.10%

A.3 Regional Recreation Resources

The Muskegon County area is rich in outdoor recreation opportunities and cultural resources. The following is a list of the primary recreation resources located within approximately 30 miles of Duck Lake State Park.

Federal Recreation Resources

Huron-Manistee National Forests

- **The Huron-Manistee National Forests** comprise almost one million acres of public land extending across the northern Lower Peninsula of Michigan. The Manistee National Forest covers approximately 12,500 acres in northeast Muskegon County and provides recreation opportunities for visitors, habitat for fish and wildlife, and resources for local industry.

State Recreation Resources

State Parks and Recreation Areas

- **Muskegon State Park:** Located just seven miles south of Duck Lake State Park with shoreline on both Lake Michigan and Muskegon Lake. This state park has many amenities for both the summer and the winter including two modern campgrounds, swimming beach and hiking trails. The Muskegon Luge Adventure Sports Park includes a winter and summer luge track, zipline, ice rink, skating and groomed cross country ski trail and archery.
- **P.J. Hoffmaster State Park:** This park features over three miles of Lake Michigan shoreline, a 297-site modern campground, towering Lake Michigan dunes, and the Gillette Nature Center. Miles of hiking and skiing trails offer stunning views of Lake Michigan. This 1,100-acre park is located 15 miles south of Muskegon.
- **Grand Haven State Park:** 48-acre Lake Michigan shoreline park, offering 174 modern campsites and a popular sandy beach. The park consists entirely of beach sand and provides scenic views of Lake Michigan and the Grand Haven pier and lighthouse.
- **Silver Lake State Park:** Covers almost 3,000-acres along the Lake Michigan shoreline, 30 miles to the north. This area includes both dune country and acres of mature forest. One of the park's biggest draws is the 450-acre off-road vehicle area. Other attractions include a modern campground, beach and picnic facilities and the Little Sable Point Lighthouse.

State Wildlife/Game Areas

- **Muskegon State Game Area:** 15,338 acres in Muskegon and Newago Counties managed to provide quality habitat for mallard and wood duck, white-tailed deer, wild turkey, pileated woodpecker, Karner blue butterfly, and for recreational opportunities associated with these species.
- **Grand Haven State Game Area:** 1,139 acres in Ottawa County along the Grand River. Managed primarily for American bittern, mallard and wood duck, white-tailed

deer. The site includes a Wildlife Refuge which is closed to the public.

State Trails

- **William Field Memorial Hart-Montague Trail State Park:** runs 22 miles through the hills and forests from Hart to Montague. The trail was created from an old railroad in the 1980s by William Field. The Montague trail head is located west of the US-31 Montague exist. The paved path can be used for hiking, biking, cross country skiing, and snowmobiling.
- **Snowmobile Trails:** Snowmobile trail LP19 runs the whole length of the county, extending into neighboring Ottawa, Newago and Oceana counties, with several shorter connecting routes. The trail is maintained by the West Shore Snowmobile Council.
- **ORV Trails:** The Cedar Creek Trail in Muskegon County provides 24 miles of trails in the Huron-Manistee National Forest. The Holton Loop, a 29-mile motorcycle trail, is also located within the Forest in the northern part of the county.
- **Fred Meijer Berry Junction Trail:** built on an abandoned railroad line, this 11.5-mile paved trail connects Muskegon to Whitehall. The trail leads to the Whitehall Pathway at the northern end, which will connect to the Hart Montague Trail.
- **Musketawa Trail:** 25-mile-long, paved, trail through Muskegon and Ottawa Counties. It connects from Fred Meijer Pioneer Trail and Laketon Trail.

Regional Trails

- **US Bicycle Route 35:** 505 miles from Sault Ste. Marie to New Buffalo. The 107-mile Ludington to Holland stretch passes by Duck Lake.
- **Muskegon Lakeshore Trail:** 12-mile long hiking and biking trail along the southern shore of Muskegon Lake from Pere Marquette Beach to North Muskegon. The trail features a combination of paved surface and boardwalks.
- **Laketon Trail:** 4-mile-long connector that links the Muskegon Lakeshore Trail to the Musketawa Trail. It was built on an abandoned rail bed that runs parallel to Laketon Avenue.
- **Scenic Drive Connector Route:** travels through sand dunes and the Lake Michigan shoreline through Muskegon State Park, Pioneer County Park and Duck Lake State Park. This is a road route and does not include a bike lane, sidewalk, or paved shoulder.
- **Lake Michigan Water Trail West:** extends from the Lake Michigan Recreation Area north of Ludington (Mason County) to Buchanan Park south of Grand Haven (Ottawa County). The water trail lies within portions of Mason, Oceana, Muskegon, Kent and Ottawa counties. The White Lake to Muskegon section of the trail is 7.3 miles.

Municipal Recreational Land

Muskegon County offers a range of recreation facilities including several lakeshore parks and campsites.

- **Pioneer Park** (145 acres) provides over 2,000 feet of beach on Lake Michigan between Muskegon and Duck Lake state parks. The park offers camping, swimming, sunbathing, picnicking, tennis, softball, basketball and volleyball.
- **Meinert Park** is located on Lake Michigan, north of Montague. Sitting on 182 acres with rolling dunes, the park provides scenic overlooks with spectacular views of Little Flower Creek and the Lake Michigan shoreline.
- **Heritage Landing** is the focal point for events on Muskegon's waterfront, located along the shorelines of Muskegon Lake and Lake Michigan in downtown Muskegon. The park includes a large children's playground area, a new Tall Ship dock, outdoor concert/event pavilion with picnic and fishing areas.
- **Muskegon County Wastewater Management System Special Wildlife Management Area:** Special cooperator area (11,000 acres) located adjacent to the Muskegon State Game Area, managed for wildlife, waterfowl and special hunt purposes by Muskegon County with assistance from the DNR Wildlife Division.
- **Mosquito Creek Trails** (approx. 500 acres) is located northeast of Muskegon and currently provides four interconnected trail loops open to hiking, trail running, fat biking, showshoeing and cross-country skiing.

The City of Muskegon features 34 parks, predominantly smaller neighborhood or community parks, but also includes the 92-acre McGraft Park in the City's Glenside neighborhood, featuring a disc golf course, sledding hill and amphitheater, and three Lake Michigan beaches.

Fruitland Township manages five parks, including Nestrom Park on the east side of Duck Lake which includes the Township Hall. Marcus Park is a 0.38-acre park on the south side of the Duck Lake channel, adjacent to Duck Lake State Park. Duck Lake Road Park is a 6.32-acre undeveloped wooded site located in the center of the township, adjacent to the 304.6-acre Duck Lake Natural Area. The sites form one large recreational area that provides informal walking paths and opportunities for nature observation.

There are also many smaller parks around White Lake to the north, including the City of Montague's Medbury Park, with 600 feet of frontage on Lake Michigan, just north of the White Lake Channel, and Trailway Campground on the White River between Whitehall and Montague. Duck Creek Natural Area is approximately 310 acres with trails under development.

Water Recreation

- **Hartshorn Municipal Marina:** Located in Downtown Muskegon this is Muskegon Lake's only municipal marina.

It has two basins and a mooring field.

- **Whitehall Municipal Marina:** located on a channel connecting Lake Michigan to the northeast end of White Lake where there are 50 slips. The surrounding area is a park setting which includes many amenities such as a pavilion, gazebo, trail, shopping, restaurants and more.
- **Grand Haven Municipal Marina:** this 68-slip marina is close to restaurants, bars, shopping, and beaches. Within the marina there is a splash pad and mini-golf course.

Private Recreation Opportunities

The Muskegon and Whitehall area has a range of private and semi-private recreation and cultural activities to interest residents and visitors.

- Michigan's Adventure, located between Muskegon and Whitehall, is Michigan's largest amusement and water park, featuring over 60 rides and attractions including the world-class wooden roller coaster, Shivering Timbers.
- Muskegon has a large variety of charters, fishing charters, boat/kayak rentals as well as marinas and yacht clubs. Muskegon Lake is home to 10 marinas and over 3000 boat slips.
- White Lake offers over 10 marinas, yacht clubs, and landings. Businesses offer kayak, paddle board, boat, and bike rentals, as well as fishing charters.
- Golfing: Muskegon County boasts over 15 traditional golf courses, as well as mini golf and disc golf. The White Lake Golf Club is located adjacent to the northwest corner of the Duck Lake State Park.
- Camping/Lodging: Many private campgrounds and resorts can be found in the surrounding areas, as well as hotel and lodging facilities in the cities of Whitehall and Muskegon.
- Owasippe Scout Reservation in Twin Lake, approx. 15 miles northeast of Duck Lake State Park, offers 75 miles of trails for public use through a daily or seasonal vehicle pass, with some scheduled closures throughout the year.
- Blue Lake Fine Arts Camp is a summer school of the arts located on a 1,600 acres campus in the Manistee National Forest, offering fine arts education for all ages.
- Lake Express offers ferry service running between Muskegon and Milwaukee, Wisconsin. It crosses Lake Michigan in 2.5 hours, four times daily, during the spring and summer schedule, and 6 crossings daily during the height of summer travel season.

Nature Preserves

- Muskegon Lake Nature Preserve, located in North Muskegon, features trails and a Riverwalk on an old dump site.
- Anderson Woods Nature Preserve features a two-mile-long trail in Whitehall on 76 acres of land. This forest is an important stopover for migratory birds. The area is owned by The Land Conservancy of West Michigan.
- Flower Creek Dune Nature Preserve, also owned by

The Land Conservancy of West Michigan, is located on 31 acres in Montague, adjacent to Meinert Park. This preserve protects unspoiled dune habitats along the shoreline. It includes a boardwalk leading to an overlook on Lake Michigan.

Historic Places

- Lighthouses in the area include the White River Light Station south of the White Lake channel, Muskegon South Breakwater Light, Muskegon South Pierhead light and Little Sable Point Light in Silver Lake State Park.
- SS Clipper is the oldest remaining passenger ship on the great lakes. It is now open for tours and is located on Muskegon Lake.
- USS Silversides: located on the channel to Muskegon Lake, the vessel (the first US Navy submarine to be named a USS Silverside) is now a museum.
- Lakeshore Museum Center is a collection of five historic structures, including the Hackley and Hume Historic Site. The Charles Hackley House in Muskegon is an impressive example of Queen Anne architecture. Home to one of Muskegon County's most prominent lumber barons, the home, built between 1887 and 1889, is open to the public.

A.4 History of Duck Lake State Park

History of the Region

Anishinaabe people lived and hunted in the area that is now known as Muskegon County for thousands of years. The name "Muskegon" is derived from the Ottawa term "Masquigon" meaning "marshy river" or "swamp." The Masquigon River is identified on French maps dating from the late seventeenth century, suggesting that the French explorers had reached the western coast of Michigan by that time. A small tribe of Ottawa was known to live around Duck Lake, which they called "Jibshi Sagagan," an area of plentiful natural resources.

The following information on the early settlers of Duck Lake was obtained from a presentation titled "Duck Lake Memories: The Early Years" by David Pequet, President of the Duck Lake Riparian Owners Association (2016) and from the Duck Creek Watershed Management Plan, 2012.

The first known European to settle in the Duck Creek area was Joseph LaFromboise in the late 1700s. LaFromboise, who was part of the John Jacob Astor Fur Company, was given a land grant by Astor to build a trading post by Duck Lake. This cabin was one of 20 trading stations established by the Astor regime as part of the "Fur Claim," which stretched from the Kalamazoo River to Grand Traverse Bay. After the death of LaFromboise, his wife, Madeline, reportedly carried on the fur trade business. She was one of the most prominent early businesswomen of Michigan, elected to the Michigan

Women's Hall of Fame in 1984.

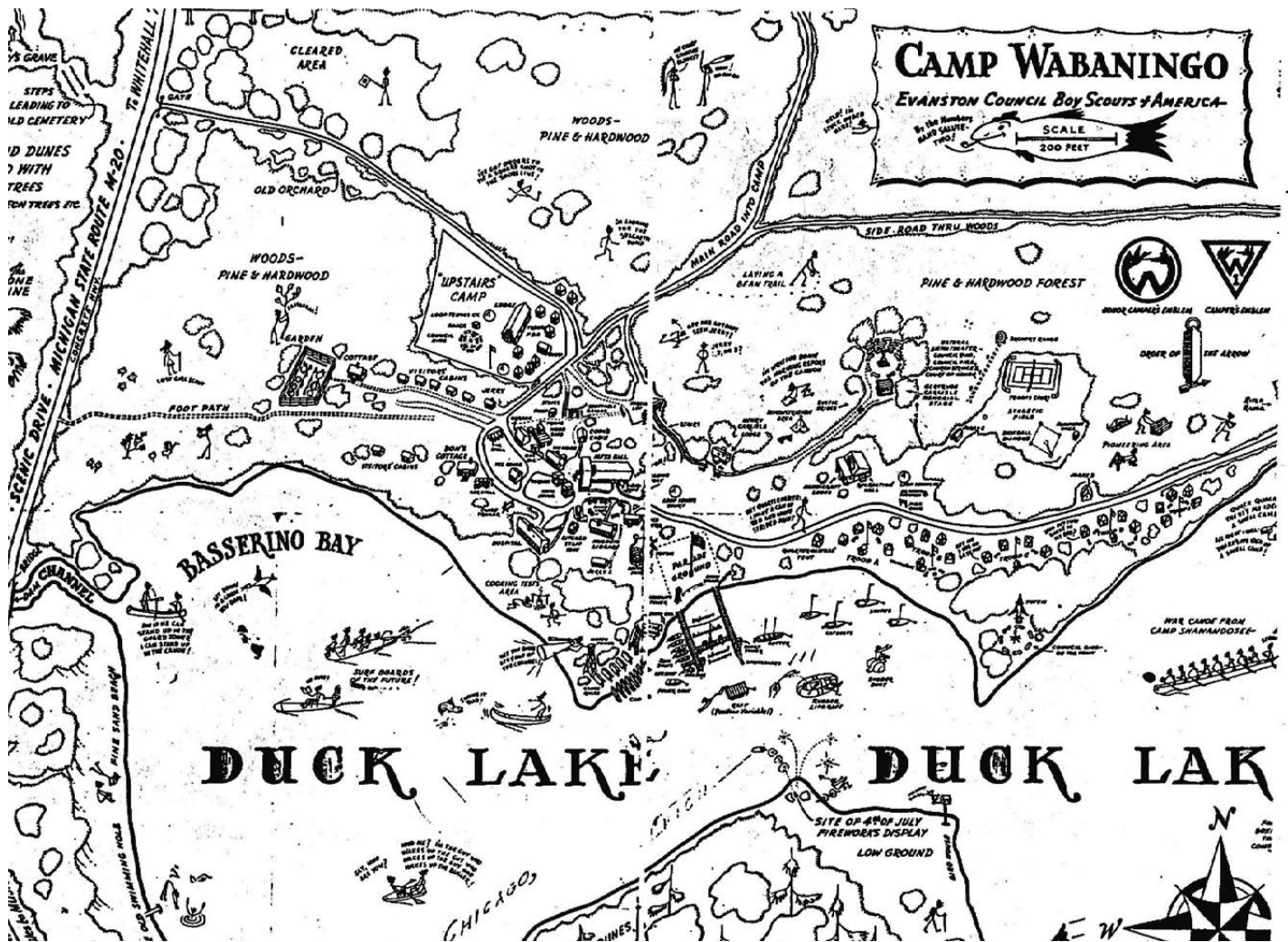
In the 1840s, the start of the lumber industry marked the beginning of a community around Duck Lake. Charles Mears purchased property at the mouth of Duck Creek, where he built a lumber camp called The Middle House. Mears constructed a water mill on top of the dam that held back Duck Lake and later a steam-powered mill. The small village of Cork Point was established around these sawmills, including a boarding house, store, post office and blacksmith shop. This became a center of activity for the surrounding areas with the store providing for both settlers and Native Americans. Mears purchased thousands of acres of timber lands, 2,000 of which were surrounding Duck Lake. He built a pier at the mouth of Duck Lake on Lake Michigan to transport lumber to Chicago and supplies back to West Michigan. By the late 1800s, most of the white pines had been removed in the area and the lumber industry moved on farther inland and north.

With the end of the lumbering era came a rise in tourism, agriculture and other industries. In the early 1900s the Duck Lake area became a tourist destination, boasting boating, bathing and fishing. Hotels, cottages and campgrounds targeted visitors from all over Michigan, Indiana and Illinois, including Chicago residents who would arrive by boat to vacation in the summer. Several resorts were developed on the south shores and east of Duck Lake. The resorts waned in popularity as the spread of the automobile made other destinations more accessible.

The progression of the area was assisted by the development of the West Michigan Pike in the early 1900s. This was a project to build a highway from the Indiana state line to Mackinac following the Lake Michigan shoreline. The construction of Scenic Drive by the Muskegon County Road Commission, located just off the West Michigan Pike along the lakeshore from North Muskegon to Whitehall, was completed in 1927, with the spectacular scenic views drawing auto tourists through what is now Duck Lake State Park.

History of Duck Lake State Park

In 1920, the Evanston Council of Boy Scouts of America bought 100 acres of land on the northwest side of Duck Lake, which included the channel to Lake Michigan and several hundred feet of Lake Michigan shoreline. They established Camp Wabaningo on the land, named after a Native American chief who camped, hunted and fished the land. The camp had nine campsites, a dining hall, cabins, first aid lodge, recreation building, guest cabin, and trading post. A few years later the Council purchased the adjacent 450 acres north of Duck Lake, selling 250 acres in 1927 to the Grand Valley Council of Boy Scouts who set up Camp Shawondossee at the eastern corner of the lake. Camp Shawondossee, named for the spirit of



Hand-drawn pictorial map of Camp Wabaningo, a former boy scout camp located within the Duck Lake State Park area

the South Wind from the Song of Hiawatha, was attended by President Gerald R. Ford in the summers of 1926 and 1927 and later as a staff member. The camp is memorialized by a stone plaque. The Boy Scouts of America offered the properties for public sale following closure of the camps in 1968 (Shawondossee) and 1969 (Wabaningo). After an attempt to purchase by Fruitland Township was unsuccessful, The Nature Conservancy purchased the land in 1970, holding it pending acquisition by the state.

The State of Michigan purchased both camp properties in 1974, together with 49 acres from Fruitland Township, with a view to developing a state park once funding became available. The camp buildings, which were in a poor state of repair, were torn down. A Duck Lake Advisory Committee Report in 1983 recommended a day-use area on Duck Lake and Lake Michigan, with parking for up to 100 cars, a single launch ramp, trail system and up to 200 both modern and rustic campsites on the property. Later master plans showed more modest rustic and group camping opportunities, although no camping facilities have been developed. The day-

use area facilities were constructed in the mid to late 1980s. Maps of the park from 1989 show the entrance being off Michillinda Road with the contact station and headquarters. This entrance was closed to the public in 2005 when a new entrance was constructed off Lakeshore Drive, but the headquarters remains in that location.

A.5 Land Ownership

Funding Sources

The state acquired the lands encompassed by Duck Lake State Park through a variety of funding sources. Often, conditions attached to the original funding source or other details of the property transaction encumber the future use or disposition of the land.

The funding source map at the end of Appendix A identifies the sources used in acquiring land within Duck Lake State Park. The following outlines in more detail each funding source associated with the park.

Most of the park was purchased from The Nature Conservancy, who held the land for the state, using 50% Federal Land and Water Conservation Fund, matched with 50% Special Legislation funds.

Federal Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) is a federal program administered in Michigan by the Department of Natural Resources on behalf of the National Park Service (NPS). Land purchased using LWCF funding must be used for public outdoor recreation purposes. The required 50% match was provided primarily by Special Legislation funding.

Recreation Bond Fund

At Duck Lake State Park, this fund was used for acquisition of one parcel in the north of the park from Fruitland Township.

Special Legislation

Acquisitions for park purposes through this source are tied to specific funding established by the legislature established under Act 27, P.A. 1944, and Act 50, P.A. 1944. This was primarily used as a matching fund to LWCF for land purchase. Two parcels south of the Duck Lake channel were purchased from Muskegon County and a private landowner in 1980 and 1981 respectively using Special legislation funds alone.

Deed Restrictions

The warranty deed transferring the property from The Nature Conservancy to the state of Michigan has the following restrictions, in perpetuity:

- No parking lot shall be constructed or maintained on the subject property described as follows: (see deed in the appendix)

Easements

The following easements grant access or construction rights on Duck Lake State Park property. The documentation was obtained through the Michigan Land Ownership Tracking System and may not be complete.

- Board of County Road Commissioners, Muskegon County-300 ft of highway construction in 1953.
- Consumers Power Company
 - Electric powerline easement 100 feet w. of land parallel to the highway on the east line of the property (1952)
 - Installation of overhead and underground electric lines (1953).
 - Easement to construct and maintain overhead electric lines or underground electric cables from Scenic Drive to day-use parking area at swimming beach (1987)
 - 30-foot easement to construct and maintain electric distribution line south of Michillinda Road (1989)
- GTE North, Inc. – Installation and maintenance of buried telephone line adjacent to Michillinda Road (1992).
- Muskegon County Road Commission
 - Release of right of way for highway purposes associated with the closure of Wabaningo Road and Todd Road (1984).
 - Right of use and entry for installation, construction and maintenance of a rock revetment for shoreline erosion control (1990)
 - Easement to construct and maintain highway within 20-foot-wide right-of-way either side of the existing 33-foot right-of-way for a distance of 150 feet for Scenic Drive bridge over Duck Creek channel (2003).

Grants

The following Land and Water Conservation Fund grants were used to fund acquisition and development at Duck Lake State Park and have implications on future land management.

Land and Water Conservation Fund Grants

GRANT NUMBER	YEAR	NAME	AMOUNT	DESCRIPTION
26-00496	1973	Duck Lake State Park	\$395,888.37	Acquire 592.55 acres for outdoor recreation (undeveloped beach access and trails)
26-01094	1980	Duck Lake State Park Acquisition	\$76,206.36	Acquire 80 acres for outdoor recreation (undeveloped beach access and trails)
26-01430	1986	Duck Lake Beachhouse	\$120,486.00	Beachhouse with attendant, utilities, walkways, landscaping, dry beach development

A.6 Legal Mandates

For all park general management plans, legal mandates are identified that serve to further guide the development of the general management plan and subsequent action plans. For our planning purposes, the term “Legal Mandates” refers not only to federal and state law, but also the administrative tools of “Policy” and “Directive” of the Natural Resource Commission, the Department, and the Parks and Recreation Division. Examples include Orders of the Director, Park and Recreation Areas State Land Rules and all other laws, commission orders, and rules or directives that apply to the park. Specific to Indian Lake State Park, the following legal mandates have been identified.

Federal Statute

Endangered Species Act, 1973

This Act authorizes the determination and listing of species as endangered and threatened, and prohibits unauthorized taking, possession, sale and transport of endangered species.

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. Projects that receive federal support in any form may be subject to compliance with Section 106 of the NHPA to ensure that impacts on historic properties are considered and that any adverse effects are avoided, minimized or mitigated.

Americans With Disabilities Act Of 1990, As Amended

This federal civil rights legislation prohibits discrimination and guarantees that people with disabilities have the same opportunities to participate in the mainstream of American life. It includes standards for accessible design that sets the minimum requirements for newly designed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities.

State Statute

Natural Resources and Environmental Protection Act (NREPA) and Amendments

SECTION	DESCRIPTION
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 EGLE 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 301 INLAND LAKES AND STREAMS	Requires a permit from the state (EGLE) to undertake certain activities relating to inland lakes and streams, such as dredging, fill, marinas, structures, alteration of flow, etc.
PA 451 OF 1994, PART 303 WETLANDS PROTECTION	Requires a permit from the state (EGLE) 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 353 SAND DUNE PROTECTION AND MANAGEMENT	The law defines a "critical dune area" as a geographic area designated in the "atlas of critical dune areas" dated February 1989 that was prepared by the department of natural resources. Sec. 35304. (1) states that: A person shall not initiate a use within a critical dune area unless the person obtains a permit from the local unit of government in which the critical dune area is located or the department (EGLE).
PA 451 OF 1994, PART 419 HUNTING AREA CONTROL	Section 324.41901 establishes the powers of the Department to establish safety zones for hunting.

SECTION	DESCRIPTION
PA 451 OF 1994, PART 741 STATE PARK SYSTEM	The department shall create, maintain, operate, promote, and make available for public use and enjoyment a system of state parks to preserve and protect Michigan's significant natural resources and areas of natural beauty or historic significance, to provide open space for public recreation, and to provide an opportunity to understand Michigan's natural resources and the need to protect and manage those resources.
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

SECTION	DESCRIPTION
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.

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.

History: Eff. Mar 31, 1989; Am. 2, 2021, Eff. Mar. 12, 2021.

ORDERS

The following Orders apply to Duck Lake State Park.

Land Use Orders of the Director

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:

(20) Duck lake SP, Muskegon county.

Wildlife Conservation Orders

Wildlife is owned by all the people of the state of Michigan, and protection is administered and managed by the Michigan DNR. Hunting and trapping regulations including methods of take, bag limits, license quotas, and season dates are established by the Natural Resources Commission (NRC) and are described in the Wildlife Conservation Orders.

7.30 Duck lake state park; hunting and trapping allowed.

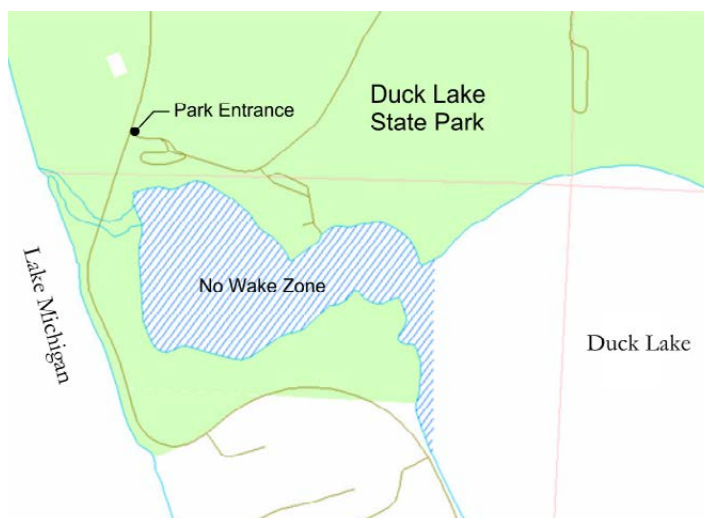
Sec. 7.30 Hunting and trapping shall be allowed during the established seasons on all state-owned lands within the dedicated boundary of Duck lake state park in sections 18 and 19, T11N R17W, and sections 13 and 24, T11N R18W.

Watercraft Controls

DUCK LAKE, PORTION- R281.761.4- Slow--no wake speed.

On the waters of Duck lake, section 24, town 11 north, range 18 west, sections 18 and 19, town 11 north, range 17 west, township of Fruitland, county of Muskegon, state of Michigan, west of a line beginning at a point on the north shore of Duck lake, 800 feet west of Lamos road and running due south to the opposite shore, no operator of any motorboat shall exceed a slow--no wake speed, which means a very slow speed whereby the wake or wash created by the motorboat would be minimal.

History: Eff. February 16, 1970



A map of the no-wake zone within Duck Lake

A.7 Landscape Context and Natural Resources

A regional landscape ecosystem classification has been developed for Michigan, which distinguishes major landscapes based on macroclimate, physiography, soil and vegetation.

Duck Lake State Park is in the Southern Lake Michigan Lake Plain sub-subsection (VI.3.2). This area consists of glacial lake plain, sand dunes; beech-sugar maple forest, oak-hickory forest, oak savanna, white oak-white pine forest, open sand dune, and coastal plain marsh. Along much of the Lake Michigan shoreline there is a narrow band of steeply sloping sand dunes.

The sub-subsection is underlain by Paleozoic bedrock with overlying glacial drift from 50 to 350 feet thick. The major period of dune formation was during the Nipissing Great Lakes stage, approximately 10,000 to 4,500 years ago. But smaller foredunes formed during more recent times of low-water levels of Lake Michigan. The topography of most of the lacustrine deposits is flat to gently rolling, gradually increasing in elevation from near the lakeshore.

Climate

The proximity to Lake Michigan has a strong influence on the climate in the vicinity of Duck Lake State Park. The lake effect increases cloudiness and snowfall during the fall and winter and moderates temperatures throughout most of the year. The area seldom experiences prolonged periods of hot, humid weather in the summer or extreme cold during the winter. Temperatures rarely exceed 90°F in the summer but temperatures below freezing are often recorded in the winter. Precipitation is generally well distributed throughout the year with an average seasonal snowfall of around 100 inches.

Water Resources

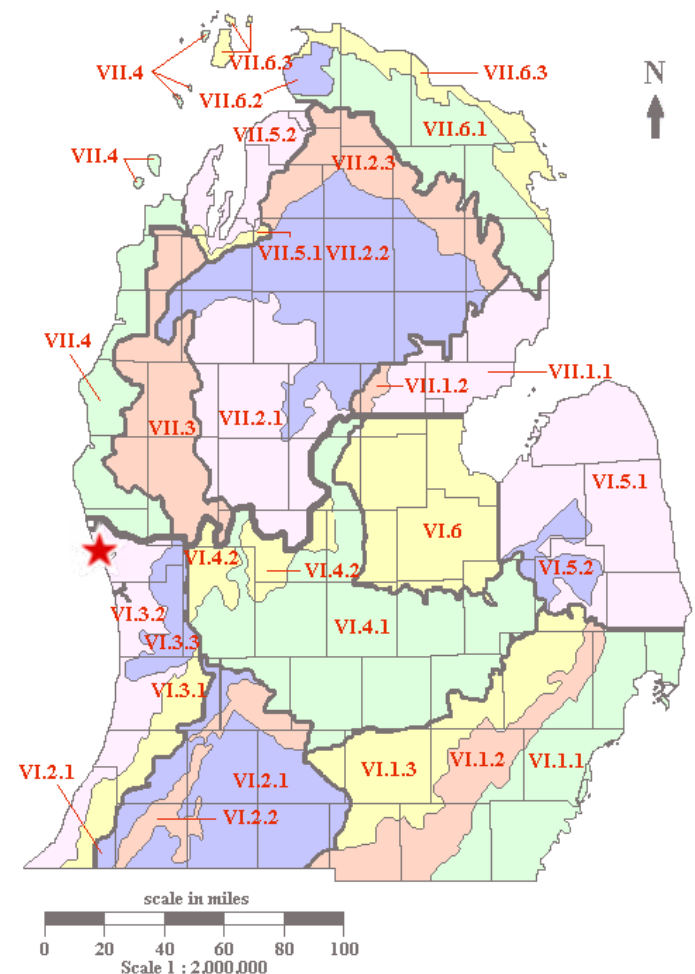
The majority of Duck Lake State Park is in the Duck Creek Watershed, draining into Duck Lake and then emptying into Lake Michigan via a narrow channel at the west end of the lake within the park boundaries. This is a relatively small watershed (approximately 22 square miles) located between the two major river basins of the White River and the Muskegon River. Duck Lake is fed by an inlet from Duck Creek at the east end of the lake and by natural springs. Although Duck Creek watershed is considered high quality, there are some concerns of potential threats due to rising water temperatures impacting the coldwater fishery and sedimentation through stormwater runoff. Some of the land along the Lake Michigan lakeshore drains directly into Lake Michigan. A small portion of the northern part of the park is in the White River Watershed, which empties into Lake Michigan north of the park.

Duck Lake is a drowned river mouth lake with a surface area of 271 acres. It is 70 feet deep at its deepest point. A Cooperative Lakes Monitoring Program data report from 2018 for Duck Lake indicated that two highly invasive species have been found: Eurasian watermilfoil and European frogbit. There are no significant wetlands located within Duck Lake State Park.

The Federal Emergency Management Agency has established a base flood elevation (the flood having a one percent chance of being equaled or exceeded in any given year) of 584.4 feet along the Lake Michigan shoreline. A base flood elevation has not been established for Duck Lake.

Topography

Duck Lake State Park is primarily flat with the exception of the sand dunes along the lakeshore which rise to an elevation of about 650 feet. There is also a steep slope down to Duck Lake, where the land rises from approximately 580 feet at the water's edge to 620 feet over a distance of around 500 feet.



Regional Ecosystems of Michigan, Minnesota and Wisconsin, Dennis A. Albert, 1995.

Soils

Almost the entire park is made up of sandy soils. The predominant soil type is plainfield sand with 0-6%. The typical profile is composed completely of sand which is excessively drained with low run off and low water storage.

Geology and Mineral Resources

Surface sediments at Duck Lake State Park consist of a mix of dune sand and lacustrine sand and gravel deposited along the western shore of Michigan's Lower Peninsula. In the relatively recent geologic past (~4,500 years ago), Duck Creek emptied directly into the post-glacial Nipissing Great Lakes. As lake levels fell from peak Nipissing levels to that of the modern Great Lakes, emergent land and continued deposition of sand formed a natural dam across the outlet of the river channel, creating Duck Lake. Bedrock beneath the glacial and post-glacial sediments consists of Paleozoic sandstones and shales, which were deposited in beach and nearshore marine environments when what is now Michigan was near the equator and covered by a shallow sea.

Sand dunes are mined in other parts of the state including at a site 11 miles south of the park in Muskegon. However, the state no longer issues new mining permits for Critical Dune areas, and the DNR does not lease State-owned property in these zones for mineral exploration and development. There is a private aggregate mining operation located just east of Duck Lake. The Marshall Sandstone, which directly underlies the unconsolidated sediments, currently has limited economic value and is too deeply buried in this area to be commercially developed. There has been limited oil and gas activity in the Duck Lake area. Some minor exploration occurred in the vicinity in the 1950s, but no production of hydrocarbons has occurred within four miles of the park. Two plugged and abandoned oil & gas test wells are located in the park. Park lands outside of any Designated Critical Dune Area are open to mineral leasing but are classified as non-development, which means no surface disturbance related to mineral development activities is allowed.

Early 1800's Vegetation

The General Land Office survey from 1837 indicated that what is today Duck Lake State Park was predominantly forested. Canopy dominants were white pine and white oak forest, and commonly included American beech, sugar maple, Eastern hemlock, and white birch.

Current Vegetation

The Michigan Forest Inventory (MiFI) protocol was used in 2018 to systematically gather baseline information about current tree and shrub canopy and sub-canopy cover within Duck Lake State Park. The park is still mostly forested,

including a 13-acre high quality occurrence of mesic northern forest and about 15 acres of exemplary open dunes. Prevailing ages of canopy oaks were between 53 to 192 years. However, there are scattered, open-grown oaks exceeding 300 years, many of which exhibit old fire scars. Likewise, a number of red and white pines are centuries old. A note-worthy stand is along the north shore of Duck Lake where there was a 212-year-old red pine and the 192-year-old white oak.

The forest canopy composition remains predominantly white and red oak, including white pine, Eastern hemlock, American beech, red maple, and red pine. Prevailing ages of canopy oaks were between 53 to 192 years. The stand with the oldest trees was 25-acres along the north shore of Duck Lake where there was a 212-year-old red pine and the 192-year-old white oak. Understories contain a strong influence of white pine, red maple, and beech growing under the oak and white pine overstory. Stands adjacent to the outlet of Duck Lake contain more American beech, hemlock, maple, and white ash. There, common shrubs are witch-hazel and maple-leaved viburnum, and blueberries. The understory was evaluated in the 13-acre element occurrence where common species were bluegrass (*Poa alsodes*), various woodland sedge species, Canada mayflower, Marginal woodfern, common polypody, partridge-berry, clubmoss, star-flower, wintergreen, beech drops, hair grass (*Avenella flexuosa*), and Canada bluegrass. There were 68 acres of pine plantations containing various amounts of red pine, white pine and Norway Spruce between 56-91 years old.

There were about 15 acres of open dunes across a rolling dune field dominated by marram grass and sand reed grass. Associated plant species included common milkweed, wild wormwood, Equisetum spp, little bluestem, hairy puccoon, Gillman's goldenrod, poison-ivy, and river-bank grape. Invasive species included spotted knapweed, Canada bluegrass, and bladder campion. Scattered trees and shrub cover ranged between 1-5% and included white ash, black locust, and red oak. The understory ranged between 5-15% and included black locust, willows, honeysuckles, balsam poplar, and choke cherry. The low shrub layer was patchy (5-15%) with dominants consisting of common juniper, willows, and Japanese barberry.

Natural Communities

The oak and white pine forest of approximately 600 acres falls within the dry-mesic northern forest in the Michigan's natural communities classification system. There are 20 acres of mesic northern forest in the park and the open dunes span over a half-mile of shoreline. Bird surveys conducted in the 1990s showed that Duck Lake State Park supported more bird species and higher concentrations of migratory birds than the larger Muskegon and Hoffmaster State Parks to the south. Researchers state that this is due to the forest type,

it being adjacent to an outlet and inland shoreline (which greatly expands a bird's options for food and shelter), and the park's concentrated recreational use. They also pointed to the park's geographical location protruding farther west into Lake Michigan which makes it a natural concentration point for migratory birds. The mature this forest community provides critical restover and nesting habitat for migratory bird species such as the Cerulean and hooded warbler.

Rare Flora and Fauna

Cerulean warbler (*Setophaga cerulea*), state listed as threatened, and hooded warbler (*Setophaga citrina*), state listed as special concern, have been recorded in Duck Lake State Park in the past. The cerulean warbler forages, nests and roosts high in the canopy of mature forests, while the hooded warbler prefers the understory of mature forest.

Wildlife

Cerulean and hooded warblers were recorded in Duck Lake State Park during research conducted over a ten-year period during the 1990s and early 2000s. The Cerulean warbler (*Setophaga cerulea*), state listed as threatened, was once abundant in North America but is now one of the fastest declining songbird species. A key tree species for this warbler is oak. Cerulean warblers prefer mesic habitat types and are commonly seen in the canopy of mature forests especially those adjacent to inland water or river corridors. The hooded warbler (*Setophaga citrina*), state listed as a species of special concern, prefers mature forest canopy with a dense understory.



A lady's slipper blooms on a forest floor covered in pine needles

Duck Lake State Park is a large tract of undeveloped land that is home to a diverse array of wildlife. Habitats here such as the rear dune forested areas are home or travel corridors for fox, porcupine, bobcat, and several types of squirrels. Near openings and roadways, groundhog, raccoon, opossum, cotton-tailed rabbit, bats, or even an old coyote den may be seen.

Near shoreline vegetation along waterways there may be muskrat, mink, river otter, beaver, or white-tailed deer coming for a drink. Black bear, though not often seen, may leave traces of their presence in the park in the form of tracks in the sand.

Fisheries

The last recorded DNR fish survey in Duck Lake was conducted in 1971. Fish species caught included: Alewife, Black Bullhead, Black Crappie, Bluegill, Bluntnose Minnow, Bowfin, Brook Silverside, Brown Bullhead, Common Carp, Gizzard Shad, Golden Shiner, Largemouth Bass, Northern Pike, Pumpkinseed, Redhorse spp., Rock Bass, Warmouth, White Sucker, Yellow Bullhead and Yellow Perch. Initial fisheries investigations in 1892 reported Cisco, Walleye and Smallmouth Bass, which have not been reported in Duck Lake since then. Historically, stocking of Rainbow Trout, Steelhead and Tiger Muskie occurred between 1969 and 1976.

Duck Lake currently supports excellent fishing for bluegill, pumpkinseed sunfish, black crappie, largemouth bass, and northern pike. In addition to hosting a boat launch for boat anglers, Duck Lake State Park provides opportunities for anglers who wish to wade or fish from the shoreline, and also for those who wish to fish from small watercraft like canoes or kayaks. Since more than half the shoreline of Duck Lake is publicly owned and undeveloped, Duck Lake offers a very scenic fishing experience for anglers looking to target the above species in their natural habitat.

A.8 Recreational Resources

Paddle Sports/ Boat Rental:

Kayaks are available for rent at Duck Lake State Park seasonally and must remain on Duck Lake.

Fishing

Bass, crappie and panfish are plentiful in Duck Lake. Fly fishing for bluegill is excellent in early summer.

Hiking

A paved 0.5 mile path provides a walkway through the woods and along the Duck Lake shoreline. More than 7 miles of of natural-surface trails provide routes of varying lengths

throughout the park. In total, there are more than 8 miles of hiking trails in the park.

Cross-Country Skiing

Park roadways and open space provide opportunities for cross-country skiing although there are no groomed trails.

Hunting

The park is open for hunting in accordance with established seasons and state hunting regulations.

Pet Friendly Area

Pets are allowed along the entire length of the Lake Michigan shoreline (.5 miles) and Duck Lake. Pets must always be on a 6-foot leash and under an owner's immediate control. All pet waste must be properly disposed of in trash receptacles.

Water Access

A sandy beach on Duck Lake is available and a boardwalk around the end of Duck Lake provides access to Lake Michigan.

Snowmobiling

The park is closed to motor vehicle traffic in the winter, but access by snowmobiles is permitted.

Metal Detecting

Metal detecting is recognized as a legitimate recreation activity when it is conducted in ways that do not damage natural and cultural resources in Michigan state parks nor violate applicable state statutes. A map of areas open to metal detecting can be found online. Visit <https://www.michigan.gov/dnr/places/state-parks/metal-detecting> for more information.

Boat Launch

The launch site has one hard surfaced ramp which provides access to Duck Lake. Launching and retrieving larger boats may be more difficult and is not recommended. A small channel empties into Lake Michigan, but a weir under Scenic Drive blocks boating access to Lake Michigan.

Picnic Area

A wooded area shades the picnic grounds. Fire pits/grills are available.

Picnic Shelter

There is one picnic shelter located in the day-use area that includes picnic tables, charcoal grills and electrical outlets. The

shelter includes a restroom and is located near the parking lot and is about 300 feet from the lake. It can be reserved up to one year in advance. The shelter is used for gatherings including wedding receptions.

Modern Restroom

A modern restroom building is located at the picnic shelter.

Vault Toilet

Vault toilets are located at the Lake Michigan and boat launch parking lots.

A.9 Cultural Resources

According to a survey completed in September 2003 by Lisa Gamero, Parks and Recreation Division Cultural Resource Analyst, and Amy Arnold, State Historic Preservation Office, no resources were identified as being eligible for the National Register of Historic Places in Duck Lake State Park.

The following historical sites are known to have existed in Duck Lake State Park. However, little evidence exists today.

- Duck Lake Cemetery (owned by Fruitland Township) was used from the late 1800s to 1937. No headstones are present.
- The Duck Lake Post was a historical trading post in operation from 1790 to the early 1800s. The site was reported to be in an active dune area and is possibly buried.



A map of shipwrecks in the West Michigan Underwater Preserve

- Mear Mill 2 was a sawmill owned by Charles Mears in the 1840s. This was believed to be located where the old beach and parking lot are.
- Shawondossee and Wabaningo Boy Scout Camp buildings were bulldozed and buried as a safety precaution when the state took ownership of the property. A stone monument documents the site of the Shawondossee camp.
- The channel was dammed in the mid-1800s, which has since been replaced with a new dam.

The West Michigan Underwater Preserve is located along Duck Lake's boundary with Lake Michigan. The preserve was designated to protect area shipwrecks and submerged cultural resources. Historic wreckage occasionally washes up on the beach near Duck Lake. Wreckage and historic artifacts should be reported, but not moved unless imminently threatened.

A.10 Park Use Statistics

Duck Lake State Park is a busy day-use park during the summer months, with the parking area frequently filling up and cars parking along Scenic Drive. Day-use numbers are estimated by car counts multiplied by a standard multiplier representing the number of occupants per vehicle. A significant number of visitors park outside of the park boundary and walk in, and these visitors are not included in the visitor counts. The is

park is closed to vehicles during the snowy winter months but visitors may still snowmobile or hike in. Annual day-use visits were estimated to be 190,000 in 2022.

According to a summer use study conducted by Michigan State University in 2018 (see report in Appendix D), the majority of visitors, 86%, were from Michigan, with others primarily from the neighboring states of Indiana, Ohio and Illinois. Most visitors stay in their own home when visiting, indicating that the park is most frequented by local residents.

Day-use Visits

The following graph illustrates estimated day-use visits per month for 2019 and 2022. 2019 saw slightly higher attendance in the summer months except for August, where there was a large spike in 2022 attendance.

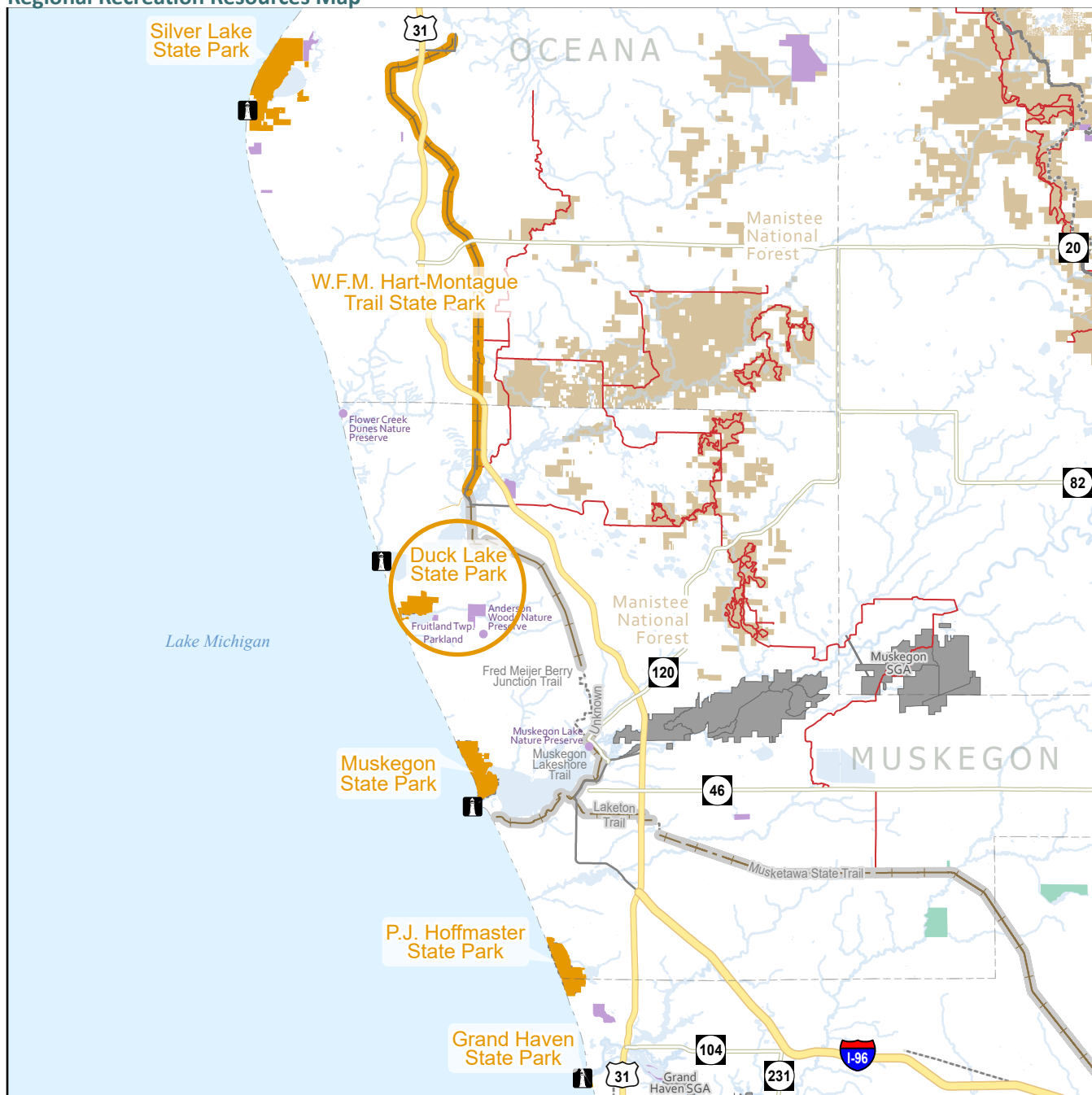
Total shelter rentals in 2022 numbered 45, mostly on weekends in the summer months.



A graph of total day visitors to Duck Lake State Park in 2019 vs 2022.

A.11 Park Resource Maps

Regional Recreation Resources Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



Duck Lake State Park - Regional Recreational Resources

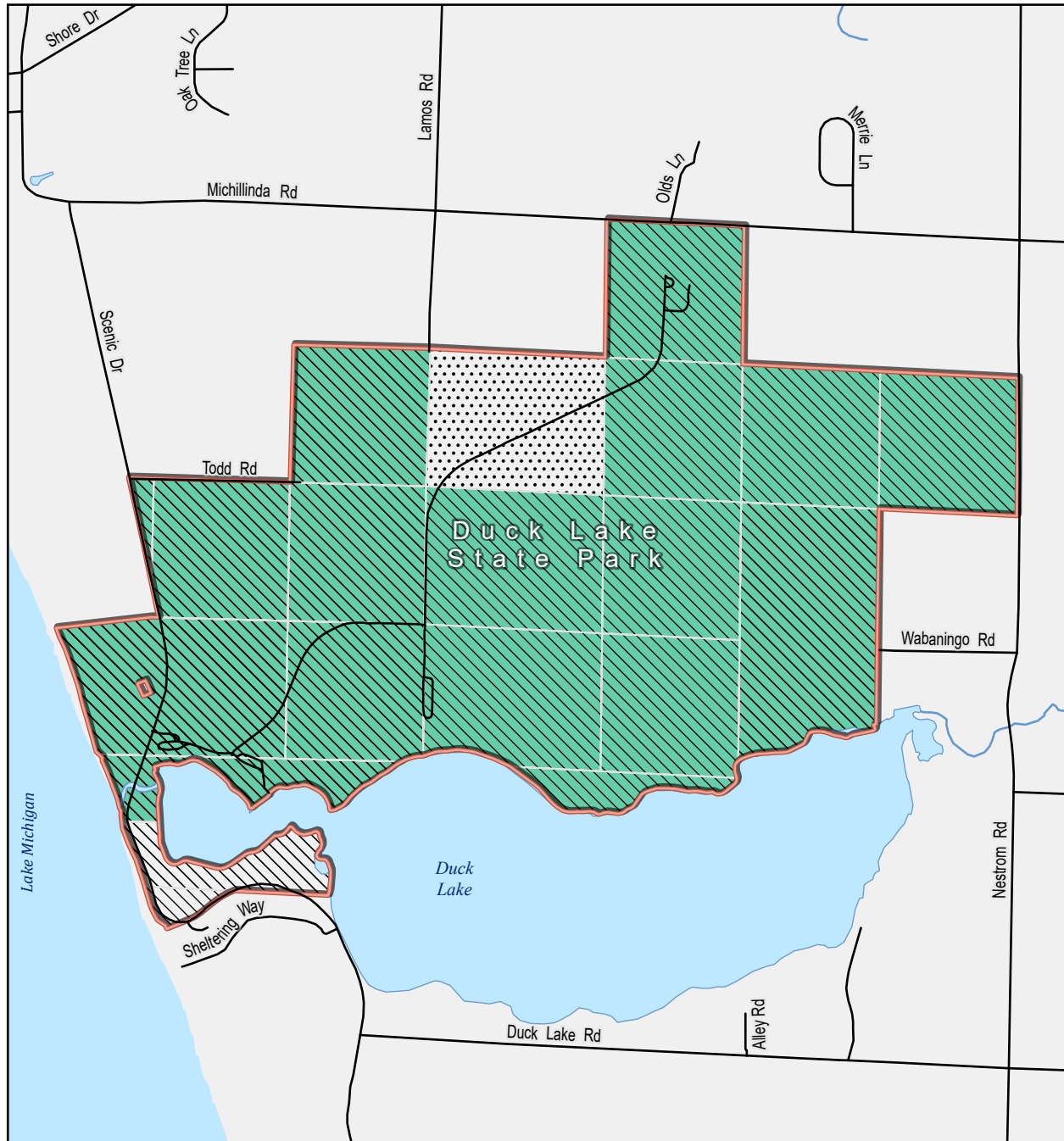


Updated: 07/24/2023

- | | |
|-------------------------------------|--------------------------|
| County Boundary | Other Conservation Lands |
| State Park | Non-motorized Trail |
| State Game/Wildlife Management Area | Motorized Trail |
| Federal Lands | Railtrail |
| Municipal/County Park | |







Funding Sources Map






MICHIGAN DEPARTMENT OF NATURAL RESOURCES



Duck Lake State Park - Funding Sources

-  State Park Boundary
-  Road
-  River/Stream
-  Lake/Pond

Funding Source

-  Federal Land and Water Conservation Fund
-  Recreation Bond Fund
-  Special Legislation



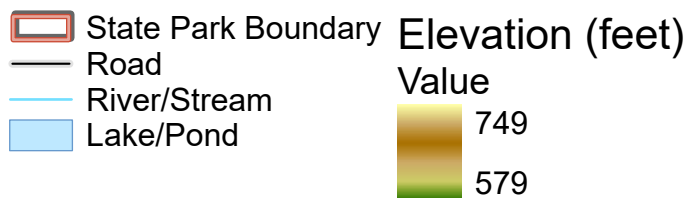
Updated: 08/09/2023

Topography Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES

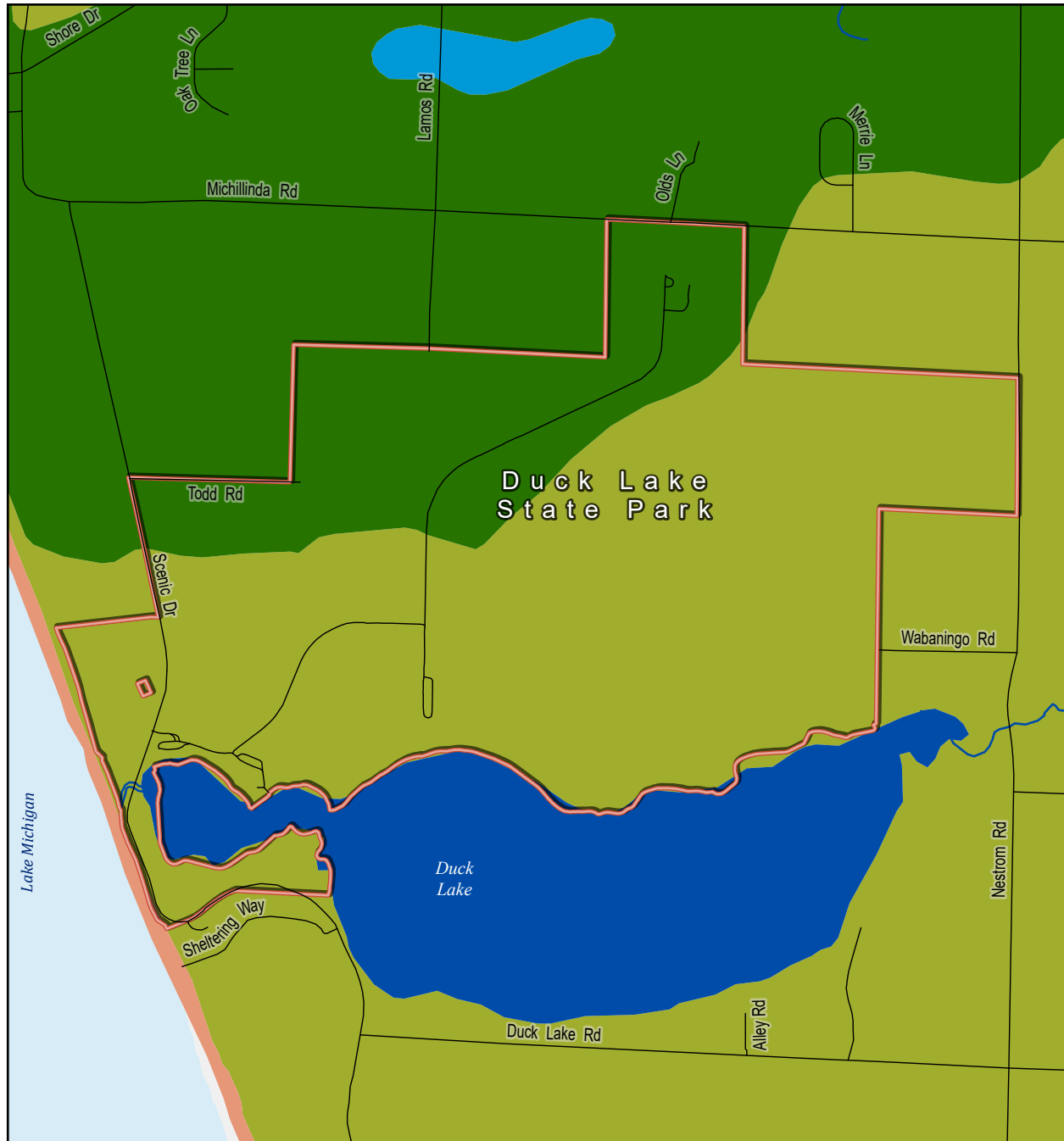
Duck Lake State Park - Topography



Updated: 05/11/2023

*Slope calculated from the 30 meter resolution National Elevation Dataset DEM for Michigan using Arc/Info GRID v9.0

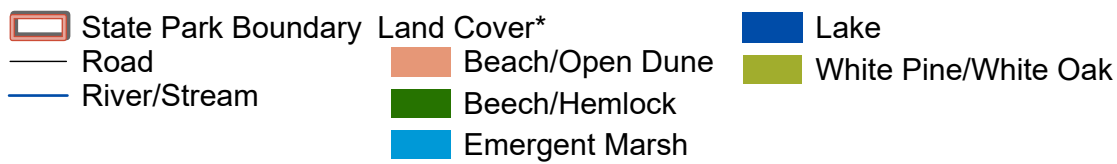
Land Cover, 1800s Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



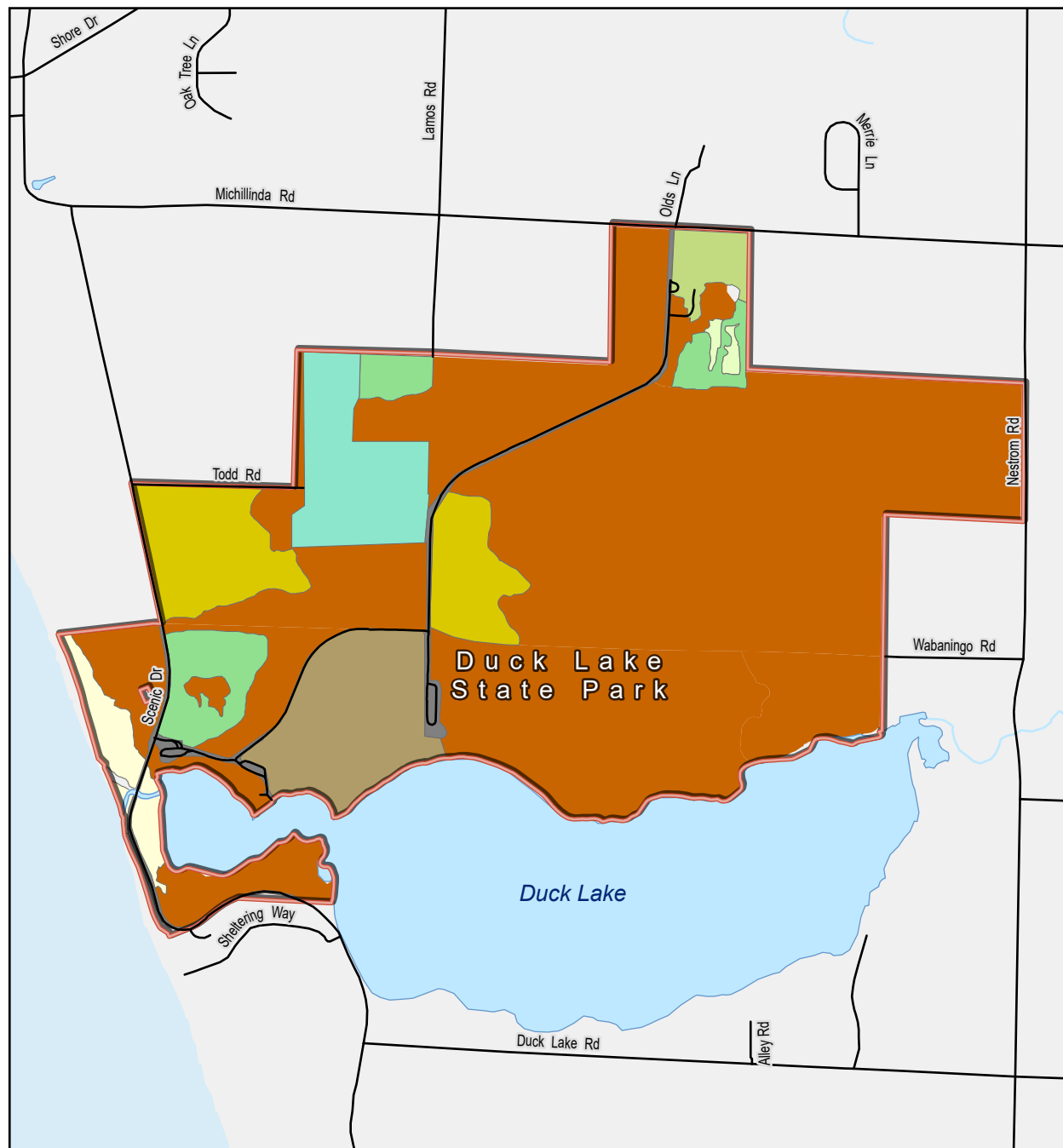
Duck Lake State Park - Land Cover, 1800s



Updated: 08/02/2023

*Mapping derived from original notes of the State of Michigan General Land Office Survey conducted in the early to mid-1800s

Land Cover Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Duck Lake State Park - Land Cover

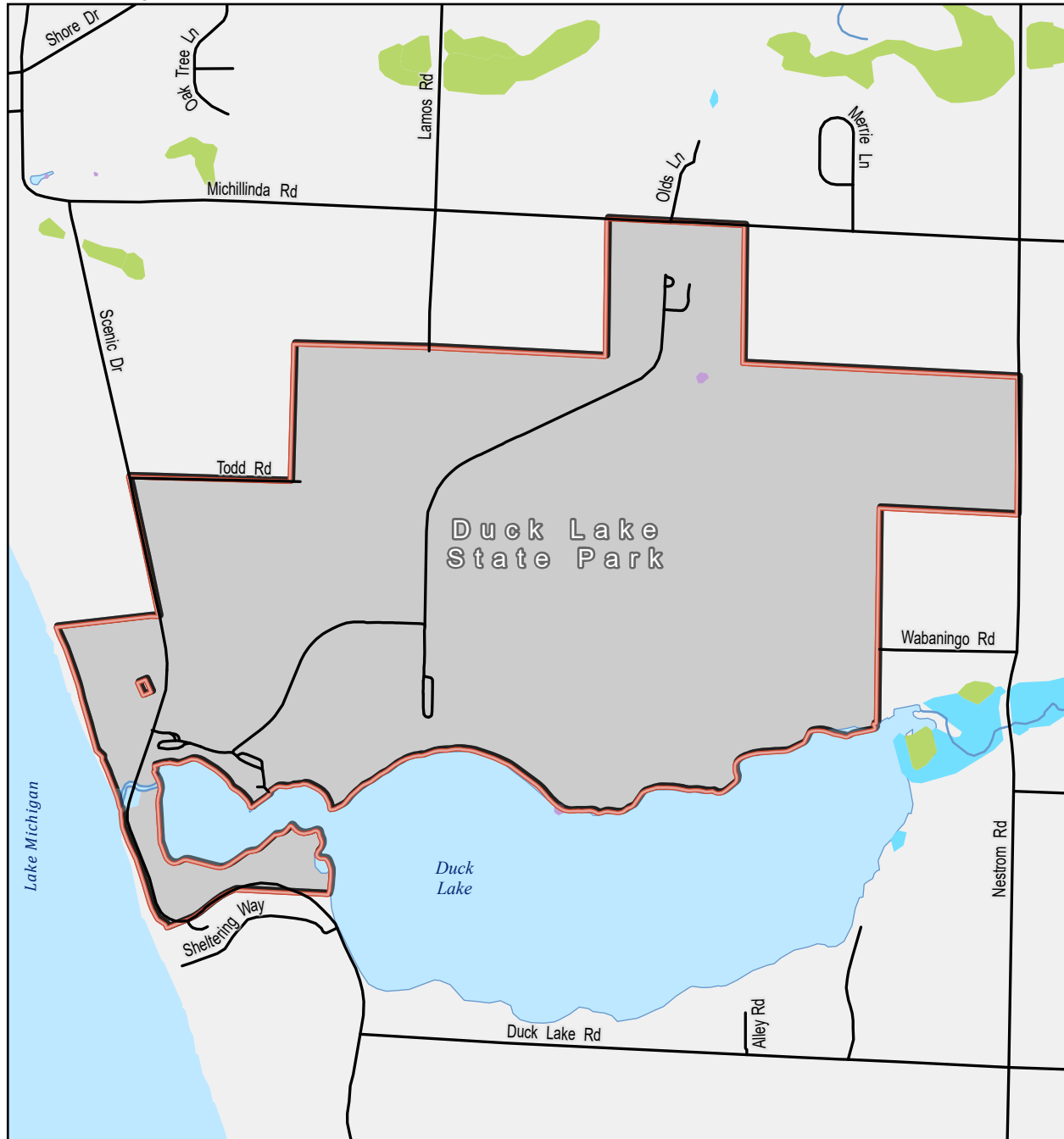


- | | | |
|--------------------------|------------------------|------------------------------|
| State Park Boundary | Mixed Upland Deciduous | Non-Forest Covertypes |
| Stream | Planted Pines | Road/Parking Lot |
| Lakes and Rivers | Mixed Upland Conifers | Herbaceous Openland |
| Road | Upland Mixed Forest | Upland Shrub |
| Forest Covertypes | | Sand, Soil |
| Oak Types | | |

Updated: 04/18/2023
 *Michigan Forest Inventory, Michigan DNR



Wetlands Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



Duck Lake State Park - Wetlands

- | | |
|---------------------|-----------------------------------|
| State Park Boundary | Wetlands* |
| Road | Freshwater Emergent Wetland |
| River/Stream | Freshwater Forested/Shrub Wetland |
| Lake/Pond | Freshwater Pond |



Updated: 08/02/2023

*The National Wetlands Inventory (NWI) dataset (2012)

Soils Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



Duck Lake State Park - Soils

- State Park Boundary
- Road
- River/Stream
- Lake/Pond

Dominant Soil Texture*

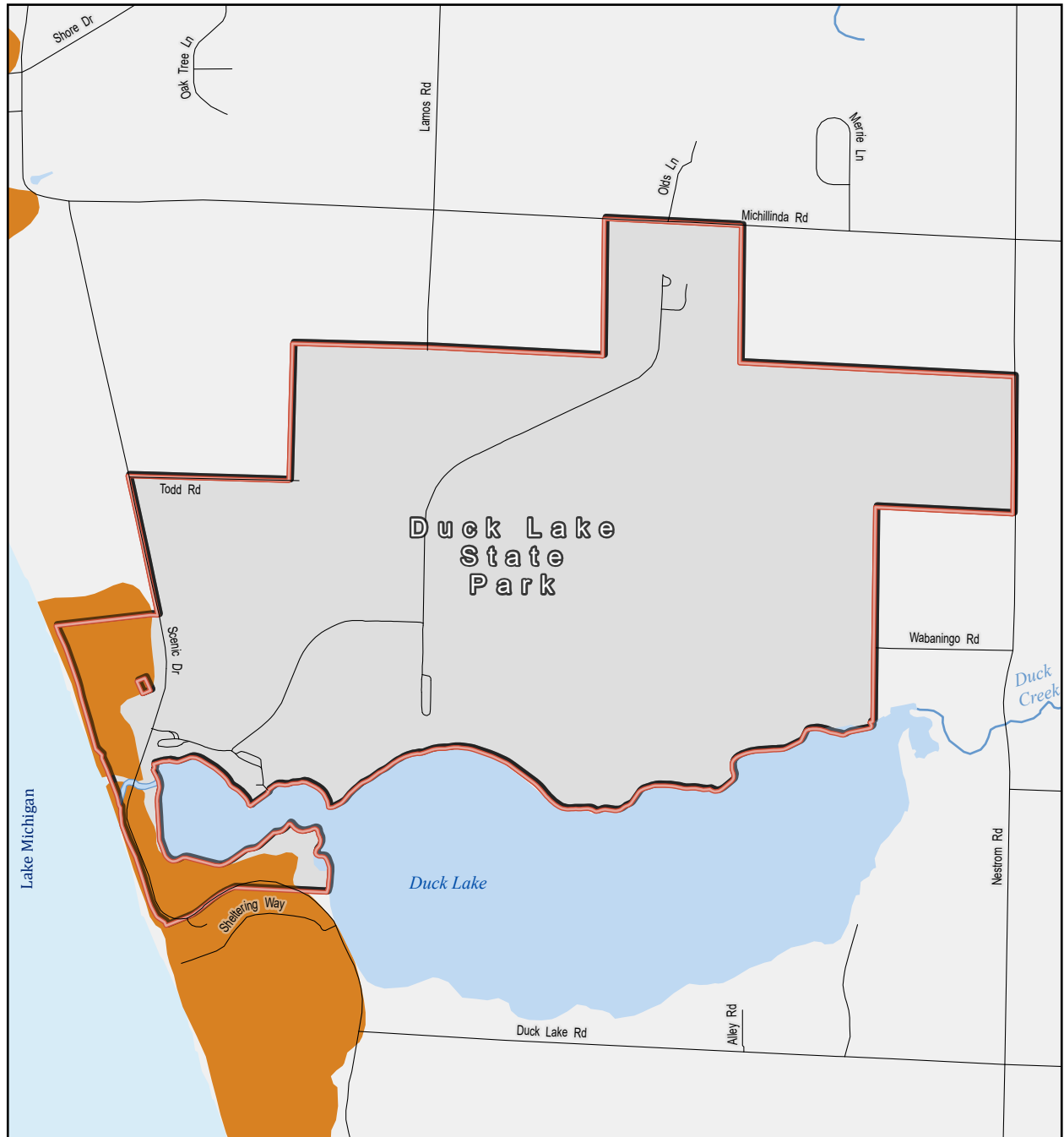
- Sand
- Fine sand
- Loamy sand
- Loamy fine sand
- Muck



Updated: 08/02/2023

*Natural Resource Conservation Service (NRCS) Map Sheets, Soil Survey Geographic (SSURGO) Database, 2000






Coastal Conservation Areas Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



Duck Lake State Park - Coastal Conservation Areas

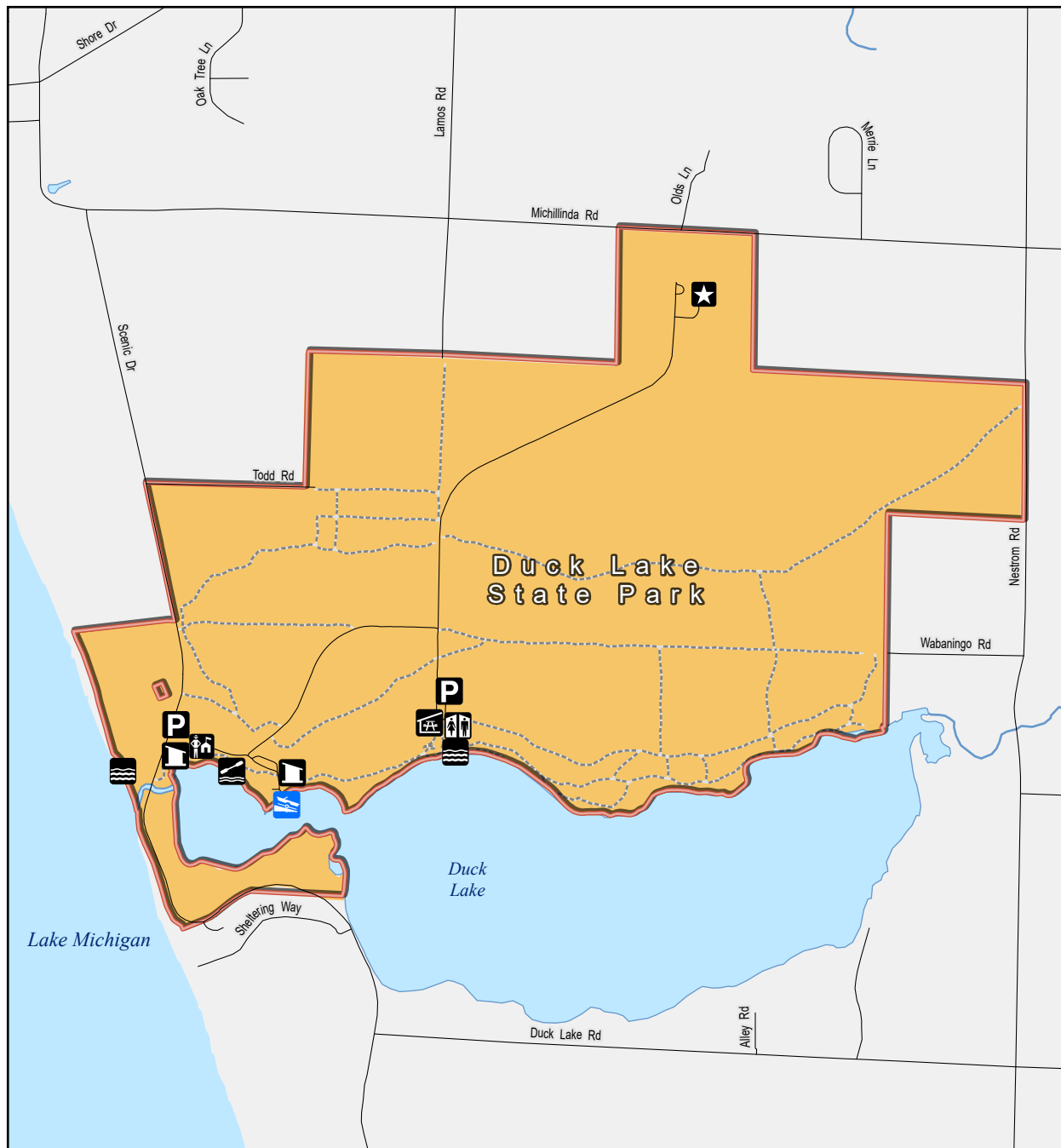
-  State Park Boundary
-  Road
-  River/Stream
-  Lake/Pond
- Critical Dunes***
-  Dune-like characteristics

Updated: 04/19/2023

*Critical Dunes as designated by the Michigan Department of Environment, Great Lakes, and Energy



Park Amenities Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



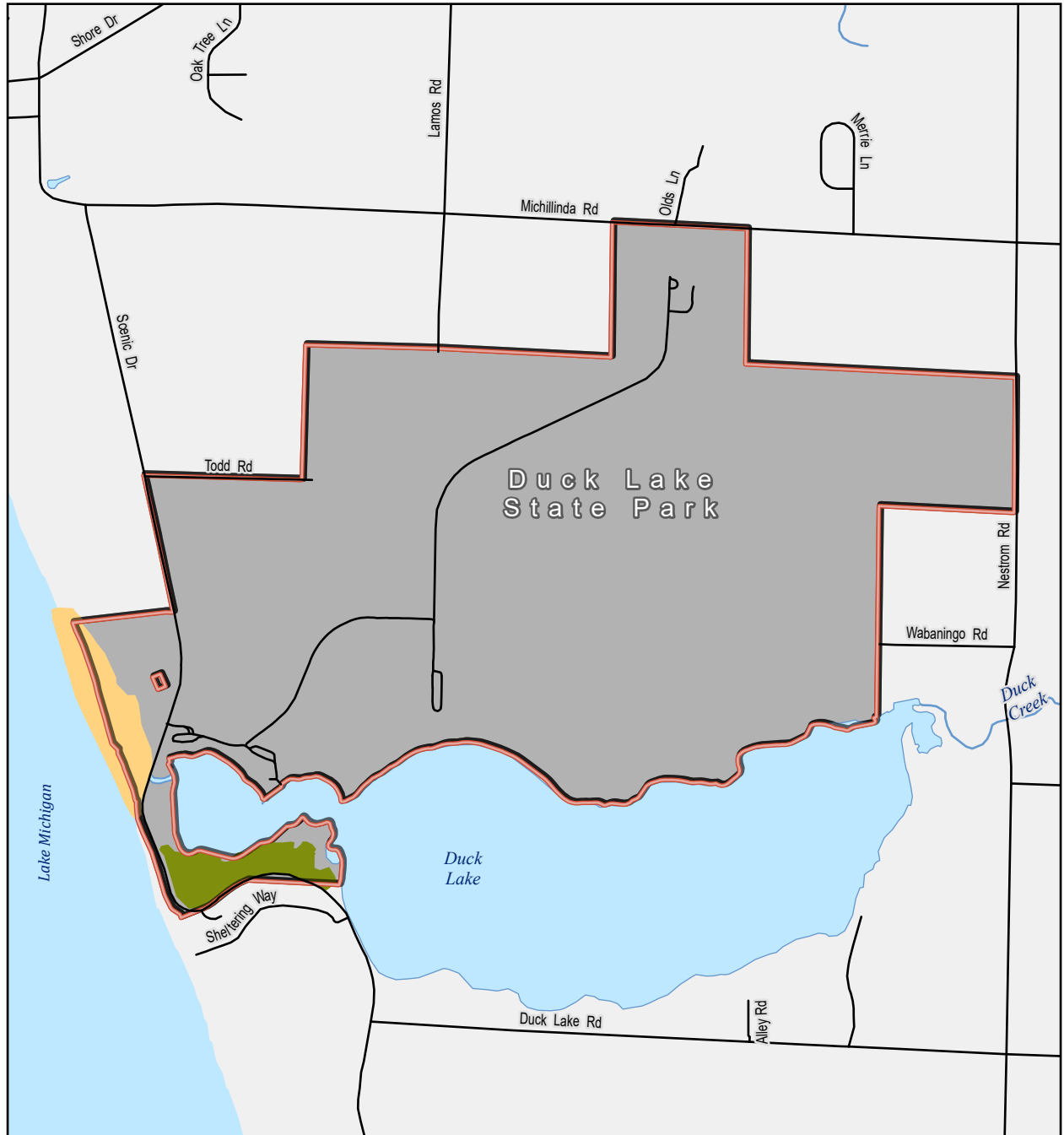
Duck Lake State Park - Park Amenities

- | | | | |
|---------------------|---------------------|-------------------------------|----------------|
| State Park Boundary | Lake/Pond | Maintenance Building | Entrance Booth |
| Road | Open to Hunting | Water Access | Parking |
| River/Stream | Boating Access Site | Canoe/Kayak Carry-Down Launch | Picnic Shelter |
| Trail | Modern Restroom | | Vault Toilet |



Updated: 08/02/2023

Exemplary Natural Communities Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES



Duck Lake State Park - Element Occurrence Natural Communities

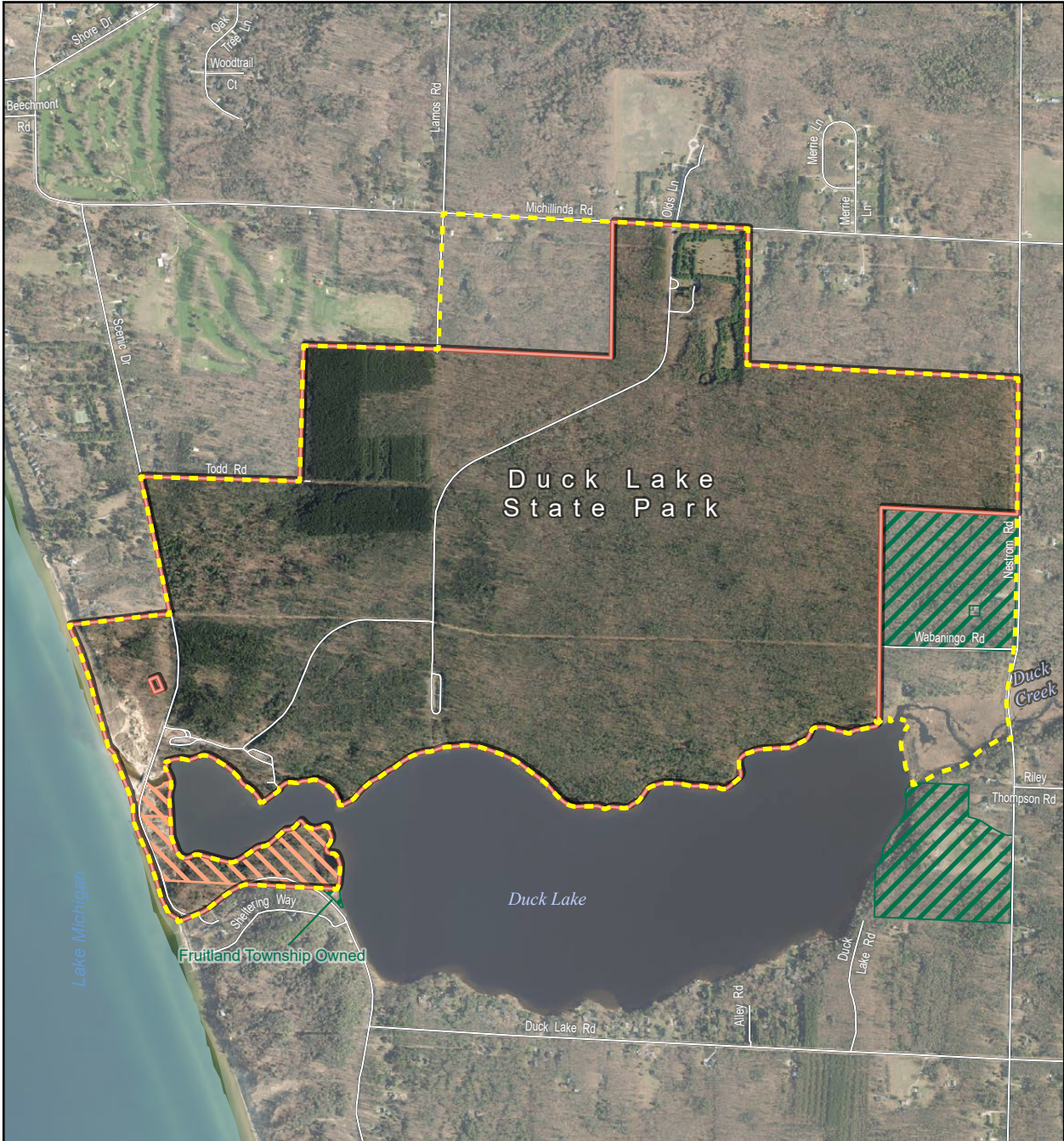
- | | |
|---------------------|-----------------------|
| State Park Boundary | Mesic Northern Forest |
| Road | Open Dunes |
| River/Stream | |
| Lake/Pond | |

Updated: 07/24/2023

*Natural Communities of Michigan (Michigan Natural Features Inventory)








Park Boundary Map



MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Duck Lake State Park - Park Boundary

-  State Park Boundary
-  NRC 2020 Approved Project Boundary*
-  Road
-  Land Use Restriction
-  Fruitland Township Owned

Updated: 06/14/2023

*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, approved by the Natural Resources Commission in 2020.





Heat Map depicting the zip code of survey respondents' primary residence. Warmer colors represent a greater concentration of respondents. A small number of respondents are located beyond the map extents. Many survey respondents were located in the Southern Lower Peninsula.

Appendix

B: Public and Stakeholder Input

B.1 Summary of Public Input Survey

One of the methods the planning team used to gather input from park users was an online survey. This online approach provides a convenient way for those who have access to the internet to provide feedback, though it is not designed to be statistically representative of Duck Lake State Park users or uses, as respondents self-select. The online survey provides valuable information about what certain individuals or groups (those who are motivated to comment about the state park, those likely to receive DNR communication about the survey, and those who have easy access to the internet) hope to see in the park's future management.

The survey was advertised to a diverse range of people through various means. A press release was sent out to subscribers of boating, wildlife viewing, statewide DNR news and Michigan's trails filtered for Mason/Lake/Oceana/Newago or Muskegon/Ottawa/Kent/Allegan/Barry regions, which included 32,204 email subscribers. It was also promoted in local media outlets. The survey link was also sent to over 45 stakeholders the planning team had identified who were

invited to share the survey.

Responses were collected from August 30, 2023 through September 30, 2023. During the collection period, 238 individuals responded to the survey. Of those respondents, 220 (92%) have visited the park in the last ten years and went on to answer the remainder of the questions in the survey. Of those that did not visit the park in the last ten years, the top reasons for not visiting more often were that they intend to but have just not visited yet for various reasons. They were also asked what improvements or changes to the park would make them want to visit more often. Responses included improving parking or adding a primitive or low-impact campground.

The highest number of respondents were between 50 and 64 years old (31%) and the 65 years or older age range was just behind them with 29% of responses. Most respondents reported their race/ethnicity as white/Caucasian (83%), though 6% responded "prefer not to answer" and 11% selecting multiple ethnicity/other. Most of those who answered "other" specified locations such as Whitehall,

Muskegon, or other nearby towns. Most respondents were in the central west region of Michigan's Lower Peninsula, primarily concentrated around Whitehall and Montague. A small number of respondents were located outside of this regional area and are not shown on the map.

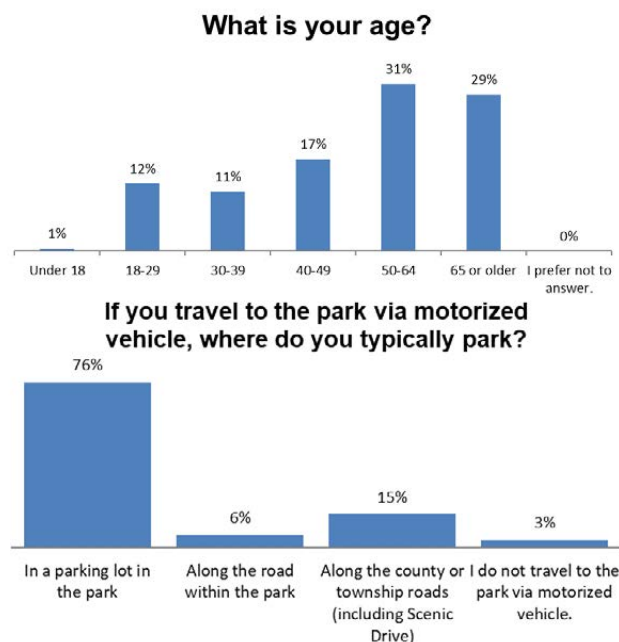
Your Visit

Duck Lake State Park is a day-use park that is used very frequently by locals, and also enjoyed by visitors to the area. Forty-one percent of survey respondents visit the park monthly or more frequently, and 20% visit six to twelve times per year. Survey respondents were most likely to visit in the summer season (94%), with fall and spring nearly equally visited by 70% and 61% of respondents, respectively. Thirty-three percent of respondents visit year-round. Visitors travel to the park almost exclusively by personal vehicle (97%), and most (76%) park in the parking lot. Almost all respondents had a Recreation Passport (94%). Most respondents stay at their own principal home when they visit the park (72%), whereas 10% stay at their own second home, 6% stay at a campground, 4% stay at someone else's home or second home, 2% stay at a hotel or motel, and 6% stay elsewhere nearby or just go for day trips. Respondents most frequently visited the park with a spouse/partner (60%).

Respondents were asked what three words they would use to describe the park to someone who had never visited. The top ten most common words were beautiful, quiet, scenic, natural, peaceful, beach, trails, clean, fun, and unique. The word cloud

below shows all words that were mentioned two or more times, with the increasing size of the word indicating a more frequent response.

Visitors participate in a range of activities at Duck Lake State Park. The most common activities respondents reported participating in are going to the beach on Lake Michigan (82%), hiking/dog walking (69%), swimming/wading (69%), nature viewing/study (67%), going to the beach on Duck Lake (60%), fishing (46%), and non-motorized boating/paddling



Words most frequently used to describe the park. Larger word size indicates a more frequent response.

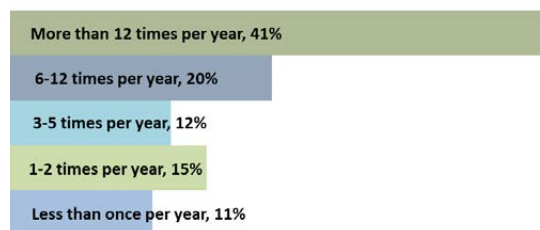
(41%). When asked what activity the primary activity during their visit was, the most common answers were hiking/dog walking (27%) and going to the beach on Lake Michigan (19%).

Respondents were also asked why they chose to visit Duck Lake State Park. Respondents frequently mentioned that the park was close to home and convenient to visit; the park's natural beauty of the lakes, forests and dunes; the family-friendly atmosphere of the park such as the choice of lakes and beaches; recreational activities they enjoy such as hiking, paddling, fishing, and going to the beach; a connection to personal history such as traditions of visiting the park; and the peace and serenity of the uncrowded, less developed park. Five randomly selected responses follow:

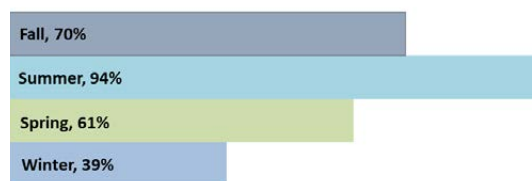
Why do you chose to visit Duck Lake State Park?

- Great place to enjoy the beach and sunset.
- The beach and hiking with my dog.
- Because it was the place I remember the most from my childhood and helped form my career goals.
- Love the shoreline/beach along Lake Michigan, the lake for kayaking and the hiking trails.
- Mainly use the state park for Duck hunting in the fall.

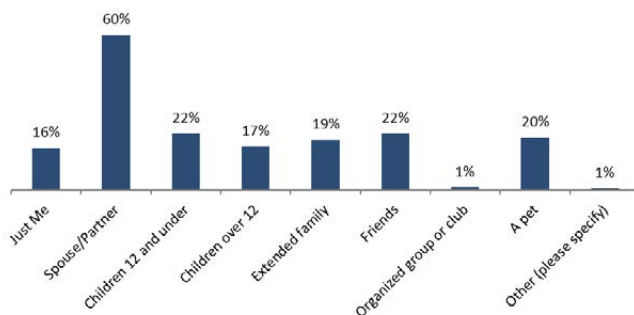
How often do you visit the park?



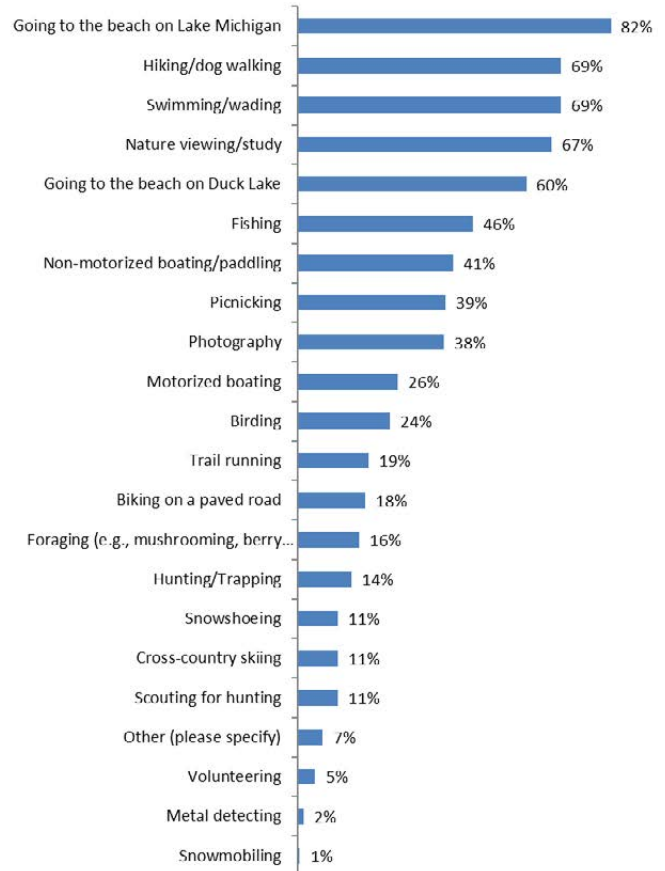
In what seasons do you typically visit the park? (Select all that apply)



On your last visit, who came with you? (Select all that apply)



Please check ALL the activities in which you participate at Duck Lake State Park. (Select all that apply)



Trails

The trails at Duck Lake State Park allow visitors to experience the natural beauty of the mesic forests and sandy beaches throughout the park, and 80% of respondents reported using the hiking (unpaved, natural surface) trails at the park. Most respondents (96%) use the trails for walking, seconded by 22% who run on the trails. Respondents were asked to rank their satisfaction with the trails for activities like walking, running, cross-country skiing, and snowshoeing on a scale from very satisfied to very unsatisfied. Most respondents were very satisfied with their experience (between 51% and 56%) except for cross-country skiing where the highest percent was satisfied (44%). A very low proportion of respondents were somewhat unsatisfied and very unsatisfied with 6% or less for all activities.

Respondents were asked what they liked most about the trails at Duck Lake State Park. Survey respondents enjoyed the access to nature and wildlife the trails provided, the scenic views such as the lakes and surrounding forests, the peaceful

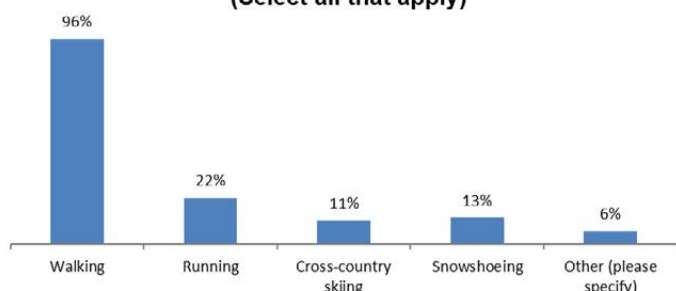
and quiet atmosphere, the safety and good overall condition of the trails, the variety of wildlife, the connectivity of the trails and the access to water, the multiple paths that provide different hiking experiences, and the lack of a crowd which gives users a feeling of remoteness. Five randomly selected responses follow:

What do you like most about the trails?

- Scenic views of the lake and forest covered hiking.
- Natural but easy to walk.
- Quiet and peaceful. Bird, wildlife, and natural forest viewing.
- Scenic, quiet, well marked, not a lot of people.
- The quiet beauty.

When asked what could be done to improve their satisfaction, 65% of respondents stated that no changes were necessary to increase satisfaction while 35% did suggest improvements. This group frequently mentioned repairing and resurfacing the trails since their condition has deteriorated due to tree roots and erosion; adding improved signage for wayfinding; general trail maintenance; and adding more walkable trails.

**How do you use the trails within the park?
(Select all that apply)**



Is there anything that could improve your satisfaction with the trails?

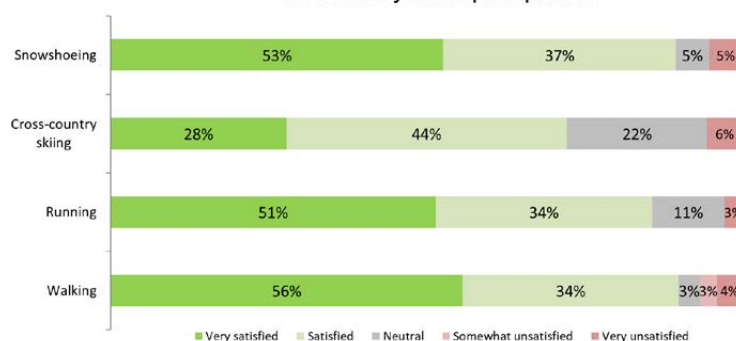
- More and better signage.
- Make them longer.
- Better maintenance and seasonal cleanup.
- Increase mileage (of trails).
- Clear the paths more often.

Day-use Facilities

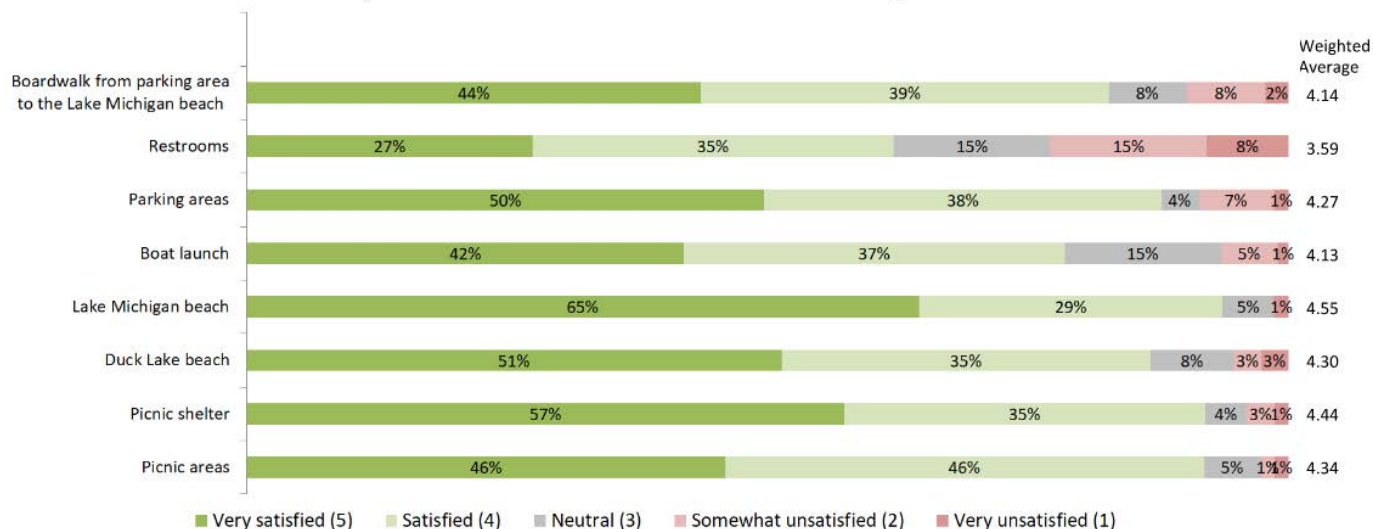
Eighty-seven percent of respondents have used the park's beaches, picnic area and shelter, boat launch, or restrooms in the past. Users were asked about their level of satisfaction with each of the day-use facilities, on a scale of very satisfied to very unsatisfied. The restrooms, Lake Michigan beach, and boardwalk to the beach were the most heavily used, and users were generally satisfied with their experience; however, when the satisfaction levels were averaged, users were most satisfied with the Lake Michigan beach and least satisfied with the restrooms.

When asked what they liked the most about the day-use facilities, respondents frequently mentioned the cleanliness of

Please rate your level of satisfaction with the trails for the activities you have participated in.



Please rate your level of satisfaction with the facilities you have used.



the facilities such as the restrooms and beach, the availability and accessibility of the facilities, the beach amenities and recreation opportunities, the size and spaciousness of the park, and the amount of parking available and ease of use for the boat launch.

What did you like most about the day-use facilities?

- It's a great place to take the kids to swim, the parking is easy and it's close to home. This park is a rare gem.
- The access to the kayak launch area is great. The bathrooms by Duck Lake swimming beach are great. The boardwalk under the scenic drive is wonderful.
- It's a great spot to access the lake and offers shallow water areas for young kids to swim, observe minnows and avoid Lake Michigan waves/currents.
- Everything is typically well-kept and clean.
- They are clean and well taken care of.

Fifty-three percent of respondents reported that there was something that could be done to improve their experience with the day-use facilities. The vast majority of responses mentioned restrooms, such as a need for modern restroom facilities and having restrooms near Lake Michigan. Other common themes included increased or improved parking, extending the boardwalk or improving its condition, extending the hours that the park is open, improvements to safety and security, adding an ADA accessible kayak launch, and modernization of facilities. Five randomly selected responses are below.

Please describe what could be done to improve your experience at the day-use area:

- The bathrooms are in dire need of repair or replacement.
- The park is often left unlocked and I have observed overnight camping on numerous occasions in the dunes and woods (e.g., in sleeping bags and hammocks).
- It seems like the parking along Scenic Drive could be improved (marking, limited hours, a safe pedestrian

walkway to the beach, and parking north of the entrance is dangerous.

- The boat launch does not possess a boat wash station-this should also include all areas that include small watercraft such as kayaks. Duck Lake has been plagued by invasive species that have disrupted the lake ecosystem. The State or park does not participate in the treatment of the lake for these invasive species and unfortunately, more are likely to be introduced. Prevention is the best solution.
- Would like flush toilets in place of the outhouse at the boardwalk and beach area.

Duck Lake State Park rents kayaks to visitors, but only one respondent had rented a kayak from the park in the past. Respondents were also asked what other services they would like to be provided at the park. Common themes include food or concession options, nature programs to increase education and programming for children, more rental opportunities for various recreation interests such as biking, horseback riding, and paddleboarding. Five randomly selected responses follow:

Are there any other services you would like to see provided at the park?

- It would be great if the park was patrolled more often to enforce the rules and encourage compliance.
- Vending machines on hot days, like hot coffee, cold drinks, snacks
- Nature walks
- Rustic mini cabins for rent.
- Signage to educate on species.

Hunting and Trapping

Just fourteen percent of survey responses, totaling 29 participants, reported hunting, or trapping at the park. The overwhelming majority (72%) hunt white-tailed deer, 55% hunt small game, 28% hunt game birds, and 21% hunt waterfowl. Seven percent trap furbearers. When asked to leave any comments about their hunting or trapping

experience, some respondents mentioned how much they enjoy using the park and the variety of wildlife they find. Others voice their concern about park users who oppose hunting and mention that non-hunters should be made more aware that they are allowed to use the area. Five randomly selected comments are below:

Please enter any comments you may have about hunting and trapping at the park.

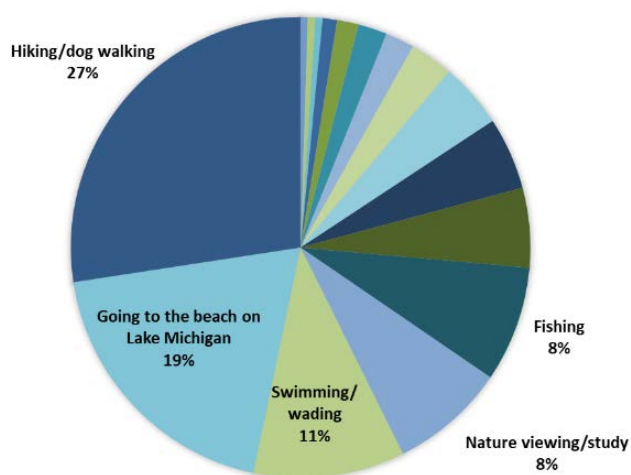
- Love deer hunting in the fall as it is one of the few hunting lands in the area. Hunting is my top activity at the park, I want to make sure that hunters will always have access.
- It is a great place to hunt in the fall!
- Please keep the hunting open, this is a great opportunity and should continue. Thank you
- It's a good piece of land to use.
- You never know what kind of waterfowl you will come across on Duck Lake.

Fishing

Forty-three percent of survey respondents use the park for fishing access. They most frequently fish from a motorized boat (64%) or from the shoreline (56%), or from a non-motorized boat (30%). One hundred percent of all respondents (84) say that they fish in Duck Lake and 14% also say that they fish in Lake Michigan. When asked what species their target is when fishing 49% said they were not fishing for a particular species followed by bluegill (35%) and largemouth bass (31%).

Comments left by anglers related to a desire to improve the fishing infrastructure, specifically fishing docks, or a desire for better kayak launches for Duck Lake. They also mentioned a need for vegetation control as it has taken over along parts of the edge of Duck Lake making access difficult, as well as possibly stocking the lake to improve fish populations. Many

Which is your PRIMARY activity when visiting the park?



respondents also expressed their satisfaction with the fishing experience and their enjoyment of the park. Randomly selected comments are below:

Please enter any comments you may have about fishing at the park.

- Easier kayak launching would be great. Fishing kayaks are heavy and are tough to get up and down the hill at the 'kayak launch'.
- Can we prevent cormorants from eating fish in Duck lake?
- There are definitely large Pike in Duck Lake.
- Excellent Crappie and Bass, I would love to see more habitats and fish planted into the lake to continue to improve it, perhaps Walleye.
- My husband fishes anywhere there is water. Likes being able to wade out and fish.

Other Thoughts

Finally, respondents could share any other comments they had about the park, and optionally submit a photograph of their experience. One hundred and seven comments were submitted, which largely fell into the categories below:

- **Improvement of Infrastructure:** This includes suggestions like improving safety on the roads around the park, adding running water for restrooms and cleaning boats, and repairing existing signage as well as adding more around the park for wayfinding and park information.
- **Maintenance of the Park:** Many people called for more frequent cleaning, especially in terms of garbage collection and beach cleanup. The state of the trails was a concern, with many respondents asking that some parts of the trail be made more accessible.
- **Recreational Activities:** Respondents highlight the various recreational activities that they enjoy like fishing, kayaking, hiking, and hunting. Some comments mention the equestrian community in the area is sizeable and they would like to be allowed in the park to use the trails safely.
- **Low Support for Camping:** Many comments oppose the idea of adding camping facilities to the park. This may be because the majority appreciate it as a day-use park and want to preserve its natural character.
- **Preservation of Natural Habitats:** Multiple comments emphasize the importance of conserving the natural resources and wildlife of the park.
- **Enjoyment of the park:** Many respondents reiterated their enjoyment of the park, and that they love to visit for the natural beauty and the recreation opportunities.

Five randomly selected comments follow:

Please share any other thoughts you may have on the park.

- I would not support further development of the park lands. Best left natural.
- Greater access to new areas of the park. Additional

amenities such as flush toilets, kayak launch, nature/interpretative center would be welcome additions.

- I would love it if there was access off Michillinda Rd again. Or at least a parking lot outside the gate in this area for walk-in entry. This would be very convenient for those going to the park to use the trails.
- I will again reiterate that I visit the park multiple times a week. I utilize the trails and other walkways. I enjoy the beach and the dunes. We paddleboard and kayak often as well. Viking through the park is also convenient to get off the main roads. I would not support further development of the parklands. Best left natural.
- Please allow horses. My trail group has wanted to ride here from the barn for YEARS.

Survey participants could leave a photo of their experience at Duck Lake State Park, and 35 images were submitted. These photographs will be used to bring the General Management Plan to life! The DNR appreciates everyone who took the time to participate in the survey.

B.2 Summary of Stakeholder Input Workshop

To gather targeted input from governmental, non-profit, and business/tourism entities, the planning team invited nearly 50 stakeholders, both individuals and community groups, to participate in a facilitated input workshop held on September 18, 2023, from 2:00 p.m. to 4:00 p.m. at the Fruitland Township Hall in Whitehall, Michigan. Representatives of the Michigan Department of Natural Resources (DNR) provided the stakeholders with a brief overview of Duck Lake State Park, including its natural features, cultural resources, and recreational offerings. The stakeholders were also presented the general management plan process, timeline, and an explanation of the plan elements that their input would inform: the statements of significance, the twenty-year management zone map, and actions intended to be accomplished over the next ten years.

The stakeholders were divided into small discussion groups around a numbered table (either 1, 2, 3, or 4). They worked together to complete a series of exercises discussing the park's current status, opportunities for partnerships, the park's potential benefit to the larger community, and the stakeholders' vision for the park's future. Each table then reported out to the larger group. The results of the table exercises are outlined in the following summary.



Additional photos of Duck Lake State Park visitors enjoying their stay

Stakeholder Workshop Attendees

Icebreaker Question

When the stakeholders introduced themselves, they were asked to describe what matters most to them about Duck Lake State Park. Their recorded responses follow in the table below.

What matters most to me about Duck Lake State Park is...

Exercise 1: Say one word or phrase that describes the state park right now.

Commonly mentioned words or phrases that stakeholders used to describe the park related to the recreation activities provided by the park and its natural beauty and diverse ecosystems. They spoke of the uniqueness of the combination of Lake Michigan and Duck Lake, the significance of the park in their memories, and how much they value the park as it is.

WORD OR PHRASE	MENTIONED AT TABLE #
Unique	1,3
A home for recreation	2
Beach	4
Boardwalk	4
Boat launch	4
Cemetery	4
Cherished- holds a place in memories	1
Crowded Lake Mich. beach	2
Dunes	4
Eagle habitat	3
Easily accessed	2
Endangered bird habitat	3
Fishing	4
Irreplaceable	1
Large undeveloped shoreline	3
More parking	2
Nice beach	2
Opportunities to enhance	1
Pristine	4
Pristine natural undeveloped park	3
Public restrooms	4
Relaxing	1
Sunsets	4
Trails	4
Underdeveloped- good	2
Very unique combination- Lake MI, Duck Lake	3
Views-sunset, stars,	1
Water access	4

Exercise 2: Say one word or phrase that you want to describe the state park in the future.

When stakeholders thought about how they would like to describe the park in the future, they spoke of increased recreational opportunities such as bicycle use, camping, increased accessibility, and more. They desired a park that was safe, accessible, clean, well-maintained, sustainable, and a key part of the local ecosystem.

ITEMS	MENTIONED AT TABLE #
Accessibility-trails,-water,-beach	4
Amenities	4
Bicycles use. (Wabingo Road to pavilion)	2
Camping	4
Clean beaches	2
Clean up the landfills	4
Enjoyed	1
Expand	1

ITEMS	MENTIONED AT TABLE #
Fishing destination	4
Increase accessibility of special needs	1
Interpretive signage	4
Invasive species (less)	4
Less motorized boats	2
Limited access	3
Maintain as is	2
Maintain the integrity of the park	1
Manage lake & water quality	3
Managed power boat usage & access	3
Monitor ecology of lake	3
Point of investment	1
Police opening & closing times	3
Preserved habitat & shoreline	3
Preserved wetlands	3
Protect opportunities to fish & hunt	1
Protected	1
Sensitive co-habitation of swimming & boating	3
Tranquil	2
Non-motorized vehicles on trails	2

ITEMS	TABLE #	TOTAL VOTES
East/west non-motorized bicycle trail from Wabaningo Rd to the pavilion	2	1
Electric car charging	2	0
Flush toilets near beach	2	2
Winter access- gates open	2	2
More helpful staff in all seasons	2	0
Enforce park hours	3	0
Lock entrance gates at 10:00pm	3	4
Enforce parking restrictions on Scenic Drive at the channel	3	0
Improve the boardwalk under bridge	3	0
Improve restroom facilities	3	0
No night fishing and night hunting	3	0
Monitor invasive species	3	0
Drinking water at parking lot	4	2
Improved accessibility for beach, trails	4	2
Improved marketing	4	0
Winter activities- plow the parking lot	4	4
Dune stabilization	4	0

Exercise 3: What improvements or changes would you like to see at the state park? What things would stay the same?

Stakeholders discussed a broad array of possible improvements to the park. Major themes included increasing recreation options, increasing environmental sustainability and improving the local ecosystem, adding visitor facilities to improve the experience, strengthening non-motorized infrastructure and connections, and their desire to access and utilize the park during the winter months. The items receiving the most votes from members at the tables were winter activities (and maintenance) as well as stricter enforcement of the park's hours by locking the entrance gates at 10pm.

Items that the stakeholders thought should stay the same include what the park is most known for- the shoreline, access to hunting and fishing, preservation of undeveloped areas, and more as shown in the table.

Improvements or Changes

ITEMS	TABLE #	TOTAL VOTES
Place parking on south side w/ boardwalks connecting to existing	1	1
Manage invasives	1	3
Segregate hunting from hiking	1	0
More and improved picnic areas	2	2

Stay the Same

ITEMS	TABLE #	TOTAL VOTES
Leave the shorelines natural	1	3
Access to hunt and fish	1	2
Everything else	2	2
Wilderness area	2, 4	3
Undevelopment	3	0
No additional boat trailer parking spots	3	4
Undisturbed shoreline	3	4
Unpolluted	3	0
Preservation of mostly undeveloped areas	4	4
Maintain public parking areas	4	0



A stakeholder presents the results from their group

Exercise 4: What are some collaboration and partnership opportunities that the state park presents for local communities and stakeholders?

There were two groups that more than one stakeholder group mentioned for partnership opportunities: the Boy Scouts and the local schools. Stakeholders suggested many partnerships that could provide educational and recreation events, as well as assistance with accessibility, maintenance, and upkeep of the park.

GROUP OR STAKEHOLDER NAME	COLLABORATION OR PARTNERSHIP IDEA	TABLE #
Boy Scouts	Blue bird houses; conservation habitat bats, ducks, monarch butterfly; recognize ecosystems & value	1
	1, 2, 4	1
Schools	Daytrips, hiking, conservation, fishing; Recognize ecosystems & value	1
	1, 4	1
MUCC	Voice for funding, projects, mutually beneficial opportunities	1
Watersheds	Cleanup opportunities	1
VA groups- Wounded Warriors	Accessibility to hunting sites for example	1
State legislature	Leverage \$	1
Botanists, naturalists, musicians, crafters, bird ID, animal ID	Various events	2
Friends of Fruitland. Twp Trails	Help develop non-motorized all-season trails that connect park w/ other township trails (reduce car traffic & pollution)	2
Duck Lake Riparian Association	Monitor Duck Lake for invasive species & water quality; maintain good communication with park management; continue to work with the park on preservation.	2
Kayakers	Improve launch area	3
Disability Network	Recreation & access	4

GROUP OR STAKEHOLDER NAME	COLLABORATION OR PARTNERSHIP IDEA	TABLE #
Conservation District	Dunes, habitat, monitoring	4
Land Conservancy	Expansion	4
Road Commission	Collaboration & cooperation	4
Fruitland Township	Local rules	4
Fishing groups	Assistance with surveys	4
County/Twp. State/ DNR/Private Donors, "friend" groups	Collaboration	2
Clubs- 4H, Boy Scouts of America		1
User groups eg Anglers Assoc., MUCC		1

Final Exercise: Collective Priorities

The top items from exercise four were transferred to another exercise wherein everyone in the session could vote on which idea they thought was the best. Out of the ideas generated, the item receiving the most votes was minimal alteration to the park's current state, followed by improving beach and trail accessibility.

PRIORITY	VOTES
Keep it nearly all the same	7
Improved accessibility for beach/trails	5
Undisturbed/undeveloped shoreline (natural)	4
Preserve undisturbed areas as natural	4
Lock entrance at 10PM	3
No additional boat trailer parking	2
Winter access- gates open	2
Maintain access to hunting/fishing	2
Flush toilets near Lake Michigan beach	1
Manage invasive species	1
Increased winter activities	1
Drinking water at parking lot	1
Maintain wilderness area	0

B.3 Tribal Engagement

The following letter was sent via email to:

- Bay Mills Indian Community
- Grand Traverse Band of Ottawa and Chippewa Indians
- Hannahville Indian Community
- Keweenaw Bay Indian Community
- Lac Vieux Desert Band of Lake Superior Chippewa Indians
- Little Traverse Bay Bands of Odawa Indians
- Little River Band of Ottawa Indians
- Gun Lake Tribe of Pottawatomi Indians
- Nottawaseppi Huron Band of the Potawatomi
- Pokagon Band of Potawatomi
- Saginaw Chippewa Indian Tribe
- Sault Tribe of Chippewa Indians

Dear Tribal Leaders:

The Parks and Recreation Division (PRD) of the Department of Natural Resources (DNR) is in the process of developing general management plans for the following state parks:

- William C. Sterling State Park in Monroe County
- Duck Lake State Park in Muskegon County
- Indian Lake State Park in Schoolcraft County
- Palms Book State Park in Schoolcraft County
- Negwegon State Park (phase 2 plan update) in Alpena and Alcona Counties

The DNR uses general management plans (GMPs) to define a long-range planning and management strategy that will protect the natural, cultural and historic resources of the site, while considering education and recreation opportunities. A planning team, representing various specialties within the DNR, has been established and is meeting regularly to develop the GMPs for these sites.

The planning process includes several opportunities for input, including a stakeholder meeting and online survey. In addition, the draft plans will be available for review and comment prior to adoption.

For additional information on our management plan process, please visit our website at www.michigan.gov/parkmanagementplans

We would like to give the Tribes the opportunity to meet with us to discuss the management plan process and any thoughts you may have in relation to any of these properties.

Please contact Ms. Debbie Jensen, PRD Management Plan Administrator, at Jensend1@michigan.gov if you would like any additional information or would like to arrange a meeting.

Sincerely,

Trevor J. VanDyke

Director, Legislative & Legal Affairs Office & Tribal Liaison
Executive Division, Michigan Department of Natural Resources
Constitution Hall, 525 West Allegan Street
P.O. Box 30028
(517) 284-6243

vandyket1@michigan.gov



B.3 Summary of Draft Plan Input

The public was invited to share their thoughts about the Duck Lake State Park Draft General Management Plan at a public meeting that was hosted by the Department of Natural Resources (DNR) on March 20, 2024 from 6:00- 7:30 p.m. at the Fruitland Township Hall in Whitehall, Michigan. The general public was notified about the meeting through a press release, internet postings, and email notifications. A total of 62 attendees were recorded on sign-in sheets.

The meeting began with an introduction of planning team members, followed by an overview of the general management plan process, Duck Lake State Park, and the draft general management plan contents. The presentation was followed by a question-and-answer period. Topics discussed included requests from the public for horse trails in the park, discussion of the policy to keep the park gates locked in the winter, the capacity of boat trailer parking at the launch and boats on the lake, regional trail proposals in the area, and others.

Then, attendees were asked to review the presentation boards that included the following excerpts of the draft general management plan: statements of significance, management zone plan, and ten-year actions. A proposed project boundary map was also available for viewing.

Participants were given several optional methods to express their comments, thoughts, and opinions. These methods included “sticky notes” for affixing comments directly onto the presentation boards, stickers for prioritizing their top action goals, and a comment sheet. Two copies of the complete draft plan were available to attendees during the meeting for review. Attendees were also advised of the project website, where they could access the draft plan and submit comments via an online survey.

Participants each used six stickers to prioritize their top actions from the ten-year action plan. Some of the top priority actions were:

- Develop a small trailhead parking lot at the Wabaningo Road entry. (35 votes)
- Continue to work proactively to develop and implement measures to prevent, detect and control invasive species, including treatment to protect against hemlock wooly adelgid. (34 votes)
- Analyze options and make recommendations for improvements to the bathroom facilities at the Lake Michigan day-use beach area. (31 votes)
- Repair and replace the boardwalk to the Lake Michigan beach and consider ways to discourage pedestrian crossing of the Lakeshore Drive bridge. (30 votes)

- Analyze the existing trail system and make any improvements to the routing and wayfinding signage as necessary. (24 votes)

Many other themes were discussed within the meeting and the online comments, such as continuing to protect the park’s natural character and limit development, concerns that the park character may decline if use is increased, additional calls for equestrian trails in the park, several comments asking to not create overnight accommodations, and a few comments asking for overnight accommodations.

The following is a list of all action items, their number of votes, and all sticky note comments that attendees recorded, as well as comments from the online survey. These items, along with other input from the public, were considered as the planning team finalized the general management plan.



The public meeting attendees seated in the Fruitland Township Hall listen to the presentation about the plan



Groups of attendees gather and converse about the park and the general management plan and give their input

PUBLIC AND STAKEHOLDER INPUT

PUBLIC INPUT MEETING ATTENDEES

NAME
Scott W. Erdman
Glenn Hayden
Ace Covey
Richard Johnson
Dave Rice
Jason Freiheit
Carrie Patterson
Susan Hertel
Glenn Eaton
Doc Zuidema
Mary Mason and Jim Barton
Delphine Hogstan
Ellie Vantongeven
Tom and Carol Bart
Joann Barrett
Bob Murray
Walter Webster
Margot Slater
Melissa DeWitt
Jim and Karen Thompson
Don and Laura Kosheba
Lynda Hughey
Cheyenne Barth
Brian Hesse
Jeff Marcinkowski
Russ Nally
Dennis Rodgers
Cheri Tuttle
Bob Brown
Carlet Mitenbuler
Lynn Vronko
Lynn Knopf
Kathy Eggleton
Brenda Van Blargan
Brian M
Mary Larsen
Carly and Karen Nourdhoff
Joseph Grochowalski
Cindy Trevino
David Gawron
Christopher Pollock
Russ Schneider

PUBLIC INPUT MEETING ATTENDEES (CONT.)

NAME
Dave Pequet
Benjamin Benson
Jenny Cook
Roger Hower
Hoyt and Janet Fonger
Sam Darling
Chris Parman
John Parman
Mark Carlson
Joe Czarny
Wendy Kops
Grace Sampel
Nancy Roggers
Kimon Kotos

STAFF ATTENDEES

NAME	REPRESENTING
Debbie Jensen	DNR
Greg Sherburn	DNR
Pat Whalen	DNR
Elissa Buck	DNR
Josh Fogel	DNR
Madison Janes	DNR
Gabrielle Ahlborn	DNR
Christy Summers	Beckett & Raeder, Inc.
Caitlin Jackson	Beckett & Raeder, Inc.

Significance Statements

Outdoor Recreation Destination

Duck Lake State Park is a 728-acre day-use park in Muskegon County, with shoreline and a large sand dune on Lake Michigan. The park also has shoreline on Duck Lake, a small inland lake with a channel connecting to Lake Michigan. Visitors to the park enjoy beach access and paddle sports, fishing, hiking, cross-country skiing and hunting. This largely undeveloped park is well-loved by local residents and enjoyed by visitors to the area as well.

1. No comments.

Day-Use Park on Two Lakes

Duck Lake State Park is an excellent day-use destination for visitors seeking to immerse themselves in the beauty of both Duck Lake and Lake Michigan. The park's convenient location allows for easy access to the expansive Lake Michigan shoreline and the more protected beach on Duck Lake, providing opportunities for beach and water recreation access.

Comments:

1. We must protect our Lake and State Park from over crowding of boats and disturbance to the natural environment. The Duck Lake State Park has been able to be in the natural state because of the Protect and Preservation efforts by the community.
2. The park needs to preserve its day use only policy now and going forward. Any thoughts of night use would be not in the interests of the park. Fires post a hazard to the natural beauty of the park and the fallen trees and underbrush that would be a serious risk to the park. Night use could be abused by the electric forest attendees and combine with the fire risk for a dangerous combination.
3. The Lake Michigan Beach does need more parking. However, the Boat Launch is already putting too much stress on the Lake. The number of resident power boats on Duck Lake has increased over 3x since the 1984 Park Plan. The Lake cannot handle anymore outside traffic! The rangers need to monitor the use closer for boat parking so the no more than the allowed # comes in. If anything the number of boat trailer parking slots need to be reduced.
4. The lake is already too small for the number of boats it currently has. The protected beach you speak of is only pristine because of the previous 100 year of protection it has received.
5. The day-use is a significant factor in keeping the park pristine and natural. Any type of camping will significantly and negatively affect the park. The increase in pedestrian and boat traffic; the interaction of hunters with larger crowds; the interaction of dog-walkers with campers, etc.... It is very nice the way it is. All change is not good change.

6. The beach at Duck Lake could use some sprucing up. And a swing set would be a nice addition.
7. Lake Michigan visitors need more parking You have way to many spots for day boaters. The lake can not safely handle this amount of traffic. Reduce the boat parking and let hikers and beach goers use the extra space.
8. It is perfect for day use, allowing for hiking, swimming and kayaking. However, overnight camping and the proliferation of motorized boats can fundamentally change the complexion of the lake thereby making it unsafe for swimming or boating.
9. I like the emphasis on day use. The park gets sufficient use throughout the year without adding overnight rustic lodging. During summer days the park already is overused as shown by the overcrowding at the channel and congestion of power boats on the lake pulling skiers, tubers, or wakeboarders.
10. Duck Lake already has too many power boats on the lake. Adding more parking for more day use boats would be environmentally irresponsible.
11. Agree

Undeveloped Natural Beauty

Duck Lake State Park is cherished for its largely undeveloped nature. With its wooded dunes, rolling topography, and natural shoreline, the park boasts stunning and diverse scenery that captivates nature enthusiasts and photographers alike. The mile of undeveloped inland lake shoreline within the park is relatively rare in west Michigan, benefiting land and water wildlife, and contributing to the scenic beauty.

Comments:

1. Undeveloped natural beauty is most important. Developing Increased parking near the channel or overnight accommodations will only diminish the natural state of the park.
2. This would be greatly put at risk with the addition of more parking and/or camping. The more people you let in to anything the worse it will get. Especially wildlife habitat. The lake is already crowded during the busy season and more boats would not only have an impact on the natural habitat of the great fishery but also be a danger to the public. The lake can not handle more boats. Camping would greatly impact the wildlife with trash and foot traffic.
3. The relatively small footprint of the Duck Lake State Park makes it a perfect destination for families with young children to explore and enjoy the woods and experience the wildlife. A proposed camp ground would impinge on these qualities and destroy much of the pristine nature of the forest.
4. The park's natural shoreline is also a critical factor in maintaining water quality in Duck Lake, especially given the extensive development along the South shore.
5. Putting camping in the park will ruin the natural beauty.

Adding more boat parking will ruin what you are promoting as the reason why you want to add them. More boats and camping will ruin the entire essence of Duck Lake. The lake is already congested and getting worse as is.

6. No rustic lodgings! This would disrupt the undeveloped natural beauty of the park. That is what makes this park special. I pick up trash when I walk the trails, never a lot, but add ppl staying overnight for several days this will change.
7. My family has been vacationing in the area for over thirty years and appreciate the beauty of the undeveloped land within the park.
8. Let's not make the "relatively rare in west Michigan" even more rare!! Bigger parking lots; camping. etc.... will all have an undesirable outcome.
9. Keep the park natural DO NOT add camping It will ruin a rare asset of the area
10. For over a 100 years this land has been carefully managed to preserve its natural undeveloped beauty. The introduction of any camping will destroy this unique setting. The community has a 100% consensus against any introduction of camping.
11. Duck Lake State Park is a hidden natural wonder that local visitors come to enjoy. In order to the continuous beauty of the Lake, we need to minimize the amount of camping. It is a disturbance to the natural inland lake shoreline. We must continue to protect this special land for all to enjoy in generations to come.
12. Changes to the undeveloped beauty of the park would significantly draw away from the unique niche that attracts so many hikers, kayakers, fisherman. The lake had a great study done when the 15 boat launch sites were put in. The increase in wake boats has strained the lake use and we should never add to the boat traffic as the lake is very small and in danger of making it difficult to use and poses threats to the increasing lake levels with the big wakes erosion of lake residents land.
13. Camping will absolutely ruin the natural Beauty of this wonderful park. Residents absolutely do not want camping. There is plenty of campgrounds in the area.

and ambiance has been destroyed by excessive boat traffic. Not only can too many powerboats impact a lake through noise pollution but they can have devastating impact on the ecosystem and cause safety concerns.

3. The tradition of Preserve and Protect has allowed Duck Lake to remain one of the few pristine destinations for natural shoreline, undeveloped nature, and diverse scenery. It is imperative that we continue to respect the land by not allowing more traffic and disturbance.
4. Make more parking for boat trailers as the kayakers tend to over take the trailer parking leaving the people with trailers to park in the "over flow" with no easy area to turn around to get back to the boat ramp in a timely manner.
5. Kayakers love Duck lake but large wake boats pose a risk. It is important to keep the boat traffic at the current level or less as the boat use has increased every year. We love to canoe across and hike. The increase use by the big wake boats cause waves that roll from one end of the small lake to the other posing threats to the use we love. Increasing boat traffic by the number of parking slips would push the lake in a dangerous way.
6. I would not say duck lake is large at all. But it is a beautiful abundant fishery. By allowing more boats to enter the lake that abundant resource will disappear in no time.
7. Fishing was the number one response to use of the lake. Increasing boat parking/traffic will have a detrimental effect to the availability and quality of said fishing on the lake. I think the limited availability of boat parking has allowed for the lake to support a diverse and adequate population of fish both in terms of size and species. Any increase to boater traffic could throw that off.
8. Fishing on Duck Lake would benefit from a survey of the fish population and a consideration of potential stocking options.
9. All the activities mentioned are highlights of the park. Not mentioned is how speed boats create congestion and waves in the lake. I've had to change direction to point up into two foot waves to keep my canoe from getting swamped. These waves were caused by speed boats and jet skis.
10. Adding more boat and camping will make paddling difficult and undesired.
11. A larger boat parking lot will obviously increase speed boat traffic and make the lake less desirable and safe for kayaks, swimmers, fishermen, etc...

Land and Water Recreational Opportunities

Duck Lake State Park offers a range of recreational options, from swimming in the shallow and warmer waters of Duck Lake, enjoying the shores of Lake Michigan, fishing on Duck Lake and Lake Michigan, to hiking along wooded trails. The park's paddling opportunities are a highlight given Duck Lake's large size, calm waters and clear visibility, making it ideal for paddlers of all levels.

Comments:

1. To my knowledge, the wooded trails are limited.
2. Those of us who have grown up in the upper Midwest are all too familiar with once peaceful lakes whose beauty

Local Community Asset

Situated close to regional population centers, Duck Lake State Park serves as a destination for day-use outdoor recreation. Its convenient location and quiet atmosphere make it highly valued by the local community, as demonstrated by the many improvement projects undertaken by individuals and groups. Local visitors come to the park frequently for their daily recreation, as well as enjoy gathering with friends and family

year after year.

Comments:

1. Yes the park is well-loved and well-used by locals. Don't ruin a good thing with development.
2. The State Park is a gem due to its rustic nature. We are so fortunate to have this unique State Park that is still pristine. Careful stewardship is important to understand the value to the State Park in its current use plan.
3. It is very nice the way it is.
4. Duck Lake in it's current layout is unique. A combination of homes, cottages, public lands all in perfect proportion with limited access and development, not because additional development is bad but rather the lake and it's surrounding area should not sustain stress.
5. At the meeting it was brought up adding horseback riding to the parks trails. I don't think the park is large enough to accommodate horses-hikers-dog walking-xc skiing-snowmobilers. The snowmobilers do use the trails whether or not they are supposed to. It is dangerous enough if one is walking or xc skiing and coming across snowmobilers without having horses added. Also, the horses will cause ruts in the trails over time, a disturbance to the soil not needed in the primitive area of the park.
6. Agree
7. "Its convenient location and quiet atmosphere make it highly valued by the local community" Your statement is correct and by adding more boats and camping you will ruin the very reason Duck Lake is Loved.

Ecological Significance

Duck Lake State Park plays an important role in preserving natural habitats within a larger mosaic of public lands. It serves as a migratory stopover site and nesting habitat for waterfowl and passerines, including the state listed Cerulean warbler and hooded warbler. The park's oak, pine, and hemlock forest provides a home to a variety of plant and animal species. The relative lack of invasive species is a valued aspect of the park, showcasing high-quality natural landscapes.

Comments:

1. Working to prevent the spread of aquatic invasive plants should also be part of the park's overall management strategy.
2. The busier you make it the more the wildlife will be chased away.
3. Perfectly said!!
4. More boats and camping will harm this wonderful setting. Invasive aquatics are a concern. A boat wash station would be a good preventative measure.
5. If you allow people to camp the ecosystem will suffer greatly. Point. Blank. Period. And with the nearby Rothbury festival I'm not sure the right people will be

around this family friendly and beautiful park.

6. Duck Lake is and should continue to be an environment where people, animals, fowl and aquatic life can all thrive.
7. Another reason not to disturb the natural beauty of this park by adding rustic lodging.
8. Adding boats and camping will take away from the migratory stopover site and nesting habitat for waterfowl and passerines, including the state listed Cerulean warbler and hooded warbler. The animals cannot speak for themselves, so we have to speak for them. Do not ruin their environment!!!

Historical and Cultural Significance

Duck Lake State Park bears a rich historical legacy, including evidence of indigenous culture, the former 1840's Mears Sawmill and associated settlement including a cemetery, notable Boy Scout camps, and shipwrecks that comprise an underwater maritime preserve offshore. This historical context adds depth and significance to the park, allowing visitors to connect with the area's heritage.

Comments:

1. More boats allowed on the lake will just ruin the rich historical legacy you say is so important.
2. It is important to the cemetery in the dunes between Scenic and Lake Michigan
3. I have looked for the cemetery on several occasions and have never found it. I would like to know more the history of the area.
4. Agree completely
5. Agree
6. A treasure !!
7. Make an effort to locate relics from the Scout camps and sawmill/trading post.

Waterfowl Hunting

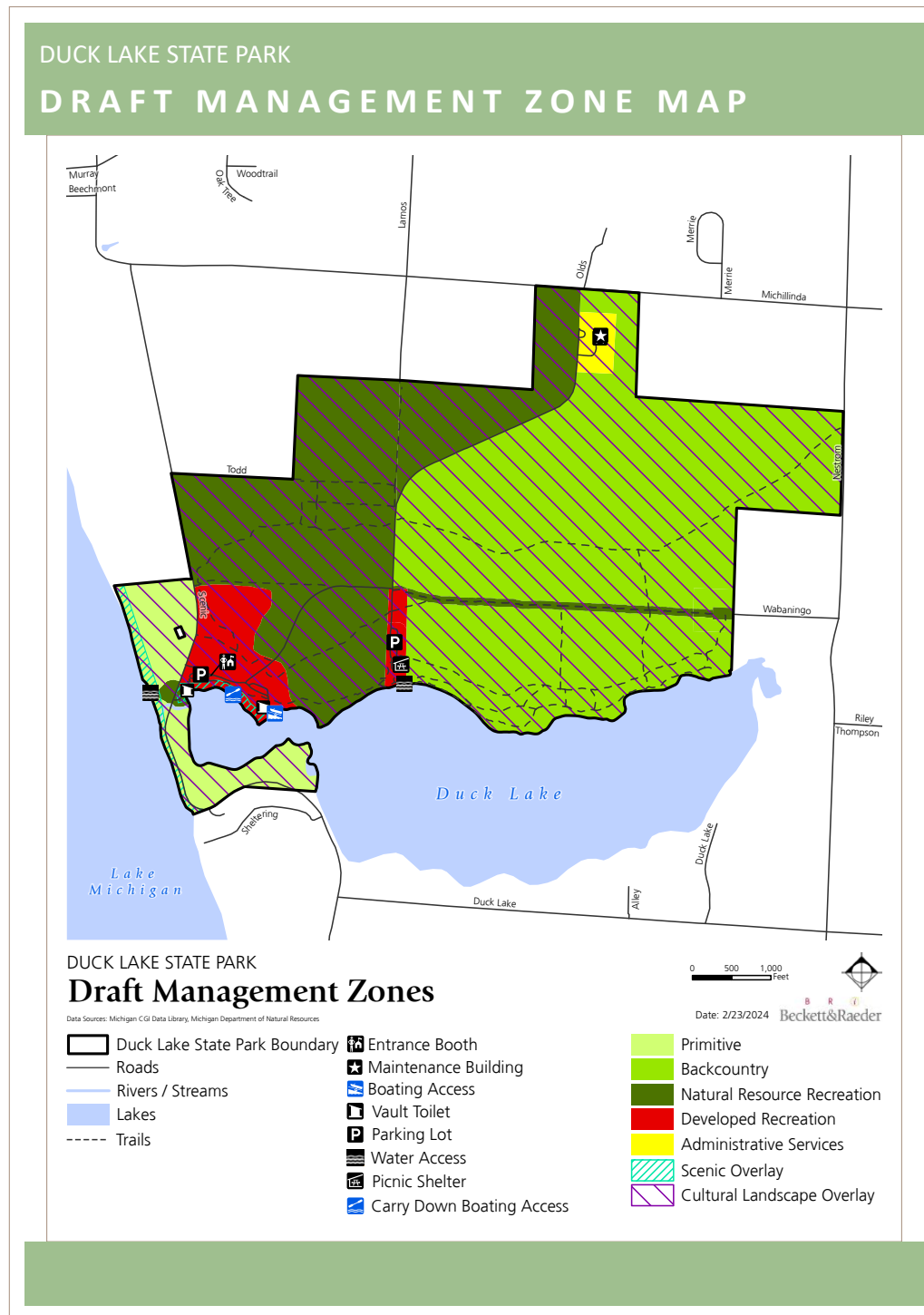
Duck Lake State Park is a favored destination for hunting enthusiasts, particularly those interested in waterfowl hunting. The park's location and its status as a migratory pathway make it an ideal spot for those seeking a rewarding hunting experience.

Comments:

1. The waterfowl hunters love this lake and get great use out of it.
2. Adding more boats and campers to the lake will just put the hunting enthusiasts into a more dangerous situation and make the waterfowls leave and ruin the hunting environment for everyone.

General Comments

Add health improvement to significance measurements. Walking, paddling, swimming!














MANAGEMENT ZONE	COMMENT
Primitive	The labeling of this zone as primitive sounds good as far as being underdeveloped and little used, but this is the main area that gets the overflow when the channel area gets overcrowded.
Developed Recreation	This zone is much too big. It only needs to be large enough to accommodate parking, restrooms, and the boat launch. Any expansion of the existing parking will just support over use. Don't ruin a good thing.

DUCK LAKE STATE PARK

TEN-YEAR ACTION PLAN

The following 10-year actions 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 3-5 years. Priority Level 3 projects are desired, but can be tackled in the next 6-10 years, once funding has been identified.

MANAGEMENT & OPERATIONS

ACTIONS	PRIORITY	VOTES
Seek alternative energy solutions for all current and proposed facilities to work towards energy independence at the park.	Ongoing	 11
Continue to explore land acquisition within the Project Boundary.	Ongoing	 15
Review all proposed earthwork activities for potential impact to cultural resources.	Ongoing	 3
Continue to work proactively to develop and implement measures to prevent, detect and control invasive species, including treatment to protect against hemlock woolly adelgid.	Ongoing	 34
Consider education programming at the park as part of the Nature Awaits program for fourth grade students.	1	 10
Complete a Natural Resources Stewardship Plan for the park, identifying targets for conservation and related natural resource management strategies, including invasive species management.	2	 13
Analyze the existing trail system and make any improvements to the routing and wayfinding signage as necessary.	2	 24
Work with the township to consider appropriate access to and protection of the cemetery.	2	 7
Analyze options and make recommendations for improvements to the bathroom facilities at the Lake Michigan day-use beach area.	2	 31
Explore and evaluate the feasibility of adding limited rustic lodging opportunities to the park.	3	 10
Develop an interpretation plan for the park that highlights historic and natural resources, considering digital media.	3	 7

 Vote from Public Meeting










 Vote from Online Questionnaire

DUCK LAKE STATE PARK

TEN-YEAR ACTION PLAN

The following 10-year actions 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 3-5 years. Priority Level 3 projects are desired, but can be tackled in the next 6-10 years, once funding has been identified.

INFRASTRUCTURE & DEVELOPMENT: CAPITAL OUTLAY

ACTIONS	PRIORITY	VOTES
Analyze the options for improvements to the park headquarters by either adding a well and septic system to the existing headquarters building to enable the addition of a restroom and expansion for the office/ breakroom area, or consider an alternate location for a new headquarters building.	2	 7
Implement the improvements to the park headquarters building or construct a new headquarters building at an alternate location.	2	 2
Replace the contact station.	2	 3
Repair and replace the boardwalk to the Lake Michigan beach and consider ways to discourage pedestrian crossing of the Lakeshore Drive bridge.	2	 30
Develop an accessible kayak launch on the Duck Lake shoreline.	2	 20
Create an accessible trail loop.	3	 16
Design and implement accessibility improvements at the Duck Lake beach and picnic area.	3	 10
Design and construct an expansion to the Lake Michigan beach day-use and boating access site parking lots.	3	 8
Perform a Phase 1 archaeological survey in the area of the parking lot expansion.	3	 4

 Vote from Public Meeting


 Vote from Online Questionnaire

DUCK LAKE STATE PARK



TEN-YEAR ACTION PLAN

The following 10-year actions 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 3-5 years. Priority Level 3 projects are desired, but can be tackled in the next 6-10 years, once funding has been identified.

INFRASTRUCTURE & DEVELOPMENT: SMALL PROJECTS

ACTIONS	PRIORITY	VOTES
Develop a small trailhead parking lot at the Wabaningo Road entry.	2	 35

PARTNER PROJECTS

ACTIONS	PRIORITY	VOTES
Continue to work with the Duck Lake Association and Township to re-open the channel to Lake Michigan when blocked with sand.	Ongoing	 2
Continue to work with external entities to support regional trail and connector initiatives as they may impact the park.	Ongoing	 18

-  Vote from Public Meeting
-  Vote from Online Questionnaire

Action Plan Comments - Management & Operations

ACTION	COMMENT
Consider education programming at the park as part of the Nature Awaits program for fourth grade students.	Again talk to Friends of Fruitland Township Trails :) about upcoming teacher-led nature studies across the township.
Analyze options and make recommendations for improvements to the bathroom facilities at the Lake Michigan day-use beach area.	YES!
Develop an interpretation plan for the park that highlights historic and natural resources, considering digital media.	Yes- call videographer about future programs! K. Kotos 231-268-0392

Action Plan Comments - Infrastructure and Development: Capital Outlay

ACTION	COMMENT
Develop an accessible kayak launch on the Duck Lake shoreline.	Doesn't the parking lot also get used as a kayak launch?
Create an accessible trail loop.	What trails are not accessible? Support for ADA compliance.

Action Plan Comments - Infrastructure and Development: Small Projects

ACTION	COMMENT
Develop a small trailhead parking lot at the Wabaningo Road entry.	And how about some bike racks at trail entrances?

Action Plan Comments - Partner Projects

ACTION	COMMENT
Continue to work with external entities to support regional trail and connector initiatives as they may impact the park.	Call Friends of Fruitland Township Trails to discuss township trail planning. 231-286-2149

Action Plan Comments - Miscellaneous

1. Please no camping in the park.
2. I really like the horse back riding trails idea. (one voting dot)
3. Expand boat parking? Can the lake handle more powerboat traffic? Lake open to residents and park visitors.
4. Please give the kayaks their own parking, so the 14 boat trailer spots can be used by boats. (One additional comment affixed to this note says "Agreed")
5. Please shift the boat launch dock so 2 trailers can use it concurrently.
6. Rustic camping with first come first serve sites/dates
7. Please no bikes, especially e-bikes. (one voting dot)
8. No more motorized boat traffic spaces on the lake!
9. How about a large area for dogs to run free? (One comment affixed to this note says "I 2nd this")
10. Please make it possible to allow day rides with horses (Six voting dots)
11. Please let horses in the backcountry
12. Please consider equestrian trails backcountry. :)
13. Please welcome people with horses September 15- November 14 and January 1- May 15
14. I would love to see horse trails developed in DLSP. There would be lots of support for this.

Public Input Meeting and Online Comments

Do you agree with the park Significance Statements?

Would you add or change anything to the statements?

1. Yes
2. Yes, I would add this should remain a day use park. I've seen an increasing amount of camp fires at night in the park.
3. Yes
4. Yes, they look very good
5. Welcome people with horses after sep 15-may 15 not nov-dec 31 in the back country zone
6. This park and lake offer a unique opportunity to study the differences between the hydrology and water quality inputs to the lake from the park side (N) and the developed residential (s) sides of lake. Weed growth has increased significantly over the decades.
7. We feel you should consider the park a great success just the way it is!! Thank you.
8. We are in agreement with proposed management plan to keep this pristine area intact.
9. These are all really good and fitting.
10. Protection of the natural area needs to be emphasized. Fruitland Township is undergoing growing pains with ordinances and enforcement needing to prevent further overuse and over-development. Duck Lake State Park is in a position to maintain some natural area where a rural area is becoming increasingly suburban.
11. Preserve and protect the Parks natural setting!! Campers and more boats will ruin this precious asset!!
12. Over the last 10 years I have already since an increase in the number of boaters on the lake and it is getting to a point of unsustainability. I have spent most of my hours on the lake fishing (Both shore fishing and non motorized boat fishing). I have seen a shift in the habitat that supports fish, as the boat traffic has increased. I am concerned that such a small lake will not be able to support increased boat traffic, both for wildlife and for safety of those using.
13. No camping!!!!
14. It would be great to see more collaborative projects between the Duck Lake Riparian Association and the State Park. Currently the Association monitors the lakes waters for purity and invasive species and works on controlling the lake from dangerous threats by the invasive eurasian watermilfoil.
15. It should be a major goal of the park's management strategy to limit power boating to sustainable levels that respect other users, including strict regulation of wake boats. No increases in power boating should be supported. The park's lands and recreational opportunities should be managed in ways that contribute to preservation of water quality and biological diversity on Duck Lake.

16. Do not add camping sites. It will be a environmental disaster

Do you agree with the Draft Management Zones? If not, what would you change?

1. Smaller developed recreation footprint, Backcountry line N/S from Lamos, East of Lamos Backcountry (See drawing)



2. See #3
3. I do not agree with expanding boat trailer parking. Designated kayak parking would be fine but from a safety stand point and fish management stand point, this small lake is way over pressured.
4. The primitive zone along the dunes facing Lake Michigan will get a lot more use if more crowding of the channel is allowed. That's where the overflow of people often goes. The developed recreation zone is much bigger than it should be.
5. Yes
6. I agree with the current zones
7. Welcome people with horses as stated above.
8. No. Limit parking to existing quality. Increasing the parking will over load the park even more and there will only be more people and more vehicles that, in the summer particularly, will still have overflow of vehicles on the road. Limit people and stress on the park by limiting parking.

Are there any additional Action Items you would like to propose?

1. None
2. Open 1 main path from Wabadingo to Duck Lake up to bikes with the trail as is, no paving necessary
3. Remove the concrete barrier under the bridge to make a clear walkway under the bridge, to and from Lake

- Michigan as an alternate way to reach lake Michigan other than the boardwalk
4. Do a land swap with Fruitland twp. Allow the Township to expand Marcus Park, take property on Nestrom Road in Trade
 5. Equestrian Trails in Backcountry w/ open grass or gravel parking for horse trailers. We don't need fancy, we are hard working and will help with trail work. The other side of state has great trails that are multi-use (or separate trails), but area available for hikers, fishing, horse trails. We can Co-Exist
 6. Horse trails
 7. In favor of interpretive signage in historical boy scout area and pointing out wildlife habitat etc.
 8. A fenced dog area
 9. I would like to offer support to help locate and preserve items of historical relevance. I'm the founding member of Metal Detecting 31, located here in Whitehall and we would be honored to assist in any archaeological surveying and recovery of historical items from around the park given its rich history. These items recovered would go towards making a wonderful display for the park and would play a significant role in other proposed action items, such as the nature awaits program and to the interpretation program. We also have access to ground penetrating radar that can assist in helping out the cemetery without disturbing it. I would love a follow up to talk about how we can assist!
 10. Go back to the original plan of having a campground. Look at how this property was acquired. The intent was to have a campground. Look at Marcus Park. It came with restrictions and intent. See if the same applies to Duck Lake State Park (one red dot added)
 11. Welcome people with horses as stated above.
 12. Welcome people with horses. Develop at least 10 miles of horse friendly trails. Horses are natural creatures and help people get in touch with nature, Thank you
 13. Specifically work with local equestrian groups to analyze/develop equestrian trails.
 14. Please consider utilizing the Backcountry zone for equestrian trails. There is room for developing a trailhead parking area for horse trailers and the park could charge a day parking fee. There is interest among equestrians for trail development. As stated in the management plan by the DNR for the Backcountry Zone: "Backcountry Zone. The character of this zone is natural, with minimal evidence of human impact through recreational use. While the Primitive Zone is highly restrictive for recreational use and human impact, this zone allows for slightly increased use, including bicycle and equestrian use if appropriate, and modifications of the landscape (e.g., trail development) to accommodate that use. This zone covers 54% of the park and includes the wooded areas in the eastern portion of the park, except the area around the headquarters/shop building."
 15. Keep gate at Scenic Drive open for day use parking during winter. Assign Muskegon State Park to plow 30-40 parking spaces when more than couple inches of snow. There were only 6-7 times that plowing would have needed this past winter. Provide garbage cans at out houses by Scenic Drive and assign Muskegon State Park staff to remove trash at least biweekly. People use this park all winter. Walking into the park from Scenic Drive parking area is risky, especially for seniors and people with handicaps. Failure to provide safe entry for people with disabilities is a questionable and a probable violation of Americans with Disabilities Act.
 16. Create horse friendly trails within the backcountry area
 17. Additional parking lot for the boat ramp was discussed at the meeting last week. Neighbors were concerned that would allow for too many speed/motor boats. Why not separate/specify one parking lot for boats & one parking lot for kayaks.
 18. Add equestrian friendly trails to promote access, education, mobility, recreation, tourism, transportation, and natural emotional, mental, and physical therapy for people. Add equestrian friendly trail signs of Stop, Communicate, and Yield when approaching equestrians for hiking/bird watching/ and dog walking trails. Add "Horse Course" educational page to the Nature Awaits program. Provide mini horse meet and greet opportunities during the in person visits. Include trail etiquette information in the Nature Awaits program. Thank you for including and welcoming people with horses.

Are there any proposed Action Items you don't think should be included? If so, please explain.

1. Expanded Boat parking. Is the Lake large enough for visitors and home owners on opposite side of lake? State Park doesn't own 100% of shoreline.
2. No camping
3. Thank you. Meeting well organized!
4. No snowmobiles on trails. Beware of adding too many speed boat parking increases as it will negatively impact the lake- size of the lake is small
5. 1, No expansion of parking lots, especially boat trailer parking. 14 spots for trailers is more than enough. The lake has been crowded with power boats at times. The channel area is already very crowded during the summer. More vehicles and overcrowding should be discouraged. Paved parking at the west end of Wabaningo is unnecessary. I've parked there frequently and only sometimes see another vehicle or two. (see other for 2 and 3)
6. Yes, "J" [Explore and evaluate the feasibility of adding limited rustic lodging opportunities to the park.] I am not in favor of offering rustic lodging to the park. Guests would need to be monitored, and not all guests understand how to be a good guest toward the forest experience. Down the road you have Pioneer County Park, Muskegon State Park and Michillinda Beach Lodge.

7. Adding limited rustic lodging opportunities to the park. To me rustic "lodging" means cabins. The park is not large enough for this. There are enough camping and cabins available in nearby parks. Boating access site parking lots. When the boat access sites are filled that should be all the boats allowed into the lake. The usage by the homeowners on the south side of the lake needs to be taken into consideration. At the meeting someone mentioned adding horseback riding to the parks trails- I don't think the park is large enough to accommodate horses-hikers-dog walking-xc skiing-snowmobilers. The snowmobilers do use the trails whether or not they are supposed to. It is dangerous enough if one is walking or xc skiing and coming across snowmobilers without having horses added to the mix. Also, the horses will cause ruts in the trails over time, a disturbance to the soil not needed in the primitive area of the park.
8. Remove: r. Design and construct an expansion to the Lake Michigan beach day-use and boating access site parking lots. There has already been too much congestion on Duck Lake with the existing 14 or 15 parking spots for trailers. Roughly half of the Lake is privately owned with boat traffic coming from these homes, also. The channel is already overcrowded on nice summer days. Last summer I was at the channel on one of these days. The channel and the beach was full of people. The water wasn't moving much that day and the air smelled of urine. More parking will only enable overuse. Parking on Scenic should be limited and metered. Remove: j. Explore and evaluate the feasibility of adding limited rustic lodging opportunities to the park. See above. Overnight use does not need to be added to day use Remove: t. Develop a small trailhead parking lot at the Wabanningo Road entry. I've parked there 100 times in the past few years and only occasionally saw another vehicle.

Additional comments:

1. Brought up in meeting by another visitor- Gate open in winter/trash pickup once per week
2. I like the comment of small designated dog park area and wheelchair accessible trails and accessible kayak launch
3. Love the park. Would hate to see it decline due to over use
4. We would love to see horse trails there, away from the public beach, boating and pavilion areas. This would be a beautiful addition to the park!
5. As a lifelong resident of Muskegon County and having grown up along the Lake Michigan shoreline on Scenic Drive, I attended the ribbon cutting ceremony for Duck Lake State Park in 1988. I frequent the park yearly and enjoy its beauty and many amenities.
6. Therefore I am very interested in the general management plan and would embrace the DNR adding equestrian trails. I am an avid equestrian and volunteer my time alongside the USFS in building and maintaining trails while helping to promote recreation with respect

to our state and national forests.

7. Would love to have trails close to home, I board on McMillan, only close is dalton. Any other places are about an hour away, many people will benefit if there are more trails closer.
8. Open the park for equestrian trail riding at the old Michillinda entrance.
9. I would love to see equestrian trails at the park!!
10. It would be wonderful if equestrian/horse back riding trails could be added.
11. Horse trails closer to home is amazing!
12. It would be so nice to have equestrian trails at DLSP. I live near the area and would be glad to help build the trails
13. I am an avid horseback rider and would love to ride trails here! Please consider an equestrian trail in the development of your plans!! Thank you and happy trails, Teresa.
14. Please consider our equestrians , we are getting run down by vechicles using the side roads. We need safe places. Thank you
15. I love the idea of horseback riding at Duck Lake. It is a regular stop for me when I head north from the Kalamazoo area, and I have enjoyed hiking there. Allowing horseback riding would be another wonderful way to add to citizens' enjoyment of this park. Equestrians are good stewards of their parks and appreciate the opportunities for riding across the state. Thank you for your consideration.
16. I would be very interested in equestrian trails being a part of the management plan!
17. We would love to see equestrian trails at this park! There are many stables and horse owners locally that could use this as a destination ride to ride to from their barn.
18. This would be a park enjoyed by the equestrian community! Please consider including equestrian trails!
19. This will be a great opportunity for equestrians. DLSP is a beautiful area.
20. I'd like to encourage the ability of Equestrian trails!
21. Would love to see equestrian trails!
22. I would love more horse trails
23. Would live to have equestrian trails at Duck Lake State Park. In accordance with the plan the back country seems appropriate. Sharing with bikes is probably not a good idea but trails similar to Pigeon Creek in Ottawa County may be a solution. Bike trails cross horse trails or run parallel. More equestrian trails are needed in Michigan and this seems like appropriate area.
24. I would love to see Equestrians be able to use the trail system there! We are very mindful of nature and take very good care of the trails available to us! Thank you for making this survey available to us.
25. It sounds like you are considering horse trails. I am all for it as there just not enough trails in Michigan

26. I would love to see more equestrian trails. It's such a added, family value and wonderful to have..
27. Equestrian trails would be amazing!
28. Please add equestrian trails. They cause far less damage than mountain bikes. Equestrians are a vital part of the economy and sports world.
29. A horse trail will be a welcome addition to the park. Many people have talked about it n now nice seeing that it may become a fact. I can promise it will be well used. As Dalton Equine trails are only one in this area.
30. I would love more trails to ride in that area with my horse! It would also be a great draw to get my friends with horses to come my way more often. I could see using that trail area frequently.
31. Please consider horseback riding. There is a large population of trail riders here, and we have to trace many miles for trails. Thank you
32. I would like to attend but due to distance, unable to. Having an equestrian access would be great and bring in revenue for the state and area.
33. Hi! I live in Fruitland township and own horses.. we do not have a whole lot of great trails (nor road space) to ride on and adding horse trails to the park would be amazing! I visit Duck Lake very often and walk the shoreline of Lake Michigan.
34. I read that equestrian trails are being considered. My friends and I would DEFINITELY bring horses up there from Holland. We're always looking for places to ride.
35. In case you didn't know, the vast majority of equestrians are responsible, mature women !
36. Think the rustic lodging should be removed from the plan.
37. Do not like the idea of adding more boat parking- once the spots are full that should be all the boats allowed.
38. Do like having more info on the history of the area available.
39. Please no horseback riding allowed at the park.
40. The initial development of the park was the result of much negotiation between the state and local residents. The park in its current state is a success story. Don't ruin it by thinking more is better. The use of the channel on nice summer days is maxed out. Power boats on Duck Lake sometimes exceed reasonable limits. Improving restrooms is okay, but mainly just maintain and protect what we already have.
41. When the walkway under the bridge was first proposed, I gave feedback that Lake Michigan water levels had previously been high enough to submerge it. Unless Lake Michigan never rises like that again, any plans to repair or rebuild the walkway should be seen as temporary. A pedestrian crossing at or above the road level should be considered. 2,Rustic lodging should not be developed. The channel is the draw and does not need more than day use. 3, any walkway to the beach under the bridge will be useful only until Lake Michigan rises again.
42. Do not develop, keep the park natural

43. Please welcome people w/ horses as stated above

Online Questionnaire Feedback

Did you attend the public meeting?

ANSWER	COUNT
YES	15
NO	17

What was your satisfaction with the.....

ANSWER	COUNT
5	21
4	4
3	0
2	0
1	1

Additional Feedback

1. The interactive survey is very well thought out and presented therefore user friendly.
2. I would like to see an unsure option for the public meeting. As of today, I am not sure if I am able to attend. Also, you might want to ask people the general area they come from. Again, thank you!
3. If this survey is supposed to be feedback on horse trails, shouldn't it actually ask about them?
4. Seems to work well.
5. Put in horse trails.
6. Easy to navigate.
7. Easy
8. Getting attention on special projects in the fire
9. I appreciate being given the information and a chance to give my feedback. As to what I would add, I would like to see this put out there in a broader public forum. If I wasn't a part of an equestrian club, I wouldn't have seen this.
10. I have no complaints!
11. I did not see a survey; just the "Additional comments" section.
12. The survey was really easy to access and use. no improvements necessary
13. I appreciate the chance for input. The 1000 word limit kept me from saying more of what I wanted to say. Making comments on the zone map was an adventure.

Comments Received via Email

Email 1: Received March 17, 2024

A special thanks to all who are working on the short, and long-term plans for the future of Duck Lake State Park. We have been enjoying the park for 37 years. We are thankful for the many improvements along the way like trails, parking, a new entrance, boardwalks and more...all positive to allow more people and more enjoyment of both the park and the lake itself. We support all measures to keep the park clean and pristine both now and into the future.

Here are some concerns:

1. Rustic Camping: There are events like the Electric Forest that brings 50-60 thousand people to our community, looking for a place to camp. As such, we have had incidents where people overnighing in hammocks has already occurred in our park. Along with this overnighing, campfires, thought to be from people who attend these types of events also have already occurred. Just one campfire out of control can so easily wipe out what we've all known as "clean and pristine." The way in which our park is managed makes it a tinder box with lots of sandy dry soil and dry undergrowth that only needs a spark. All fallen trees and limbs are left to dry and rot on the forest floor to decompose keeping the park more natural. Therefore, we're very concerned about allowing for camping. Rustic or otherwise, it brings with it the advent of having campfires.
2. Camping also brings with it the big possibility of overuse. We prefer that Duck Lake remains a day park with many trails to walk or walk dogs. A place for people to picnic and enjoy the lake. In winter, Duck Lake State Park is fantastic for cross country skiing and snow shoeing. Many people enjoy hunting, and all year long people enjoy fishing. We hope it will stay that way because our current facilities and trails show that they are well used since the expansion of more people visiting the park when the new entrance was created off Scenic Drive.
3. A study of Duck Lake and the boating numbers was done some time ago. Those numbers showed that we were basically near full capacity then. An overabundance of boats simply creates safety issues. More parking for people to enjoy the park is great, however, allowing for more boat parking invites an over-capacity scenario. The lake attracts a great number of kayaks as well. With an over-abundance of boats, we are concerned that those who choose to kayak will not have the opportunity. We believe kayakers come to Duck Lake because it is clean and pristine.

In summary, we believe the long-range plan for Duck Lake State Park should be focused on "clean and pristine." A place where families and individuals can come to enjoy mother nature at her finest. It would be in everyone's best interest to preserve and promote a beautiful and tranquil place to enjoy!

Email 2: Received March 20, 2024

My name is [redacted] and my wife [redacted] and I have owned a home at [redacted] since 1985. I am the President of the Duck Lake Riparian Owners Association and have been on its Board since 2002. My first year on Duck Lake was as a Boy Scout at Camp Shawondossee in 1963 and I was on the Camp Staff the last year the camp was open in 1968. Needless to say, Duck Lake is very special to our family.

Tonight, we have heard how special Duck State Park really is, Natural, Pristine, Beautiful, Natures finest, undisturbed, and rare are but a few descriptions of Duck Lake and the Park. And it is so true that there are very few options in Western Michigan where you can hike, picnic, swim, boat or just enjoy nature and much more, in such an undeveloped natural setting.

I think it is very important to understand why the Park is what it is in 2024 and how we got here.

The pristine qualities of north shore of Duck Lake and the State Park did not just happen. It is the result of over 115 years of responsible oversight of several groups that shared a vision to "preserve and protect". I think it is important to retrace that journey.

In 1844 Lumber Barron Charles Mears bought 2000 acres, that include the State Park property, from the U.S. Government Land Office for \$1.25/acre. By the end of the century the much of area was clear cut and lumbered off. In 1885 you could look east from the intersection of Duck lake Rd and Nestrom and see Lake Michigan. The Park today is primarily natural forest regrowth and is nearly 150 years old.

In 1907 The Chicago YMCA bought property from the descendants of t he Mears & Austin families and in 1921 the Boy Scouts bought the property as we know it today. For 50 Years the 2 Boy Scout camps were wonderful stewards of the property and they truly did preserve and protect.

In 1968 the scout camps moved to other locations and the property was put up for sale. After a scare from a developer attempting to subdivide the property for several hundred homes, the nature Conservancy in Washington DC purchased the property in 1972 and continued the tradition of "preserve and protect". In 1974 the State of Michigan purchased the property from the Nature Conservancy and the DNR began formulating a master plan that resulted in a contentious 6 year process. The DNR master plan called for 200 camp sites, parking for 500 cars, a concession stand, and over 300,000 annual visitors. A local citizen group formed in opposition. The organization, C.A.L.M. (Concerned About Land/Water Management), spend 1000's of hours battling the development. In 1980, after 300 residents went to Lansing for 3 days of DNR Hearings, the plan was defeated.

In 1983 the DNR formed the Duck Lake State Park Advisory Committee that was made up of local residents and Park officials and a new master plan was designed and accepted in 1984. The Park as it is today, was dedicated in 1988.

The point of this historical review is that we should never forget over 100 years of stewardship that has perpetuated the pristine nature of this rare and special public land asset. It was a long and at times difficult journey. Two generations before us strived hard to "preserve & protect".

Now more than ever, all parties involved, should work together and continue to embrace the priorities that have made the park what it is today.

Email 3: Received March 25, 2024

I have been coming to Duck Lake for 60 years since I was a scout at Camp Wabaningo from Evanston, IL.

I strongly object to expanding the capacity. It would disturb the wonderful natural environment that we have come to revere.

Email 4: Received March 29, 2024

My name is [redacted] and I am with the Michigan Horse Council as their Trails Committee Chair.

I would like to thank you for your wonderful presentation and meeting regarding Duck Lake State Park. It was very informative and had an amazing turn out!

I am writing to you this morning in support of equestrians gaining access to the east/back half of the park. I have been working with the Friends of Fruitland township Trails, along with the township supervisors, to open up more opportunities for our local equestrian community. This would be such an asset to the area. We have many boarding barns in the area that would be able to ride from their barns to Duck Lake State Park! We are a self regulating trail user group. Many volunteer countless hours to build and maintain trails we do have access to, which results in less garbage found along the trails and nice, trimmed trails for all trail users!

Thank you for your time and consideration! I hope we can work together to bring this idea to fruition!

Email 5: Received March 30, 2024

I attended the public meeting on March 20, and asked a question about increased parking, specifically boat trailer parking. I was surprised that none of the state officials present seemed to be aware of limits previously set on trailer parking spots. I shouldn't have been surprised because none of the state officials currently involved were working on the

development of the original plan. My family moved to Duck Lake in 1983. I was not involved in developing the original plan, either, but I heard much about what went into it from older friends and neighbors on Duck Lake.

I was disappointed at the lack of awareness about the impact of power boats on Duck Lake. Fishing boats, sail boats, paddlers, and even slow cruising pontoon boats don't have the adverse effect on the lake that jet skis, wake boats, and speed boats do. I've seen boats three abreast pulling skiers, wakeboards, or tubers circuiting the lake, having trouble staying 100 feet apart. The drivers were having difficulty navigating safely, not to mention the resulting wake that challenged paddlers and added to shoreline erosion. Some days there are already too many power boats on Duck Lake without the thought of adding more.

I'm also concerned about the planned expansion of other car parking spaces. The parking lot at the pavilion usually has plenty of empty spaces. More parking at the channel will only add to the overuse of that area. The shallows of Duck Lake Channel have always been a big draw. Parents and children like being able to swim and wade there. With the hundreds of people in that area on a nice summer day, one would think the restrooms would be quite busy. But actually people are going in the water instead. Last summer I was at the channel on one of these nice, still days and the channel area smelled of urine. This is over use.

My third concern about the proposed management plan is the possibility of rustic lodging. Any overnight use will only increase the traffic to the maximized day use of the channel and boating. The possible development of rustic campsites was included in the previous park plan. Does the exploration of rustic lodging in the current plan mean the possibility of cabins or yurts?

Thank you for taking these concerns seriously. I would like to know your reaction and whether cabins and yurts are going to be considered.

Email 6: Undated

As a descendant of the Snyder Family that homesteaded land south and west of Duck Lake, I have enjoyed swimming, boating, walking trails, ice skating and playing around Duck Lake since my childhood. I remember when my parents told me about, and walked me through the Boy Scout camps that operated on the North side, until the state transformed the land into the beautiful state park that it is.

I would like to reinforce the concerns that were expressed by [redacted], and add one more of my own:

That is, I would repeat the request that I made to park

managers as much as 10 years ago. As co-chair of Friends of Fruitland Township Trails, a non-profit group that has worked with our township to protect and build trails in the township-owned Duck Creek Natural Area, many of us have always dreamed that the Natural Area would be a centerpiece of nonmotorized trails that would connect the Berry Junction Trail (near Michigan Adventure's Amusement park), WITH Lake Michigan, most efficiently with a simple bike trail into Duck Lake State Park, via Wabaningo Road on the eastern edge of the park.

Now the walking trail from the Western end of Wabaningo Road bars bicycle riders from connecting with the parks paved roads (nearest the pavillion and beach), paved roads which now ARE bicycle accessible, leading to Lake Michigan or the gate on Michilinda Road. We would like to see this mile portion (from unpaved Wabaningo Rd, to the pavilion) reopened to non-motorized bicycle traffic. In the past it was used by careful bike riders, leaving very little evidence of damage to the terrain.

Please give thought to the fact that Duck Creek, which is spring fed, and passes through the DCNA is a major tributary to Duck Lake, and our planned trails there, cross and follow Duck Creek before it emerges into the Lake at Nestrom Road. This water is safe and clean now, and adds much to the enjoyment of this park.

Please consider a bicycle trail in Duck Lake State Park as another effort from all of us here to keep our state park "Clean and Pristine"!

Appendix C:

Opinion of Probable Costs

C.1 State Park Funding

The primary funding sources for state park improvement and development projects are Recreation Passport sales (motor vehicle registration fee), the Park Endowment Fund (generated from royalties from oil, gas and mineral extraction on public land) and the Park Improvement Fund (from camping and other state park user fees). The annual capital outlay budget for state parks varies significantly from year to year, averaging approximately \$14 million per year over the past five years. Although this funding will have a big impact, the amount of need is still estimated to be in the hundreds of millions due to the aging infrastructure in the state park system.

With such a large gap between financial need and budget, all projects are carefully analyzed to look at innovative solutions to increase efficiencies or downsize assets.

C.2 Estimated Cost of Proposed Developments

The following table provides an estimate of probable cost for each capital outlay development project proposed at Aloha State Park over the next ten years. Management and operations actions, small projects, which are funded out of district or park funds, and those lead by partners, are not included in this list but may have additional financial

implications. The costs are based on information available at the time and will be refined as conceptual and detailed designs are completed. Where noted, the costs may only include studies or project planning, which will provide direction for development costs if determined appropriate. The costs are based on 2022 prices and should be adjusted according to the consumer price index and the market at the time of implementation.

The following action items are ranked in terms of priority based on health, safety, and welfare, as well identified need and 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.

PRD will seek future internal funding, alternative funding sources, partnerships and other potential mechanisms for implementing the desired future conditions defined in this plan. Costs listed below do not guarantee funding. 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.

Infrastructure and Development: Capital Outlay Opinion of Probable Cost

ACTION ITEMS	PRIORITY	OPINION OF PROBABLE COST
Analyze the options for improvements to the park headquarters by either adding a well and septic system to the existing headquarters building to enable the addition of a restroom and expansion for the office/breakroom area, or consider an alternate location for a new headquarters building.	2	\$50,000.00
Implement the improvements to the park headquarters building or construct a new headquarters building at an alternate location.	2	\$750,000.00
Replace the contact station.	2	\$30,000.00
Repair and replace the boardwalk to the Lake Michigan beach and consider ways to discourage pedestrian crossing of the Lakeshore Drive bridge.	2	\$500,000.00
Develop an accessible kayak launch on the Duck Lake shoreline.	2	\$200,000.00
Create a trail loop compliant with the Americans with Disabilities Act.	3	\$600,000.00
Design and implement accessibility improvements at the Duck Lake beach and picnic area.	3	\$400,000.00
Design and construct an expansion to the Lake Michigan beach day-use parking lot to address parking concerns in coordination with the county road commission.	3	\$600,000.00
Perform a Phase 1 archaeological survey in the area of the parking lot expansion.	3	\$40,000.00
	TOTAL*	\$3,170,000.00

*Excludes costs yet to be identified by studies to determine best way to proceed and costs associated with projects that are already funded.



A view of the undeveloped forest, with downed logs, a carpet of moss, and a mix of evergreen and deciduous trees

Appendix D:

On-Site Survey Report

Duck Lake State Park 2018 On-Site Use and User Study Report

By Charles M. Nelson and Kali Maisano, Department of Community Sustainability

Michigan State University, East Lansing, MI 48824

March 21, 2018

Introduction

As part of the management planning process for Duck Lake 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 – October of 2018. It used a windshield survey at the day-use parking area. No campers were surveyed as the park does not provide family camping.

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, in 2017 at seven other Michigan State Parks and Recreation Areas (Indian Lake, Palms Book, Pontiac Lake, Proud Lake, Rifle River, Saugatuck Dunes and Warren Dunes) and in 2018 at five other Michigan State Parks (Algonac, Clear Lake, Fort Wilkins, Holland and Traverse City). A sampling calendar of 27 sample days was developed that proportionally allocated sampling days across June- October 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 at Duck Lake SP on June 27, 2018.

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 and time of day 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 lower 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 Duck Lake of the 27 sampling days scheduled, 27 days were successfully sampled for day-users.

This method does not capture input from those arriving by bicycle, on foot, or public transportation, 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.

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 17 scheduled sample days in Summer and 10 in Fall. The full complement of 27 days were sampled. Table 1 shows that a total of 1,511 vehicles were counted in day-use parking areas over the 27 completed day visitor sample days (1,382 vehicles in the summer and 129 in the fall) with a total of 1,189 questionnaires distributed (1,061 questionnaires in summer and 128 in fall) in day-use lots. The busiest day-use lot was the Park Entrance/Lake Michigan Lot. For four days during the summer the lot had more than 50 vehicles parked. For one day during the summer, more than 50 vehicles were legally parked along the road adjacent to the park.

Survey Results: Uses

One hundred ninety-eight completed questionnaires were returned by day-use respondents as of the November 28, 2018 cutoff (one month after the last day sampled). The response rate for day visitors was 17%.

Activities and Party Characteristics

The average amount of time a day visitor vehicle was parked where it was sampled for day visitors was 3.1 hours and the mean day visitor party averaged 2.9 people per vehicle. A number of day visitors were grouped with others in other vehicles as the mean day visitor group had 5.5 people.

A total of 6 percent of day-use 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 day visitors in order of participation were swimming, sunbathing, hiking, picnicking and nature observation.

When day visitors were asked the one most important park activity to them, they were in descending order, swimming, hiking, sunbathing, fishing and paddling canoe/kayak (Table 3).

One unique question asked at this park focused on where day visitors stayed the night prior to being sampled at the park. The most common previous night origin was at their own home (Table 4). Another 15% lodged either at a hotel/motel or rental cottage or camped. The rest lodged at their own second home or the home or second home of another.

Local Spending

Park visitor spending in the local area of Duck Lake SP was substantial (Table 5). Day visitor spending in the 24 hours prior to being surveyed within 20 miles of the park averaged \$95 per vehicle with 79% of respondents spending something in the local area. The greatest portion of day visitor spending was on lodging fees and grocery and convenience store food and drink.

Satisfaction

When asked to rate their satisfaction with their Duck Lake SP experience the day they were sampled, day visitors had very high rates of satisfaction, with a mean rating of 8.5 on a scale of 1 – 9 where 1 is highly dissatisfied, 5 is neutral and 9 is highly satisfied (Table 6). Seventy percent of day visitor respondents gave their experience the highest satisfaction rating (9). Two percent of day visitor respondents rated their experience as dissatisfying, with two percent rating it as neutral.

When asked an open ended question about the one most important reason for their experience rating, day visitors were most likely to mention enjoying the beach/lakes. Other common positive comments were that the park is clean and well maintained and patrolled, was a generally wonderful experience and they enjoyed the natural appearance of the park (Table 7). Of the few concerns expressed by day-users as rationale for their rating, concerns were most likely to be citing poor park facilities (e.g. restrooms, etc.) and a sense of being overcrowded.

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 to see at Duck Lake 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. For day visitors, the three most frequent suggestions in descending order were nothing to improve or change, improving park maintenance and providing easier access to Lake Michigan (Table 8).

When asked what one most important thing should not be changed at Duck Lake SP (Table 9), day visitors were most likely to suggest not changing access to Lake Michigan and Duck Lake. They also were likely to support keeping the facilities the same and maintaining the natural appearance of the park.

Demographics

For distinct day visitors, the mean age was 47, with ages ranging from 19-86. Of day visitor respondents, 72% were female and 28% male.

The large majority of distinct day visitors were Michigan residents (Table 10). The most common day visitor origins following Michigan were Illinois and Ohio. For distinct day visitors, the five most common zip codes were 49445 (Muskegon), 49441 (Muskegon), 49525 (Grand Rapids), 49461 (Whitehall) and 49457 (Twin Lake).

Summary

Duck Lake is a relatively new state park in western Lower Michigan. It provides good access to both Lake Michigan and to Duck Lake, including beaches on both and a BAS for Duck Lake. In addition, it has a mature and stately forest of hardwoods intermingled with some evergreens and easy access through a non-motorized trail system as well as relatively little underbrush as many trees provide dense shade. It does not provide a family campground. These attributes tend to attract many nearby residents, but the park is likely much less known to the public away from Muskegon and adjacent counties in comparison to other nearby state parks such as Muskegon, Hoffmaster and Silver Lake, due to its lack of camping, which the other parks provide.

The overall satisfaction rating for day visitors at Duck Lake SP was very high with almost no negative ratings and few negative comments related to satisfaction. When asked about improvements, day visitor respondents sought improvements in park maintenance, easier access to Lake Michigan and updated facilities such as restrooms. They also suggested providing additional parking and an improvement to the existing non-motorized trail system. A few mentioned adding camping, which would likely significantly increase park use, provide additional revenue to the DNR as well as additional management expense and increase local tourism spending. It is likely that the addition of a 100 plus site modern campground would also change the character of the park resulting in more use of all facilities and changing the maintenance and operations approach.

Park visitors do spend moderately in the local area, but with many originating in the local area there is likely not a large economic impact related to park visitor spending. Again, if a substantial modern campground was developed it would very likely bring in those beyond Muskegon County and increase the economic value of the park to the area. It would also change the character of the park making it a 24/7 operation.

Acknowledgements

The authors would like to thank Michigan DNR Park and Recreation Division permanent and seasonal field staff for their distribution of the survey instrument, record keeping of the number of surveys distributed and counting vehicles during sampling. We also greatly appreciate the cooperation throughout the project with Division Planning staff.

Appendix A. Tables of Results

Table 1. Vehicle counts and surveys distributed on-site 2018 at Duck Lake SP day-use areas.

PARKING LOT/AREA	SUMMER COUNT	SUMMER SURVEYS DIST.	FALL COUNT	FALL SURVEYS DIST.	TOTAL COUNT	TOTAL SURVEYS DIST.
Park entrance/L MI lot	819	520	44	44	863	564
Duck Lake BAS lot	78	76	10	10	88	86
Duck Lake Beach Lot	145	131	18	18	163	149
Legal parking along road adj. to park	338	332	46	45	384	377
North Day-use lot	2	2	11	11	13	13
Total Day-use Lots	1,382	1,061	129	128	1,511	1,189

Table 2. Percent of Duck Lake SP respondents participating in selected recreational activities during sample day in 2018.

ACTIVITY	DAY VISITORS
Swim	67%
Sunbathe	56
Hike/walk	41
Picnic	21
Nature observation	20
Photography	18
Fish from shore	10
Paddle canoe/kayak	9
Fish from a boat	7
Bicycle on a paved road	4
Hunt/Scout	2
Pick berries/mushrooms	2
Metal detect	2
All other activities	16

Table 3. Percent of Duck Lake SP respondents citing one most important recreational activity during sample day in 2018.
(a)

ACTIVITY	DAY VISITORS
Swim	48%
Hike	11
Sunbathe	9
Fish	8
Paddle canoe/kayak	7
Picnic	1
Nature observation	1
Bicycle	1
Photography	<1
Pick berries/mushrooms	<1
All others	
Total	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 Duck Lake SP in 2018 (a).

ITEM	DAY VISITORS (MEAN \$ SPENT SOMETHING)
Lodging fees	\$26 (14%)
Grocery and convenience store food & drink	\$25 (51)
Restaurant & bar meals & drinks	18 (41)
Vehicle related	16 (46)
Sporting goods	4 (9)
All other items including souvenirs	6 (11)
Total	\$95 (79%)

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

Table 5. Lodging of Duck Lake SP respondents the evening prior to being sampled 2018.

LODGING	PERCENT
Own home	76%
Hotel/motel/rental	8
Campground	7
Another's home/2nd home	5
Own 2nd home	3
Other	1
Total	100%

Table 6. Rating of satisfaction with Duck Lake SP use experience by respondents on the day sampled in 2018.

RATING SCALE	DAY VISITORS
1 (very dissatisfied)	0%
2	<1
3	<1
4	1
5 (neutral)	2
6	<1
7	8
8	19
9 (very satisfied)	70
Total	100%
Mean Rating (a)	8.5

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

Table 7. Response to open-ended questions about one most important reason for satisfaction rating with Duck Lake SP use by on-site respondents on the day sampled in 2018. (a)

REASON	DAY VISITORS
Like lake/beach/swim area	19%
Clean, well maintained/patrolled	16
Generally like, wonderful, amazing	13
Nature, wildlife, quiet	13
Positive interaction with others	7
Poor facilities	4
Like trails	3
Good parking/shaded parking	2
Good facilities	2
Overcrowded	2
Positive, friendly staff	1
Convenient, close to home	1
Poor fishing	1
Poor water/beach access	1
Other positives with one response or hard to classify	4
Other negatives with one response or hard to classify	1
Total	100%

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

Table 8. Response to open ended question about one most important improvement at Duck Lake SP by distinct on-site user survey respondents in 2018 (a).

IMPROVEMENT	DAY VISITORS
Nothing to improve/change	23%
Improve park maintenance	22
Improve water/beach access	13
Update and increase amount of facilities (e.g. showers, rest rooms, etc.)	10
More parking	9
Improve non-motorized trails	8
Provide family campground	4
Change park rules	2
Have rental watercraft	2
Have more park information available	2
Other suggestions made by one respondent or difficult to classify	5
Total	100%

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

Table 9. Response to open ended question about one most important thing not to change at Duck Lake SP for distinct on-site user survey respondents in 2018. (a)

DON'T CHANGE	DAY VISITORS
Don't know/Keep as is	26%
Lake/beach	21
Facilities	10
Nature/wildness/quiet/wildlife	8
Parking	6
Easy access to park as a whole	6
Rules/regulations	4
Trails	4
Weekend events	4
Hours of operation	2
BAS for Duck Lake	2
Staff/personnel	1
Other hard to classify or less than 1% of responses	6
Total	100%

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

Table 10. Origins of distinct park visitors to Duck Lake SP by state for on-site user survey respondents in 2018 (a)

STATE	% DAY VISITORS ORIGINATING
Michigan	86%
Illinois	5
Ohio	3
Indiana	2
Maryland	1
Colorado	1
Massachusetts	1
All other states	<1
Total	100%

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

Appendix B. On-Site Questionnaire

Duck Lake State Park Use Assessment _____ Date

Dear Driver:

MSU and the Michigan DNR are cooperating to measure recreation use of Duck Lake 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 marked "Park Surveys". 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 ___ Picnicking ___ Sunbathing

___ Fishing from boat ___ Hunting/Scouting ___ Swimming

___ Fishing wade/shore/dock ___ Metal detecting

___ Pick berries/mushrooms

___ Nature observation (birding, etc. ___ Other(_____))

2. Which ONE activity was the MAIN reason to visit 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 an impairment that

seriously limits his/her participation in work or recreation? ___ Yes ___ No

7. Where did you stay last night (check one)?

___ Own principal home ___ A 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 Duck Lake 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 (boat rental, firewood, souvenirs, ice, 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 Duck Lake SP experience. #_____ Rating

10. What is the ONE most

important reason for your rating? _____

11. What ONE change would you

recommend to improve Duck Lake SP? _____

12. What ONE thing would you recommend

not change at Duck Lake 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 Duck Lake SP in 2017 (last year)? _____ #days

Thanks for your help in improving the management of Duck Lake SP.

Dr. Chuck Nelson, Project Director

MSU Dept. Community Sustainability, 480 Wilson Rd.,

East Lansing, MI 48824 Phone (517) 432-0272 nelsonc@msu.edu _____Site

Appendix C. Duck Lake Sampling Schedule 2018

- 27 sample days prescribed, 27 accomplished in day-use lots.
- Based on Summer and Fall use levels per 2017 DNR park use data
- For our study purposes
 - o Summer sampling June-August
 - o Fall sampling September- November
- Sample days are scheduled with 2/3 on weekdays and 1/3 on weekends similar to calendar.
- Duck Lake SP sampling will begin at one of the following times each sample day: 9 AM, Noon, 3PM and 6PM.

Appendix D. Duck Lake State Park Planned On-Site Sampling Calendar 2018

Day	Date	Start Time	Personnel
Wed	6/27	3PM	
Sat	6/30	9AM	
Tue	7/3	Noon	
Sun	7/8	9AM	
Mon	7/9	3PM	
Sun	7/15	Noon	
Thu	7/26	9AM	
Fri	7/27	3PM	
Sun	7/29	3PM	
Tue	8/7	3PM	
Fri	8/10	6PM	
Wed	8/15	Noon	
Sat	8/18	6PM	
Mon	8/20	9AM	
Thu	8/23	Noon	
Sat	8/25	Noon	
Mon	8/27	3PM	
Thu	8/30	6PM	
Thu	9/6	Noon	
Tue	9/11	9AM	
Fri	9/14	6PM	
Sat	9/15	Noon	
Wed	9/19	3PM	
Mon	9/24	9AM	
Mon	10/1	6PM	
Sat	10/13	9AM	
Sun	10/28	6PM	

Appendix E:

Agreements

WARRANTY DEED

THIS INDENTURE, Made this 28th day of February, in the year of our Lord one thousand nine hundred and seventy-four between THE NATURE CONSERVANCY, a non-profit corporation incorporated under the laws of the District of Columbia, with its office and principal place of business at 1800 North Kent Street, Arlington, Virginia 22209, party of the first part, and STATE OF MICHIGAN, Lansing, Michigan 48926, party of the second part,

WITNESSETH, That the said party of the first part, for and in consideration of the sum of Seven hundred eighty-four thousand five hundred dollars (\$784,500.00), to it in hand paid by the said party of the second part, the receipt whereof is hereby confessed and acknowledged, and acknowledging gift consideration valued at \$15,500.00, does by these presents, grant, bargain, sell, remise, release, alien and confirm unto the said party of the second part, and its successors and assigns, FOREVER, all that certain piece or parcel of land, situate and being in the Township of Fruitland, County of Muskegon and State of Michigan, more particularly described in Schedule "A" attached hereto and made a part hereof.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining.

As part consideration for this deed and by acceptance thereof the Grantee agrees to erect and maintain a permanent plaque or other appropriate marker at a prominent location on the within described premises bearing the following statement: "This area was acquired with the assistance of The Nature Conservancy."

TO HAVE AND TO HOLD the said premises, as herein described, with the appurtenances unto the said party of the second part, and to its successors and assigns, FOREVER.

USE 1033

And the said party of the first part, for itself and its successors, does covenant, grant, bargain and agree to and with the said party of the second part, its successors and assigns, that at the time of the ensembling and delivery of these presents it is well seized of the above granted premises in FEE SIMPLE; that they are free from all encumbrances whatever, except covenants, restrictions and easements of record, and that it will and its successors shall forever WARRANT and DEFEND the same against all lawful claims whatsoever, except as above set forth,

IN WITNESS WHEREOF the said THE NATURE CONSERVANCY, a non-profit corporation incorporated under the laws of the District of Columbia, has caused these presents to be signed in its name by its Executive Vice President and Assistant Secretary and sealed with its corporate seal, the day and year first above written.

THE NATURE CONSERVANCY,
a non-profit corporation incorporated
under the laws of the
District of Columbia

Signed, sealed and delivered
in the presence of:

Susan H. Leonard
Susan H. Leonard
Eveleen Henry
Eveleen Henry

By G. Jon Roush
G. Jon Roush
Its Executive Vice President

By Richard G. Traurig
Richard G. Traurig
Its Assistant Secretary

This Instrument was Prepared By:

Richard G. Traurig, Esquire
The Nature Conservancy
1800 North Kent Street
Arlington, Virginia 22209

USE 1033 PAGE 164

- 3 -

STATE OF VIRGINIA)
) ss.
COUNTY OF ARLINGTON)

On this 28th day of February, in the year of our Lord one thousand nine hundred and seventy-four before me, a Notary Public in and for said County, appeared G. Jon Roush and Richard G. Traurig, to me personally known, who, being by me duly sworn, did for themselves say that they are the Executive Vice President and Assistant Secretary, respectively, of THE NATURE CONSERVANCY, a non-profit corporation incorporated under the laws of the District of Columbia, the corporation named in and which executed the within instrument, and that the seal affixed to said instrument is the corporate seal of said corporation; and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Governors; and said G. Jon Roush and Richard G. Traurig acknowledged said instrument to be the free act and deed of said corporation.

My Commission Expires:
December 16, 1974

Tamra Peters
Tamra Peters NOTARY PUBLIC
Virginia-at-Large

REF 1033 REG 165

LIBER 1033 PAGE 166

SCHEDULE A

Fruitland Township

Muskegon County

Township Eleven (11) North, Range Seventeen (17) West,

- Section Eighteen (18): (a) South half of Northeast quarter (S½ NE¼),
 (b) North half of Southwest quarter (N½ SW¼),
 (c) Government Lots Two (2), Three (3), and Four (4).
 Section Nineteen (19): (d) Entire North Fractional Section lying Northerly
 of Duck Lake.

Parcel (a) is SUBJECT TO electric powerline easement to Consumers Power Company dated February 11, 1952, granting easement for route to be located one hundred (100) feet West of and parallel to centerline of highway located on the East line of subject property, as said easement is recorded in Liber 124, Miscellaneous Records, page 489, Muskegon County Records.

Township Eleven (11) North, Range Eighteen (18) West,

- Section Thirteen (13): (e) Southeast quarter of Northeast quarter (SE¼ NE¼),
 (f) All that part of North half of Southeast quarter (N½ SE¼) lying Easterly of Scenic Drive (Duck Lake Road),
 (g) All that part of Government Lot Three (3) lying Easterly of Scenic Drive (Duck Lake Road),
 (h) Government Lot Four (4) except West Cemetery, parcel of eighty-two and five tenths (82.5) by one hundred thirty-two (132) feet as before deeded by instrument dated December 17, 1902, as recorded in Liber 115 of Deeds, page 368, Muskegon County Records, but including any claim of title thereto by vendors, also except that part of said Government Lot Four (4) lying Northerly of a line commencing at intersection of centerline of Scenic Drive and North line thereof, thence South 88°26' West one hundred twenty-two and fifty-one hundredths (122.51) feet, thence South 83°50' West three hundred thirty and no tenths (330.0) feet and thence South 83°32'10" West four hundred eighty-two and forty-eight hundredths (482.48) feet to shoreline of Lake Michigan,
 (i) Government Lot Five (5),
 Section Twenty-four (24): (j) All that part of Government Lot One (1) lying North of the Northerly shoreline of Duck Lake and the channel to Lake Michigan, and all that part of Government Lot One (1) lying West of the Westerly shoreline of Duck Lake, Southerly of the channel to Lake Michigan and being North of a line being three hundred fifty and no tenths (350.0) feet South of the center point of the bridge crossing the outlet of Duck Lake, said line being six hundred twenty-four and eighty-five hundredths (624.85) feet Northerly of and parallel to the South line of said Government Lot One (1).

Parcels (e) through (j) above described are SUBJECT TO electric powerline easement now held by Consumers Power Company, as recorded in Liber 37, Miscellaneous Records, page 192, Muskegon County Records.

(Continued on page 2)

LIBER 1033 PAGE 166

SUBJECT TO a Use Restriction that no parking lot of any kind or description whatsoever shall be constructed or maintained on that part of subject property described as follows:

That part of Government Lot One (1), Section Twenty-four (24), Township Eleven (11) North, Range Eighteen (18) West, lying West of the Westerly water's edge of Duck Lake, Easterly of Scenic Drive, South of the channel to Lake Michigan and North of the following described line: Beginning at a point on the water's edge of Lake Michigan being six hundred twenty-four and eighty-five hundredths (624.85) feet North at right angles from the South line of said Government Lot One (1), thence East three hundred thirty-five (335) feet, more or less, parallel with the South line of said Government Lot One (1) to the water's edge of Duck Lake and the point of ending of said line. (Location of said line being three hundred fifty and no tenths (350.0) feet South of the center point of the bridge crossing the outlet of Duck Lake.)

and further that this restriction shall run with the land in favor of and for the benefit of the owner or owners from time to time of that certain real property situated in the Township of Fruitland, County of Muskegon, and State of Michigan, more particularly described as follows:

That part of Government Lot One (1) of Section Twenty-four (24), Township Eleven (11) North, Range Eighteen (18) West, lying South of the Southerly water's edge of Duck Lake and that part of said Government Lot One (1) lying West of the Westerly water's edge of Duck Lake and Southerly of the following described line: Beginning at a point on the water's edge of Lake Michigan being six hundred twenty-four and eighty-five hundredths (624.85) feet North at right angles from the South line of said Government Lot One (1); thence East three hundred thirty-five (335) feet, more or less, parallel with the South line of said Government Lot One (1), to the water's edge of Duck Lake and the point of ending of said line. (Location of said line being three hundred fifty and no tenths (350.0) feet South of the centerpoint of the bridge crossing the outlet of Duck Lake.) Said restriction is set forth in the deed dated June 4, 1973 and recorded June 5, 1973 in Liber 1014, page 583, Muskegon County Records.

* * * * *

John W. Hanks
1974 MAR 22 PM 3 13
MUSKEGON COUNTY RECORDS

LIBER 1033 PAGE 167

582-55-A

Duck Lake State Park
Muskegon County

1974 assessed

\$784,500. Purchase
15,500. Gift value

Fee subj to (1) elec p/l easement to Consumers Power Co dtd 2/11/52 granting easement for route to be located 100 ft W of and parallel to c/l of hwy located on E line of S $\frac{1}{2}$ of NE $\frac{1}{4}$, Sec. 18, T 11 N, R 17 W; (2) lands in Secs. 13 and 24, T 11 N, R 18 W, subj to elec p/l easement now held by Consumers Power Co; (3) part of Gov't Lot 1, Sec. 24, T 11 N, R 18 W, subj to Use Restriction that no parking lot of any kind or description whatsoever shall be constructed or maintained - See deed for description; (4) and further that this restriction shall run with the land in favor of and for the benefit of the owner or owners from time to time on said part of Gov't Lot 1, Sec. 24, T 11 N, R 18 W - See deed for description

WARRANTY DEED

The Nature Conservancy,
a non-profit corporation

To

State of Michigan