

Zippel Bay State Park

Management Plan



Photo courtesy of John Tschudy



Minnesota Department of Natural Resources
Division of Parks and Trails

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MNDNR

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Minnesota Department of Natural Resources

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Department of Natural Resources Approval of Zippel Bay State Park Management Plan

Minnesota Statutes, section 86A.09, sub. 1 requires that a master plan be prepared for units of Minnesota's Outdoor Recreation System, including state parks and state recreation areas. The Laws of Minnesota for 1959, chapter 63, established Lake of the Woods-Zippel Bay Recreation Reserve, later amended to Zippel Bay State Park (*Minnesota Statutes*, section 85.012, subd. 61.)

The Minnesota Department of Natural Resources worked in partnership with Minnesota citizens and an interdisciplinary resource team to develop the management plan (master plan) for Zippel Bay State Park. The management plan was reviewed and approved by the Northwest Regional Management Team.

Erika Rivers

Erika Rivers, Director
MNDNR Division of Parks and Trails

9/16/2016

Date



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1. Executive Summary

This plan documents a public planning process and sets direction for future management and development at Zippel Bay State Park.

Minnesota Statutes, section 86A.09 requires that construction of facilities and other development conform to the management plan. A citizen advisory committee provided input on plan recommendations and a draft plan was available for public review.

In 2015, the Division of Parks and Trails completed a Parks and Trails System Plan to advance new approaches to managing DNR's state parks, recreation areas, trails, forest recreation areas, and water recreation system. The System Plan recommends a differentiated system where each individual park will serve a niche within a system that offers a diverse range of recreational opportunities.

Zippel Bay State Park is designated as a "Classic" park within the "Core" parks category in the System Plan. The vision for these parks is to provide a diversity of quality recreational experiences typical to what visitors have come to expect across the system. Zippel Bay State Park will continue to provide quality camping and day-use facilities, while providing access to Lake of the Woods.

The following is a summary of key recommendations made in this plan. A complete list of recommendations can be found in the individual chapters of the plan. Implementation of recommendations in this plan will depend on funding, operational support, and implementation of the Division of Parks and Trails System Plan.

- *Provide active management to preserve and perpetuate state-listed species, maintain high quality native plant communities, and protect known cultural resources.*
- *Conduct resource assessments to avoid or mitigate impacts to high quality natural and cultural resources.*
- *Update the Park Unit Interpretive Plan, with a focus on non-personal interpretation and support of interpretation by partners.*
- *Accommodate larger recreational vehicles and boats by establishing a semi-modern campground.*
- *Reconfigure Birch, Ridge, and Ladyslipper campgrounds to provide quality rustic group and individual camping options.*
- *Maintain a quality multi-use trail system and explore additional trail connections between points of interest within the park.*
- *Reconstruct the entry plaza and contact station area to provide space for self-registration and administrative use.*

2. Zippel Bay State Park's Role in the State Park System

Zippel Bay State Park is located on Minnesota's northern border, on the southeast shore of Lake of the Woods, where the Canadian Shield meets the peatlands. This park is home to outcrops of ancient bedrock, high quality wetlands and forests, 152 different bird species, and two miles of sandy beach. Zippel Bay State Park also protects historic settlement sites. The park is named for the bay created by the confluence of two creeks draining to the lake. The bay provides a refuge for boaters from the lake, especially at high winds. It also shows the dynamic environment of the lake, where the shore's sands move by action of wind, waves, and weather.

Explore Minnesota Tourism found that in 2010 Zippel Bay State Park was one of the top ten visitor attractions in Northwest Minnesota (2012). Zippel Bay State Park is an important part of the state park system due to its access to Lake of the Woods, its intact natural and cultural resources, and its remote and undisturbed characteristics.

The Harbor at Zippel Bay

At the time of European settlement in the area, in the late 19th century, Zippel Bay was important as a natural harbor on the southern shore of Lake of the Woods, between the mouth of the Rainy River, east of Zippel Bay, and the harbor at Warroad. Products were launched from the shore of Zippel Bay across the lake. The bay served as a refuge for boat traffic during storms. To support these uses, the bay was dredged and a jetty constructed in 1913. However, within 10 years, commercial navigation on the lake declined as roads were built and logs were moved by land. The channel filled in with sand during low water years, was flushed out in high water years, and has been dredged periodically since. The 1913 jetty was upgraded approximately 25 years ago and the harbor is currently being rehabilitated.

Zippel Bay State Park Overview

Zippel Bay State Park is approximately 2,975 acres in area, of which 90% is high quality native plant communities. High quality native plant communities are defined in the Parks and Trails Land Cover Quality Ranking Guideline as invasive species free or nearly so, with little anthropogenic disturbance that can be observed. The remaining park acreage is comprised of:

"They used to bring those fish in there by the ton in the spring at night, years ago. You probably know at one time they had two express cars running every night when they had a lot of commercial fishing going on out of Warroad, you know out of Baudette, all along the line."

Harold Bruber, who moved to Zippel Bay in 1917, interviewed by Ben Thoma in 1986



- 218 acres of open-water in Zippel Bay;
- 14 acres are old gravel pits that have been mostly replanted to pine;
- 37 acres are classified as old field, and partially planted to trees with a deer exclosure and recovered herbaceous layer;
- 39 acres are developed areas such as campgrounds, roads, and parking lots.

Park facilities provide access to the lake and support camping, hiking, and observation of wildlife and forest communities. There is a boat access and harbor on the bay, beaches, shower building, office, approximately 5 miles of summer trails and 11 miles of winter trails.

There are currently four rustic campgrounds that provide a variety of camping experiences. This includes 57 drive-in camping sites and a group camping site. Camping is popular on holiday weekends.

The previous management plan for the state park was completed in 1985. Since the original plan was adopted, facilities and services have been improved and Lake of the Woods has become a major year-round destination for fishing.

People who fish on Lake of the Woods use the boat launch and camp in the park. They also use the harbor facilities for a shore lunch. In the winter, the park provides access to Lake of the Woods for snowmobiles.

Zippel Bay State Park is a destination for fishing, camping, and experiencing wildlife and forests of northern Minnesota. Zippel Bay State Park is especially notable as a destination for birding, with the opportunity to view a variety of forest and water birds, including many threatened or endangered species. These resources are high quality, due in part to the remote location and minimal development of the park and its surrounding area.



[Entrance sign at Zippel Bay State Park](#)

3. Statutory Authorization

Zippel Bay was established as a state recreation area on March 3, 1959. It became a state park in 1994. For the most part, two chapters of *Minnesota Statutes* govern the creation and management of the state park system: Chapter 85 and Chapter 86A, also called the Outdoor Recreation Act of 1975. Chapter 85 lists state parks and other areas established in state law. It also governs state park permits and fees, special uses of state parks, food and beverage service in certain state parks, special leases, special revolving fund accounts, and other aspects of state park management. In addition, the Commissioner of DNR has

promulgated rules that regulate recreational use, personal behavior, and unlawful activities in state parks. It is the responsibility of park managers and other authorized employees to enforce park rules.

The Outdoor Recreation Act of 1975 identifies state parks and state recreation areas as units of Minnesota's outdoor recreation system and designates DNR as the managing agency for these units. The act describes the purposes of state parks, criteria for new parks, and how parks should be managed. According to the act, the purposes of state parks are:

“... to protect and perpetuate extensive areas of the state possessing those resources which illustrate and exemplify Minnesota’s natural phenomena and to provide for the use, enjoyment, and understanding of such resources without impairment for the enjoyment and recreation of future generations.”

The act also says that a new state park should not be established unless its proposed location substantially satisfied the following criteria:

1. *Exemplifies the natural characteristics of the major landscape regions of the state, as shown by accepted classifications, in an essentially unspoiled or restored condition or in a condition that will permit restoration in the foreseeable future; or contains essentially unspoiled natural resources of sufficient extent and importance to meaningfully contribute to the broad illustration of the state’s natural phenomena; and*
2. *Contains natural resources, sufficiently diverse and interesting to attract people from throughout the state; and*
3. *Is sufficiently large to permit protection of the plant and animal life and other natural resources which give the park its qualities and provide for a broad range of opportunities for human enjoyment of these qualities.*

The act directs DNR to manage state parks:

“... to preserve and perpetuate, and interpret natural features that existed in the area of the park prior to settlement and other significant natural, scenic, scientific, or historical features that are present. . . . to maintain a balance among the plant and animal life of the park and to reestablish desirable plants and animals that were formerly indigenous to the park area but are now missing. Programs to interpret the natural features

of the park shall be provided. . . . Park use shall be primarily for aesthetic, cultural, and educational purposes, and shall not be designed to accommodate all forms or unlimited volumes of recreational use. . . ”

4. Planning Process

The Outdoor Recreation Act of 1975 (Minnesota Statutes 86A.09) requires management plans to be prepared for most units of the outdoor recreation system, including state parks. This park plan was developed in conjunction with development of management plans for two neighboring units of the state recreation system: Garden Island State Recreation Area, an island on Lake of the Woods located north of Zippel Bay, and Franz Jevne State Park, located east of Baudette on the Rainy River.

Public input is a valued and influential part of the management plan. This management plan was developed with input and assistance from other DNR divisions, other agencies, local government officials, local legislators, Friends of Zippel Bay State Park and local residents and citizens. This management plan was developed through an open public process that included:

- Natural and cultural resource assessment work, including literature review and field research.
- Consultation with a citizen advisory committee throughout plan development.
- Two public open house meetings, one before plan development and one after, to give participants an opportunity to ask questions and provide input on the draft management plan.
- A 30-day public review period for review of the draft management plan, as required by MS 86A.09.

The 1985 park plan was developed in the context of the economic and tourism issues of the day. Specifically, there was a concern that visitor numbers were low due to a recession and high gas prices. Park planners wanted Zippel Bay State Park to augment, but not supplant, existing recreational facilities associated with Lake of the Woods. This new management plan provides a guide for park operations and development for the next generation.

5. Vision Statements

Zippel Bay State Park provides a natural setting to explore two ecological regions and a remarkable lake. It is home to a diverse population of orchids, birds, and fish. It is also an excellent place to experience the best of nature: waves on the beach, panorama of stars and northern lights at night, and glimpses of song birds and raptors. Zippel Bay offers an up-north camping experience for visitors to Northwest Minnesota. The vision of this management plan is that Zippel Bay State Park provides:

- **High quality natural and cultural resources, that are protected, restored, and interpreted,** so visitors may appreciate Zippel Bay State Park's unique natural setting and its human history.
- **Outstanding camping experiences, with comfortable facilities in a natural, minimally disturbed setting,** so that Zippel Bay State Park is the place visitors escape the everyday world, and experience the beauty and quiet of nature first hand. The park's facilities are low impact and accommodate groups and families as well as individuals. Zippel Bay State Park offers visitors traditional up-north camping experience that complements but does not compete with other facilities in the area.
- **Hub for activities that help visitors see the best of the park, but also connect with the broader community year-round.** Zippel Bay State Park should be a destination in itself, as well as serve to enhance the experiences of visitors to the area's private resorts and campgrounds. The park's trails are used seasonally by hikers, bird watchers, horseback riders, cross country skiers, snowshoers, and snowmobilers. These recreationists may also be using facilities, trails, and other opportunities in the area, including those at Garden Island State Recreation Area, Red Lake Wildlife Management Area, Beltrami Island State Forest, Pine Island State Forest, Big Bog State Recreation Area, Hayes Lake State Park, and Franz Jevne State Park.

6. Regional Analysis

Population

The counties surrounding Zippel Bay State Park are relatively low in population, and are predicted to lose population over the next 20 years.

The density, or number of people per square mile, is among the lowest in the state.

Having high quality natural areas within a few hours' drive is important to local citizens. Moreover, the overall rural character of the communities surrounding Zippel Bay State Park enhances the attraction of the region to visitors. The population of the counties surrounding the park is generally older than the median age of Minnesotans, and income is somewhat lower than the median (Davenport 2011).

The table below shows population estimates for the seven counties closest to the park. The numbers and estimates are from the Minnesota State Demographic Center (2013).

Table 1: County Population Estimates 2010-12

County	2010	2011	2012
Beltrami	44,442	45,212	45,325
Kittson	4,552	4,528	4,496
Koochiching	13,311	13,221	13,208
Lake of the Woods	4,045	4,011	3,976
Marshall	9,439	9,473	9,445
Pennington	13,930	14,018	14,075
Roseau	15,629	15,536	15,484
Total	106,009	105,999	105,348

Regional Recreation and Tourism Opportunities

Popular recreation activities for visitors to the Northwest are walking or hiking, boating, fishing, swimming, and driving for pleasure. Residents of the Northwest list hunting, all-terrain vehicle driving, and snowmobiling as favored recreational activities (Davenport 2011).

Visitors to the region are generally Minnesota residents (49 percent), with the next largest segments coming from the Fargo-Valley City area (32 percent). One of five visitors visited a state or national park and one of ten overnight visitors stayed at campgrounds. Almost three-quarters (71 percent) of visitors indicated participating in one or more recreation activity. The most common activities were fishing (28 percent), pool swimming (23 percent), and lake/river swimming (20 percent).

Northwest trail users identified the attributes, "to be on my own" and "to experience silence and quiet" as more important than statewide trail users (Davenport 2011). Zippel Bay State Park is an important component of the recreational infrastructure of Northwestern Minnesota, because it is well suited to meet the needs of the typical visitor. Total park visits, including overnight use, has been stable over

the last 10 years, however overnight use may be underutilized due to lack of modern amenities.

Since 2001, parks gained visitation from the Baby Boom generation (those born 1946-1964), and lost visitation among young adults and their children. This pattern of age-related change is not restricted to park visitors in Minnesota – it extends broadly to nature-based recreation in Minnesota and the nation.

Boating registration in Minnesota has remained stable over the past 20 years. Accesses are serving a broader market today than in the past and boaters give high marks to accesses. A leading problem with accesses identified by research is their perceived small size, including parking lots and launch ramps (Kelly 2009).

DNR staff acknowledge that public accesses in the area, including the Zippel Bay State Park harbor, are used by lakeshore and riparian residents, resorts, and visitors to private campgrounds in addition to boat owners who visit state parks.

In terms of boating trip characteristics, the main activity ranges from fishing to pleasure boating. Boats continue to be larger and are equipped with larger motors. In the 1980s, the average boat size was 16 feet and the motor was 50 horsepower. Today, the average boat size is 18 feet and the motor is 100 horsepower (Kelly 2009). Statewide, pontoons are rapidly becoming the craft of choice for lakeshore residents, although Lake of the Woods remains primarily a fishing boat destination.

Boating is the second most popular recreation activity by adults in Minnesota (walking is ranked first) (Davenport 2011). Further, Minnesota ranks second in the nation for anglers per capita and third for total number of boats per capita.

Zippel Bay State Park is important because it provides locations for swimming, boating, berry picking, day use picnicking and nature watching, as well as providing tent and recreational vehicle camping. The park also contributes to the region's winter recreational resources by providing winter trails for snowmobiling and cross-country skiing. It also provides winter snowmobile access to the lake, in addition to access at the harbor during open water.

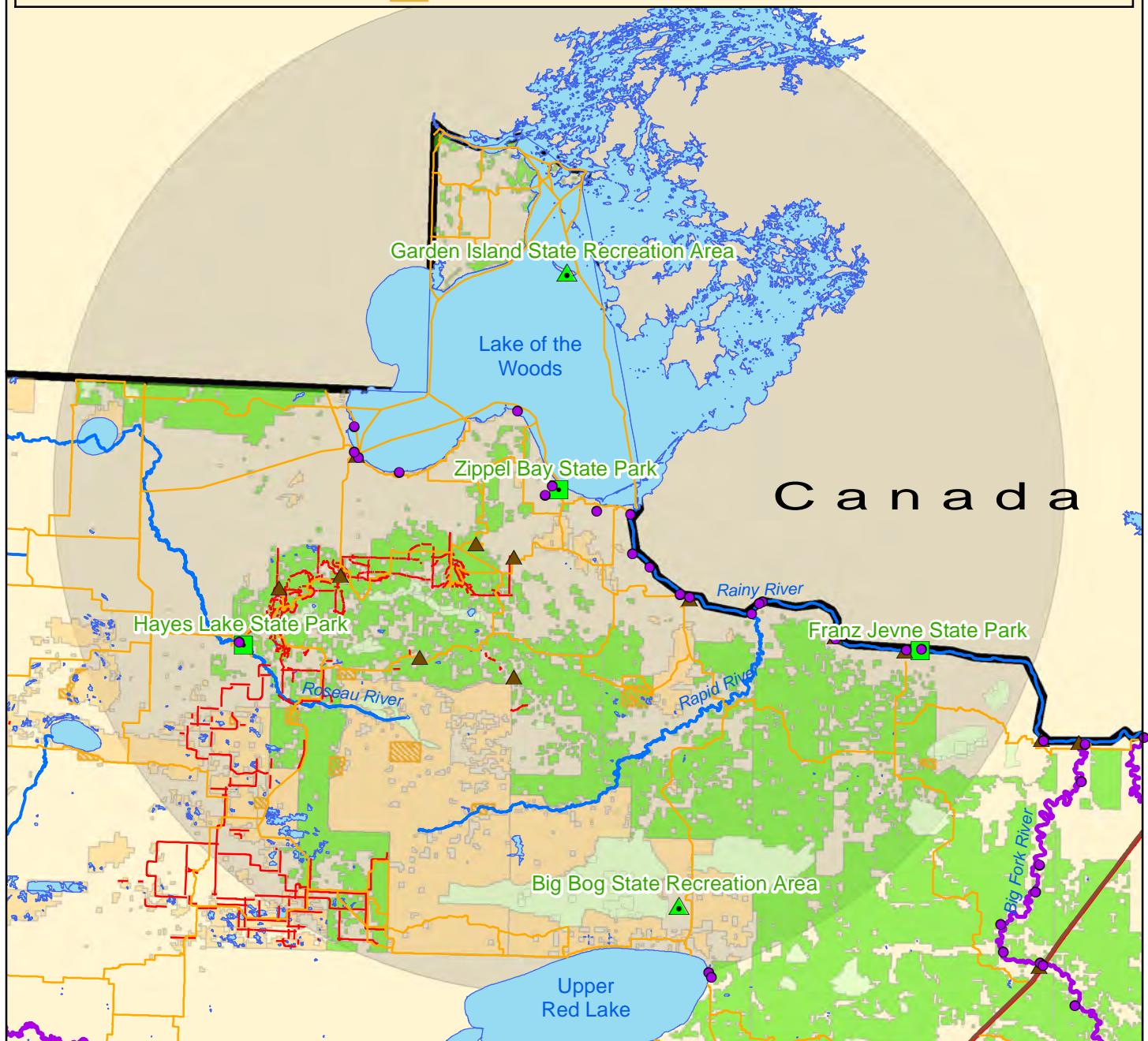
This management plan recommends strategies to enhance these services, which will complement, but not compete against, other recreational resources of the region. Recommendations proposed in this plan are subject to availability of funding, statewide priorities, and fit with direction from the Division of Parks and Trails System Plan.



Willie the Walleye, located in Baudette, signifies the current and historical importance of fishing to the area.

Legend

- Minor Cities
- Small Cities
- State Park
- ▲ State Recreation Area
- County Boundaries
- 50 Mile Radius
- Voyageurs National Park
- State Forests Management Units
- Wildlife Management Area
- Scientific and Natural Area
- Off-Highway Vehicle Use
- Ruffed Grouse Management Area
- Lake, Pond or Reservoir
- Public Water Access
- ▲ Campgrounds
- Minnesota State Trails
- GIA Snowmobile Trails
- Minnesota Water Trails



Zippel Bay State Park

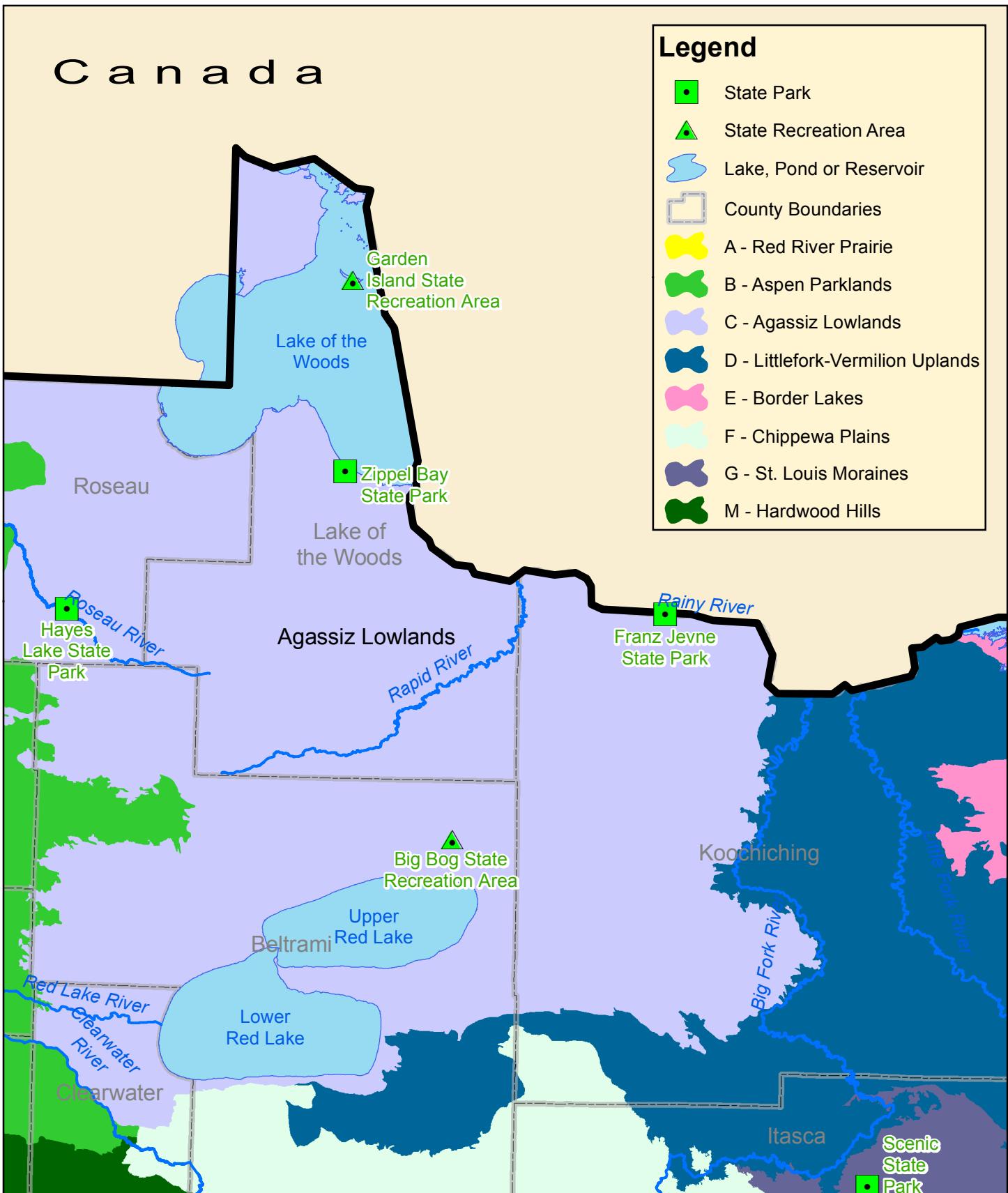
Figure 1: Regional Recreational Opportunities



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0 5 10 20 Miles





Zippel Bay State Park

Figure 2: Ecological Subsections



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0 5 10 20 Miles



7. Natural Resources

Many high quality plant and animal communities exist in Zippel Bay State Park and show little human disturbance compared to adjacent lands. Resource management goals and efforts include: planting white cedar and white pine where logged, controlling invasive species, reducing impacts from overabundant deer, prescribed burning, native plant community typing, and balancing development of visitor facilities and use with resource protection. Challenges are restoring vegetation with overabundant deer, managing jack pine in a park setting, and controlling spotted knapweed, which encroaches from neighboring properties.

Regional Landscape and Ecological Classification System

The DNR and the U.S. Forest Service have developed an Ecological Classification System (ECS) for ecological mapping and landscape classification in Minnesota. Ecological land classifications are used to identify, describe, and map progressively smaller areas of land with increasingly uniform ecological features. The system uses associations of biotic and environmental factors, including climate, geology, topography, soils, hydrology, and vegetation. The largest unit is the Province, units of land defined using major climate zones, native vegetation, and biomes such as prairies, deciduous forests, or boreal forests. Provinces are divided into sections, then subsections.

Zippel Bay State Park, and its geographically associated recreational units – Hayes Lake State Park, Beltrami Island State Forest, Garden Island State Recreation Area, Big Bog State Recreation Area, Franz Jevne State Park – lie in the Laurentian Mixed Forest (LMF) Province, which traverses northern Minnesota, Wisconsin, and Michigan, southern Ontario, and the less mountainous portions of New England. In Minnesota, the LMF Province is characterized by broad areas of conifer forest, mixed hardwood and conifer forests, and conifer bogs and swamps. The landscape ranges from rugged lake-dotted terrain with thin glacial deposits over bedrock, to hummocky or undulating plains with deep glacial drift, to large, flat, poorly drained peatlands.

Geology and Topography

The present landscape of Zippel Bay State Park and Lake of the Woods County is young, geologically. The area was covered with ice during the Wisconsin Glaciation from about 75,000 to 9,000 years ago. About

12,000 years ago, the last glacier retreated north into what is now Canada and its meltwater formed Glacial Lake Agassiz. The wave action of Glacial Lake Agassiz smoothed out the glacial till landscape beneath the lake while wind-driven waves built up ridges of sand and gravel along its shores. The Campbell Beach Ridge, the lowest stable level of Glacial Lake Agassiz in Minnesota, runs about 20 miles south of the park in a northwesterly direction and there are several small sand/gravel deposits in the area of the park formed from lesser shoreline beach ridges. Glacial till clay was sorted by Glacial Lake Agassiz wave action and deposited in deeper, calmer bays and today can be seen in the poorly drained soils of Zippel Bay State Park. The most visible remnant of Glacial Lake Agassiz is Lake of the Woods, a large basin that never completely drained. The oldest landscape features of the park are bedrock outcrops that date back at least 2.5 billion years.

Agassiz Lowlands Ecological Subsection

Landform

Zippel Bay State Park is located in the Agassiz Lowlands Ecological Subsection. In this subsection peatlands occupy the large glacial lake bed. The mineral substrate consists of calcareous silty till, with a thin veneer of lake sediments (Glaser et al. 1981, referencing Wright 1972). Sediments vary in texture across the extensive lake bed. Sandy beach ridges are exposed throughout the subsection (Albert 1993).

Bedrock geology

Glacial drift is thinnest at the northern and eastern edges of the lake plain, where bedrock is locally exposed (Olsen and Mossler 1982). Drift is up to 300 feet thick at the western edge of the basin. The underlying bedrock is Precambrian (Late Archean) in age, and includes gneiss, amphibolite, undifferentiated granite, and metamorphosed mafic to intermediate volcanic and sedimentary rocks. There are also iron formation, metasediments, and metamorphosed felsic volcanic rocks (Morey 1976).

Climate

The total annual precipitation in the subsection ranges from 21 inches in the west to 25 inches in the east, with 40 to 50 percent of the annual amount occurring during the growing season. The growing season is short, from 98 to 111 days, with the shortest growing season near the eastern edge.



Several prominent rock outcrops in the park provide openings in the landscape and offer spectacular views.

Hydrology

The landscape is virtually level, which is reflected by the drainage network. Extensive ditching of the peatlands was done in the earlier part of this century in an effort to promote agricultural development of the region. The Big Fork and Rainy Rivers are the largest rivers running through the subsection. The Rainy River forms part of the northern boundary of the subsection as well as the state. There are three large lakes that are remnants of Glacial Lake Agassiz: Lower Red Lake, Upper Red Lake, and Lake of the Woods.

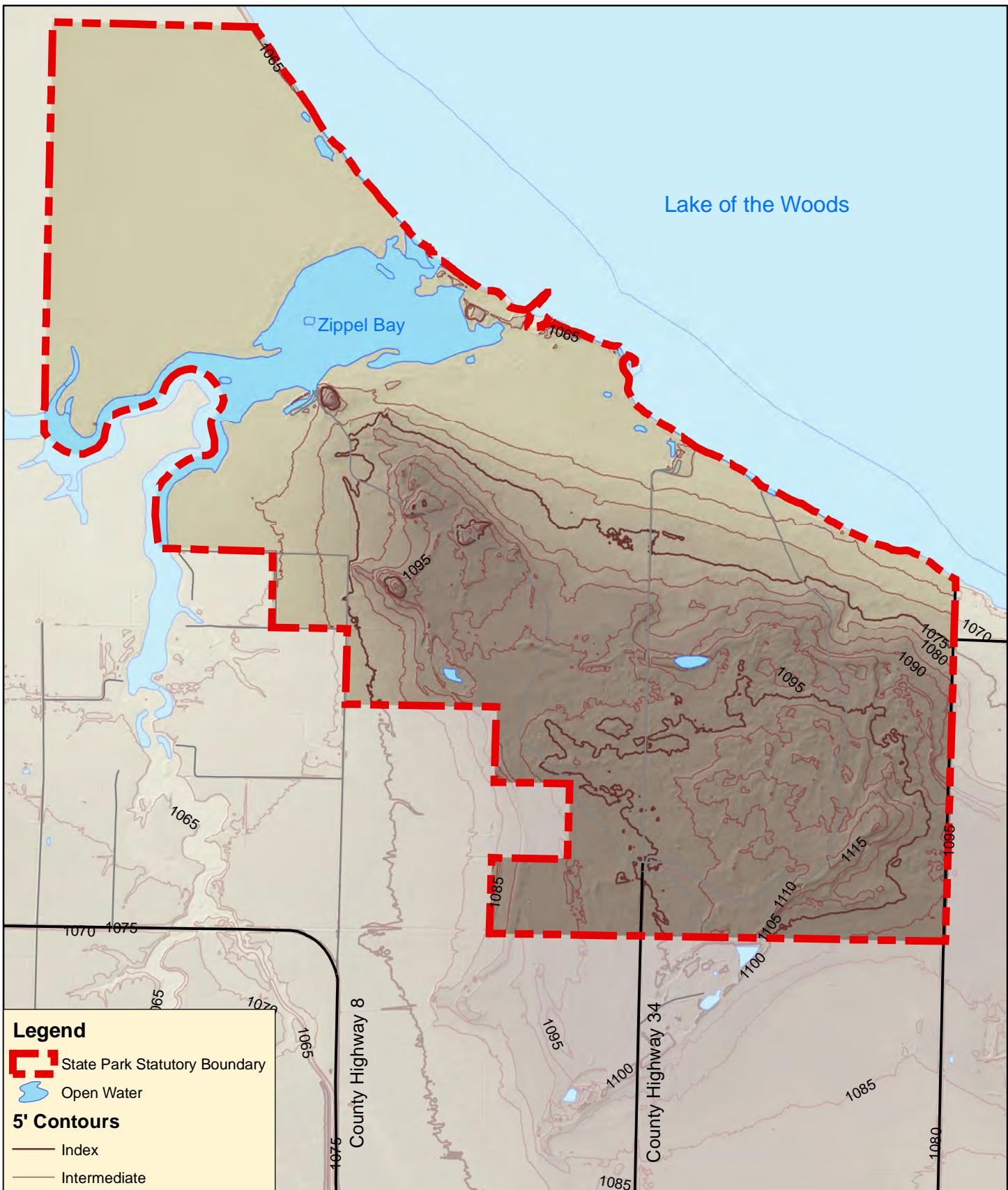
Soils

Soils in this subsection are predominantly organic (Dept. of Soil Science, Univ. of Minnesota 1980c, 1981b). There is a greater percentage of organic soils in the center of the lake basin, with increased amounts of poorly drained mineral soils near the edges. About 75 percent of the soils are peats in this portion of the basin. Peat depths can exceed 15 feet (Heinselman 1963). Soils are classified primarily as Hemists, Aqualfs, and Aquents (Anderson and Grigal 1984). Hemists occupy the center of the lake basin, whereas Aqualfs and Aquents are present along the margins of the basin.

Over 1,000 acres of Zippel Bay State Park have soils that are classified within the Chilgren-Garnes-Percy Association. Such soils are nearly level and gently sloping, poorly drained to moderately well drained soils that formed in loamy till on glacial lake plains. These soils support Zippel Bay State Park's mesic hardwood communities and most are poorly drained with seasonally high water tables.

Roughly an additional 1,000 acres of the state park's soils are very poorly drained soils that formed in highly decomposed organic material overlying mineral material on glacial lake plains. Such soils support the state park's wetland communities.

Approximately 300 acres of the state park lie within the Marquette-Karlstad-Faunce Association which are well drained soils that formed in sandy sediments or sandy mantle overlying sandy outwash on glacial lake beaches and plains. These soils support the state park's pine communities and can be found on the shorelines and under developed use areas.



Zippel Bay State Park

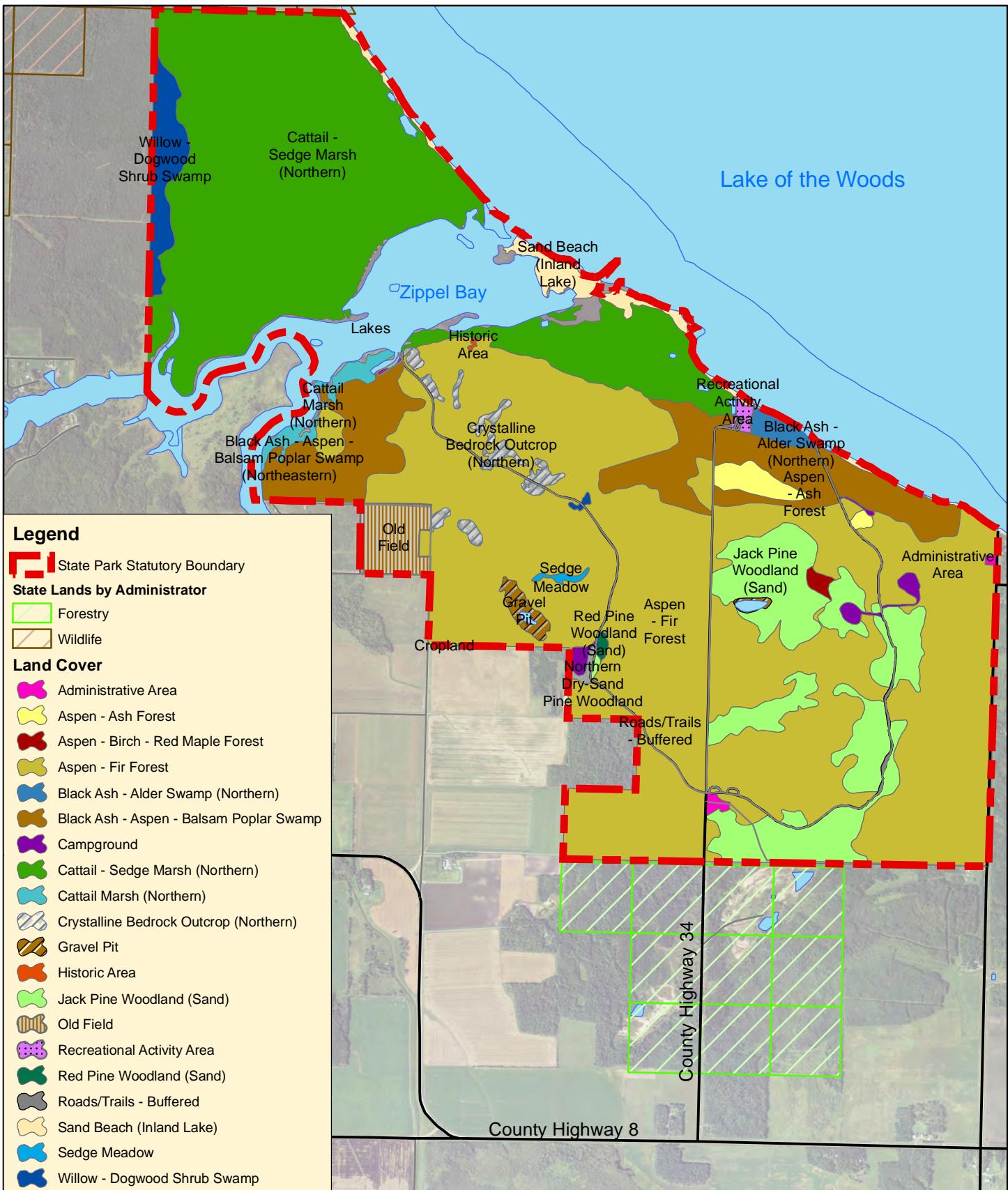
Figure 3: Topography



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Zippel Bay State Park

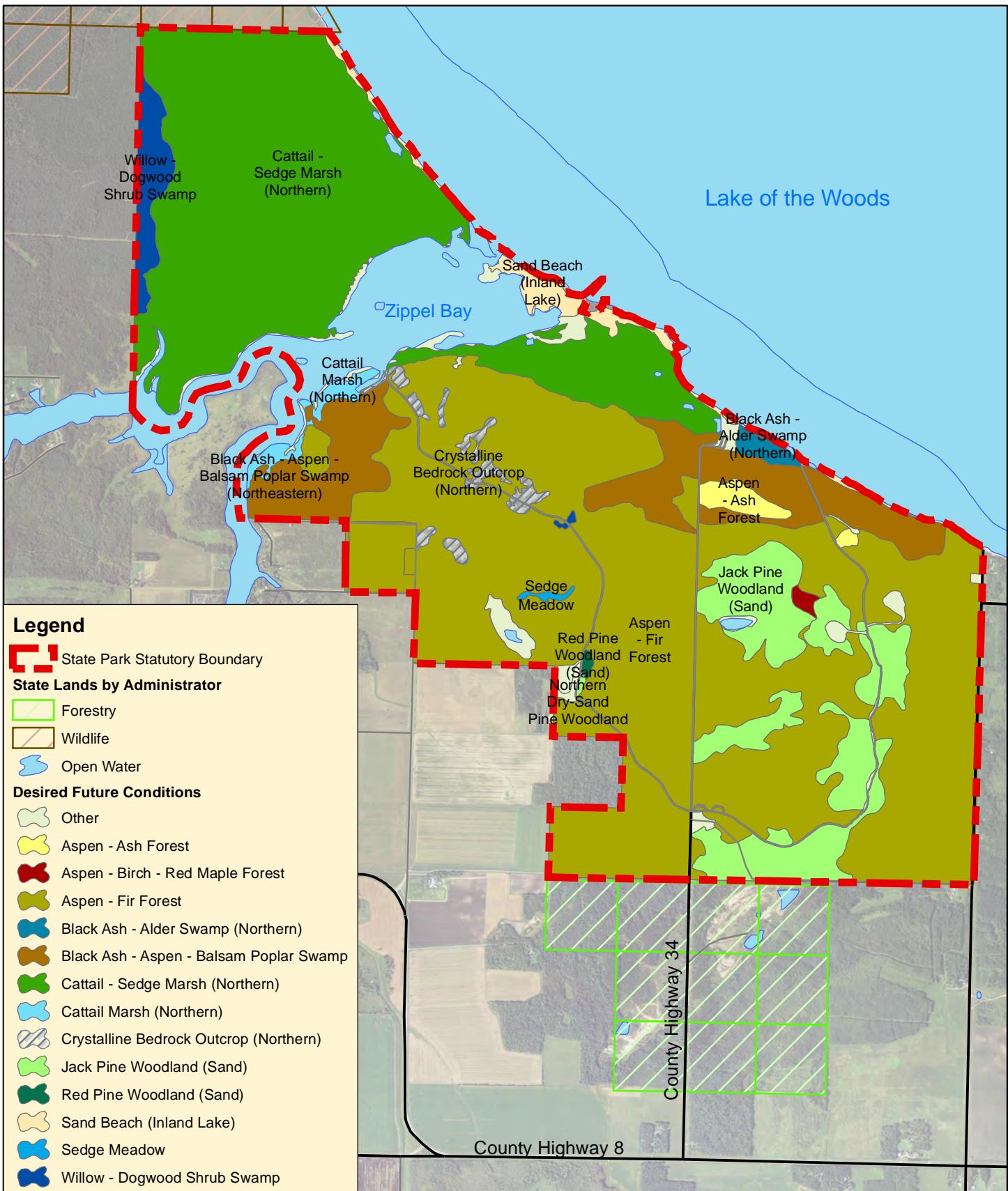
Figure 4: Land Cover



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Zippel Bay State Park Figure 5: Desired Future Conditions



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Presettlement vegetation

Presettlement vegetation in the subsection is based on the Public Land Survey records, as interpreted by Francis J. Marschner in 1974. He mapped most of the subsection as peatland. Plant communities included in this classification were sedge fen, black spruce-sphagnum bog, and white cedar-black ash swamp. There were also low moraines and beach ridges dominated by jack pine forest or quaking aspen-paper birch forest. Recent ecologists have classified the peatland as a number of plant communities, with the plant species present in each community responding to differences in water flow and water chemistry (Heinselman 1963, 1970, Glaser et al. 1981, Glaser 1983).

Present vegetation and land use

Forestry and recreation are the major land uses. Black spruce, jack pine, and quaking aspen are the most common species utilized for paper making and saw logs. Recreation and tourism are associated with the three large lakes: Lake of the Woods, and Upper and Lower Red Lake.

Zippel Bay State Park has 2,665 acres of land mapped as high quality native plant communities using the Native Plant Communities (NPC) of Minnesota classification. About half of that amount, or 1,338 acres, are mesic hardwood forests with fire frequency around 160 years. 232 acres (9 percent) are fire dependent pine woodlands with fire frequency of approximately 50 years. The remaining 1,095 acres (41 percent) of Zippel Bay's native plant communities are either beach shores or wet forests-wetland communities that historically had very infrequent fires (every 1,000 years).



A stand of paper birch remains after selective thinning of jack pine.

Water Resources

Zippel Bay State Park lies southeast of the confluence of the south and west branches of Zippel Creek. The widening of this confluence forms Zippel Bay, which then flows north into Lake of the Woods. The state park includes three miles of undeveloped shoreline, including 2 miles of beach, extends east and west from the mouth of Zippel Creek on Lake of the Woods. Lake of the Woods lies in the Hudson Bay drainage basin and straddles the Canada-United States border. This 950,400 acre lake is shared between the Canadian provinces of Manitoba and Ontario, and the state of Minnesota. About one-third of the lake's surface, or 307,010 acres, lies in Minnesota.

Exceptional fisheries resources exist within Lake of the Woods and Zippel Bay. Large northern pike can be caught within Zippel Bay, often while fishing from the park's shore. A fishing pier is located within the

state park facilitates shore angling. Significant populations of northern pike move into Zippel Bay and Zippel Creek to spawn every spring. Currently, special regulations exist to protect the large spawning female northern pike, excluding the harvest of pike 30 to 40 inches in length.

In addition to northern pike, popular sport fisheries of walleye and sauger are found in Lake of the Woods and the Rainy River. The size, structure, and abundance of walleye and sauger in these areas make Lake of the Woods and Rainy River premier fishing destinations in the state of Minnesota. Millions of hours of angling effort are exerted at these species on an annual basis and Zippel Bay State Park provides one key access point to this resource.

The Lake of the Woods-Rainy River system is one of the very few watersheds in the Midwest with a lake sturgeon population healthy enough to support sport fish harvest. Lake sturgeon mature at 20 to 25 years, and can live for more than 50 years. Because of its late maturation and slow reproduction, the species is prone to over-harvest. DNR Fisheries regulate angler harvest of sturgeon to ensure the long-term sustainability of the species and its continued recovery.

Aquatic invasive species threaten many resources around the country. Lake of the Woods is designated as infested with spiny water fleas and zebra mussel infestation could be a future concern. Minnesota rules and regulations prohibit anglers from transporting lake water anywhere in the state. Currently, anglers must make sure they remove their drain plugs from the hull, and empty live wells and bait containers. Anglers are also encouraged to clean their fishing gear before fishing a different water body.

Wildlife

Encounters with wildlife in state parks provide memorable experiences for many park visitors. Wildlife populations are managed for natural species composition and abundance. The harvest of animal populations, such as deer, is occasionally necessary. Such harvests are implemented as a management tool and are not conducted for their recreational value. Harvests are utilized when wildlife populations are having a significantly adverse effect on park resources. It is for this reason that special deer hunts have been conducted in the park.

DNR works cooperatively with conservation organizations, businesses and industries, and the state's residents, to sustain wildlife for future generations. State parks provide important habit and refuges for the state's wildlife, including birds, waterfowl, mammals, reptiles,



Undeveloped beach extend east and west from the mouth of Zippel Bay.

amphibians, and insects. The state has not yet completed the County Biological Survey for Lake of the Woods County. Therefore, information about wildlife at Zippel Bay State Park is drawn from Minnesota's Comprehensive Wildlife Strategy, which describes habitat and species needs by ecological classification. The strategy recommends that Minnesotans conserve key habitats used by the state's species in the greatest conservation need in order to support Minnesota's wildlife.

Forest wildlife includes pileated woodpecker, spruce grouse, great gray owl, ruffed grouse, great horned owl, and broad-winged hawk. Forest mammals include timber wolves, black bear, pine marten, and fisher.

Species that utilize marshes or brush lands in the state park include short-eared owls, sandhill cranes, and sharp-tail grouse. There is a diversity of northern wetland birds particularly associated with Lake of the Woods, including white pelicans, common terns, American bitterns, migratory waterfowl, migratory shorebirds, and mammals, such as mink, beaver, and otter.

One hundred and fifty-two bird species have been documented in the park. The sand beaches and shoreline are important as feeding and nesting habitat for the piping plover, which is listed on Minnesota's and the federal government's list of endangered species ([see table 2](#)). The piping plover is a small shorebird related to the common killdeer. Its light brown back, distinctive dark "necklace," and dark stripe across the forehead, distinguish it from other shorebirds in the area. The name, piping plover, comes from the bird's two-toned whistle, which is uttered as it scurries back and forth along the beaches.

Plovers return to Lake of the Woods in late April after spending winters on the Atlantic and Gulf coasts. Their nests are scrapes in the sand, where four camouflaged eggs are laid in early June. The chicks leave the nests immediately after hatching, and spend the next several weeks foraging for food. By late August, both the young and adults have flown south.

From the DNR Rare Natural Features database, there appears to be records of piping plover observations for Zippel Bay from 1979-1983. Very few nests have been found on the Lake of the Woods since then and there is continued concern over the decline of this species. According to DNR's rare species guide, this Lake of the Woods population is the only piping plover population that remains in Minnesota and it is at a critically low level with threats from erosion, predation, and human disturbance.



A sandhill crane flies overhead. Photo courtesy of John Tschudy



Red-tail hawk chicks sit in their nest up in a jack pine. Photo courtesy of John Tschudy

The Inland Lake sand beach native plant community is ranked as critically imperiled (a ranking based on the risk of elimination of the community from Minnesota with critically imperiled as highest risk) and undeveloped shoreline in its natural state is rare throughout Minnesota. Island beaches have been the preferred habitat for piping plover nesting as they provide isolation from predation and disturbance. However, the nearby Pine & Curry Islands Scientific and Natural Area (SNA), which contain beaches important for piping plover nesting are losing land mass to erosion. This may make the inland lake sand beaches of Zippel Bay more important as shore bird habitat.

Endangered, Threatened, and Special Concern Species

Eighty-eight Species in Greatest Conservation Need (SGCN) are known or predicted to occur within the Agassiz Lowlands (DNR 2006). Key habitats within this landscape region are: forest-lowland coniferous; wetland-non forest; shoreline-dunes, and river. These include 28 species that are federal or state endangered, threatened, or of special concern.

[Table 2](#) displays Endangered, Threatened and Special Concern species known to occur in Zippel Bay State Park. For example, seven species of mammals are known or predicted to occur in the Agassiz Lowlands; approximately 32 percent of all mammal SGCN in the state. These mammal species are large, such as white-tail deer, moose and black bear, or small, such as northern bog lemming, or in between such as snowshoe hare, beaver, and otter. Visitors to Zippel Bay State Park should also expect to see notable bird species of the region, including bald eagle and sandhill cranes.

Table 2: Endangered, Threatened and Special Concern Species of Zippel Bay State Park

Common Name	Scientific Name	Status*
American bittern	<i>Botaurus lentiginosus</i>	NON
bald eagle	<i>Haliaeetus leucocephalus</i>	NON
black sandshell	<i>Ligumia recta</i>	MN SC
colonial waterbird nesting area		NON
lake sturgeon	<i>Acipenser fulvescens</i>	MN SPC
piping plover	<i>Charadrius melanotos</i>	Fed E; MN E

*MN E = Minnesota Endangered, MN SC = Minnesota Special Concern, Fed E = Federally Endangered, NON = Species not listed as endangered, threatened, or special concern but tracked by Division of Ecological and Water Resources



The federally and state endangered piping plover has been spotted on the beaches of Zippel Bay State Park. Photo courtesy of John Tschudy

Natural Resources Recommendations

1. *Preserve and perpetuate populations of state-listed species.*
 - *Conduct surveys for reptiles, amphibians, selected invertebrates as funding allows.*
 - *Protect critical habitat for threatened, rare, and endangered species, such as the piping plover. Incorporate the DNR piping plover management plan into the Zippel Bay State Park Unit Resource Plan. Other threatened, rare, and endangered species in the park include common moorhen, horned grebe, American white pelican, yellow rail, marbled godwit, Wilson's phalarope, semi-palmated sandpipers, Franklin's gull, common tern, Forster's tern, Loggerhead Shrike, short-eared owl, bald eagle, and lake sturgeon.*
2. *Provide active management of vegetation resources in order to maintain the high quality ranking of native plant communities in the park.*
 - *Replicate disturbance regimes where appropriate by harvesting, shearing, or prescribed burning.*
 - *Monitor native plant communities, especially in the high quality communities, to insure that terrestrial invasive plants are not degrading the communities.*
 - *Continue to inventory, map, and manage terrestrial invasive species.*
 - *Monitor pine restoration sites for deer browse protection, mortality, and re-planting needs.*
3. *Conduct resource assessments on all development projects to avoid or mitigate impacts to high quality natural and cultural resources.*

8. Cultural Resources

European Settlement

Lake of the Woods was first visited by European explorers in 1688 or 1689 when Jacques de Noyon established a fort on the Rainy River. Pierre Gaultier de la Verendrye explored the area in 1732, seeking a route to the Pacific, and to expand the fur trade. After he became commander of the post that included the North Shore of Lake Superior in 1728, he became interested in a route to the Pacific and expanding French territory and the fur trade. He believed Lake Winnipeg was the key to the route, and devised a plan to build a fort there, financed by Quebecois fur merchants. Together with three of his four sons, he

traveled west to Rainy Lake, building Fort St. Pierre in 1731, and then continued west to Lake of the Woods, building Fort St. Charles in what is now the Northwest Angle the following year. This fort was operated as fur trading post for a number of years, even after the region passed into British hands in 1763.

The southern shore of Lake of the Woods was part of the lands held by the Red Lake Band of Ojibwe until it was ceded to the United States in 1889. Wilhelm Zippel was the first Euro-American to settle in Lake of The Woods County in 1885 or 1887. He worked as a fisherman. About the same time, Alonzo Wheeler settled at Wheeler's Point on the mouth of the Rainy River. By the early 1890s, other settlers were moving to the area, working as fishermen.

Wilhelm Zippel built a house in Section 11, now within the boundaries of the park, just east of the bay. His house also served as the general store and post office for the small community that grew up around it. All that remains of this site are building depressions and the stone foundation of the Zippel building.

Zippel Bay and Boating

During the early 1890s, water travel was the primary means of transportation. No roads or railways ran to the Zippel Bay area. Zippel Bay was the only potential natural harbor on the southern lakeshore between the mouth of the Rainy River and the mouth of the Warroad River. In June 1911, a U.S. Army Corps of Engineers dredge began work on improving the bay entrance. Storm damage to equipment delayed completion until 1913. In 1914, a jetty designed to protect the channel and act as a breakwater was completed.

In the early 1900s, considerable commercial activity developed on Lake of the Woods. Large numbers of log rafts were towed on the lake and several commercial fishing businesses were operating. Also, due to a lack of roads in the region, much miscellaneous travel and transport occurred on the lake. Zippel Bay was valued as a commercial harbor and as a refuge from storms.

The channel and bay were used by commercial traffic for about 10 years. By the mid-1920s, the timber industry had declined resulting in a significant decrease in boat traffic on the lake. Also, a county road was constructed to the area, and most passenger and freight traffic made use of it. As a result, the channel and jetty fell into disrepair, and in 1926 the Corps of Engineers recommended to Congress that the project be abandoned.



Remnants of a housing site persist in an area east of the harbor providing a reminder to the history of the park. Photo courtesy of John Tschudy

By 1926, the jetty was in poor condition and the channel was filling in again. The Corps abandoned the site and has done no channel maintenance at that site since. Local residents continued to use the dredged channel until it became completely filled with sand during World War II. The next period of high water flushed open a new channel further to the west along the bay mouth. Since then, this opening has fluctuated in location and size, sometimes making access to the lake difficult.

As commercial traffic decreased, Zippel Bay and the channel to the lake were used by recreational boaters, primarily for sport fishing, which increased in the 1960s through 1980s when boating use stabilized. The flowage channel between Zippel Bay and Lake of the Woods has historically presented problems for boat navigation. Drainage deposition from the Zippel Creek Watershed, and to a much larger extent, lake action resulting in large deposits of sand, has frequently blocked or severely restricted the channel.

In 1959, in order to provide lake access and recreational opportunities, Zippel Bay State Recreation Area was established. Its original boundaries encompassed 2,766 acres of which 2,611 acres were tax forfeited lands. In 1963, development work was begun and, over the next four years, many of the existing park facilities were constructed. The state owns nearly all the land adjacent to the bay. However, there are a number of seasonal and permanent residences and one resort located on the west and south arms, or in-flows of the bay. Many of these people make use of the bay and whatever channel exists for access to the lake. Also, several thousand visitors use the park's marina and boat launch annually.

Although boat use is recreational, the need to maintain the bay and channel continues. The U.S. Army Corps of Engineers completed a project in 1988 to dredge the channel and construct rock jetties on either side of the channel. The west side jetty is 550 feet. The east side jetty was designed to be 500 feet, but budget restraints reduced its length to 200 feet. The contribution of State funding from the DNR for this project was \$307,587.30. The major development since that time period is the improvement of the harbor and marina.

Historic Zippel Bay Townsite, consisting of scattered foundations and depressions is a significant cultural site eligible for the National Register of Historic Places. There is also a gravesite and homesite within the park. It is likely that evidence of American Indian sites will be found



A boat motors across Zippel Bay. Photo courtesy of John Tschudy

within the park boundary, as there are several known sites along the Rainy River east of the park and at other Lake of the Woods locations.

Cultural Resources Recommendations

1. *Archaeological assessments will be conducted as part of resource assessments for the development of new facilities, trails, or other structures to prevent or mitigate disturbance to cultural resources.*
2. *As funding is available, encourage exploration of the park for additional cultural resource sites.*
3. *Work collaboratively with local and state partners to interpret the park's unique cultural resources.*
4. *Protect gravesite near the harbor.*

9. Interpretive Services

Current Interpretive Services

Interpretive services at Zippel Bay State Park consist primarily of non-personal (self-guided) interpretation with some occasional staff or volunteer-led programs. This is consistent with current funding and staffing levels. Information boards and a self-guided water tour allow visitors to learn natural and cultural history about the park and surrounding area.

Zippel Bay State Park has a modest budget and does not have staff dedicated to interpretive programming. However, park staff and volunteers have helped to provide programming that engages visitors and school children, and builds loyalty to the park.

Should funding allow for an interpretive naturalist at Big Bog State Recreation Area, part of that staff person's duties would be to assist the co-managed parks such as Zippel Bay with a limited amount of programming.

Partnerships

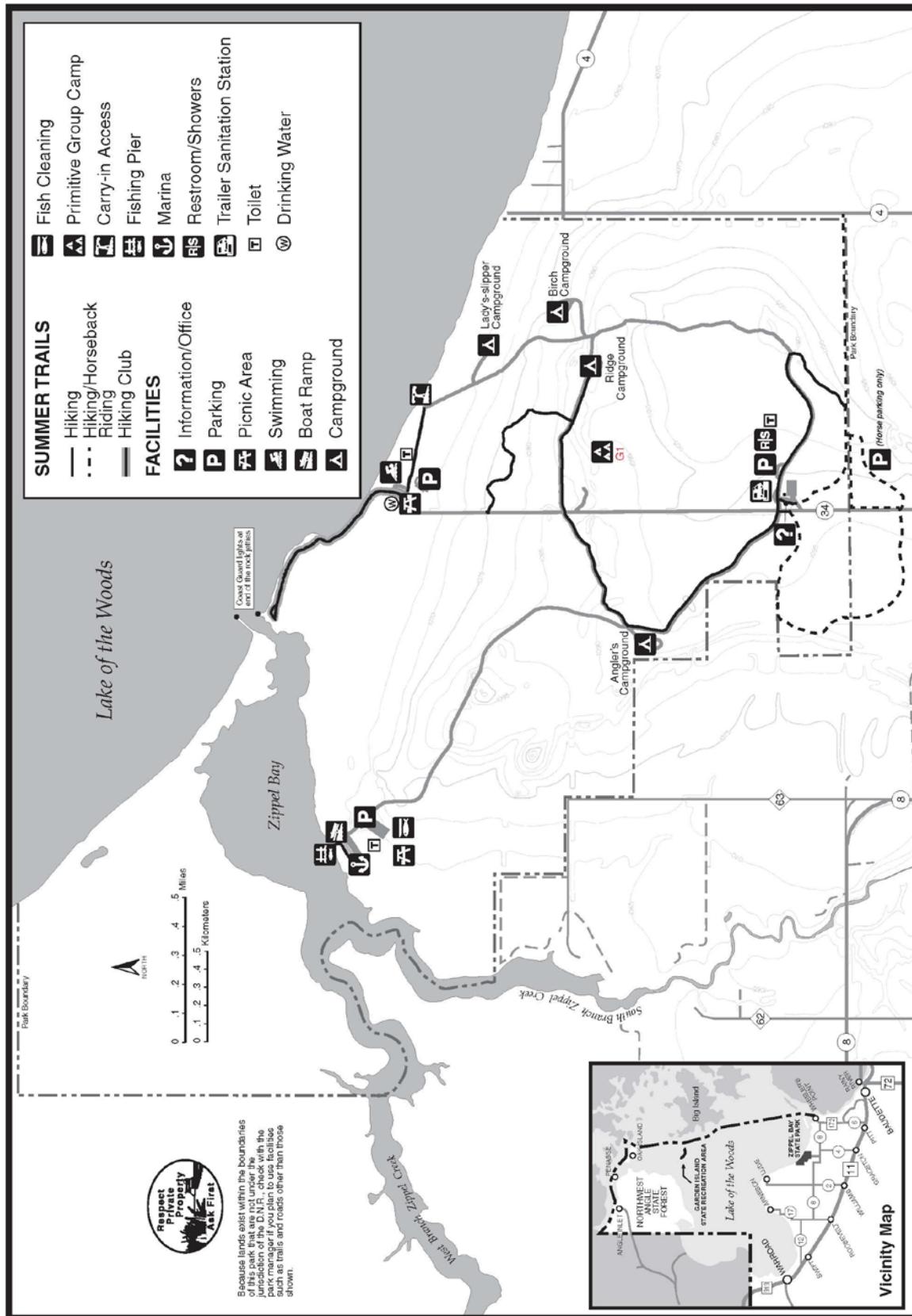
A number of organizations in the area contribute time and resources to interpretive programming and community service projects at Zippel Bay State Park. These include:

- Friends of Zippel Bay State Park.
- Scout troops in Baudette and Warroad.
- Community clubs in Baudette, Warroad and Williams.
- Arrowhead Library System.

Interpretive Services Recommendations

1. *Update the Park Unit Interpretive Plan (PUIP) for Zippel Bay State Park. Within the PUIP, develop themes that identify relevant natural and cultural resource stories.*
2. *Implement recommendations included in Statewide and Park Interpretive Plans. Primary focus will be on non-personal interpretation, but may include support for special events and occasional programming by interpretive staff and/or park management staff.*
3. *Support and assist efforts of partners to offer personal interpretive services at the park focusing on park themes, as time and funding allows.*

Figure 6: Zippel Bay State Park Summer Map



10. Recreational Use and Visitor Services

Recreational Use Issues

Camping and day use of Zippel Bay State Park have been static in recent years, possibly due to the type of camping facilities that currently exist in the park. DNR Fish and Wildlife Division estimates that Lake of the Woods currently has the highest number of annual angling hours among Minnesota lakes. There are over 50 facilities on Lake of the Woods with lodging (the specific number varies year to year). Most of them see Zippel Bay State Park as a complement to their operations, according to information shared by the Lake of the Woods tourism officials and resort owners.

Local resorts use Zippel Bay State Park's harbor facilities as a place for fishing boats to take customers for shore lunches. This is a significant use according to park staff and community residents. Currently, visitors who enter the park by water on a boat are not required to purchase a park permit. Also, there is no method in place to count visitors who arrive by boat.

Park staff believe that overnight use is underutilized and could be improved with new amenities such as electricity, flush toilets, and showers within walking distance of the camp site. It is likely that overnight park use and park revenue could increase with these updates to the park. These improvements would enhance the experience of all visitors to the park.

Federal funding has been obtained for significant upgrades to the marina. Phase I was completed in 2014, which included dredging the harbor, replacing the seawall, improving the boat launch area and installing a new dock system to increase the boat capacity. Phase II includes planning for electrical hook-ups at the docks, lights and electricity to the picnic shelter and fish cleaning house, and consideration of a septic pump-out station.

The division will consider overnight use of the harbor after Phase II is completed. Overnight use could be accommodated if it does not displace day users and if the division has the capacity to operate an additional overnight use area in the park. Other operational issues including registration methods, restrictions on day of week or season, and fees will be considered if overnight use is added to the harbor.



The existing harbor in Zippel Bay was rehabilitated in 2014 to replace the seawall, dredge the harbor, increase docking capacity and improve the boat ramp. Additional improvements will be planned.

Recreational Use and Visitor Facilities

Recommendations

Friends of Zippel Bay State Park organized in 1984 to create more community interest and involvement with the park's activities and future development. The Friends of Zippel Bay State Park meets regularly, sponsors activities at the park and has made recommendations for park improvements. The Friends group was involved in drafting the updated management plan.

DNR is proposing improvements to trails and facilities to make operations more efficient, provide better and more organized camping and day use facilities, and to provide better campgrounds and facilities within the natural setting of the park.

Recommendations for improvements at Zippel Bay State Park were generated from public input meetings, the Friends of Zippel Bay State Park and the NW Region DNR Parks and Trail staff. The following recommendations for improvements at the park represent the work of each group and implementation will be contingent on system wide priorities and availability of funding.

1. *Address the need to accommodate larger recreational vehicles and those who visit the park to fish on Lake of the Woods, by establishing a semi-modern campground to accommodate recreational vehicle campers, especially those intending to launch boats. There are a few options for siting this semi-modern campground. These options are:*
 - *Constructing a campground adjacent to and including, Angler's campground. This campground should include a sanitation building, host site, screened picnic shelter, and electrical sites. It should increase the number of sites at this location. The campground should have pull-through sites for people towing boats with recreational vehicles. This site has the advantage of drier soils.*
 - *Review the possibility of establishing a semi-modern campground closer to the harbor and marina area of the park. This option requires additional analysis of wetlands, wet forests, soils, and topography. It has the advantage of keeping campers with boats closer to the launch site.*
2. *Provide quality rustic and group camping options. The following enhancements will be considered and projects could occur in stages:*
 - *Redesign Birch and Ridge campgrounds to accommodate rustic and/or group camping, design may include closing some existing campsites*



Several drives in the park are narrow and difficult for large recreational vehicles to pass one another. Photo courtesy of John Tschudy

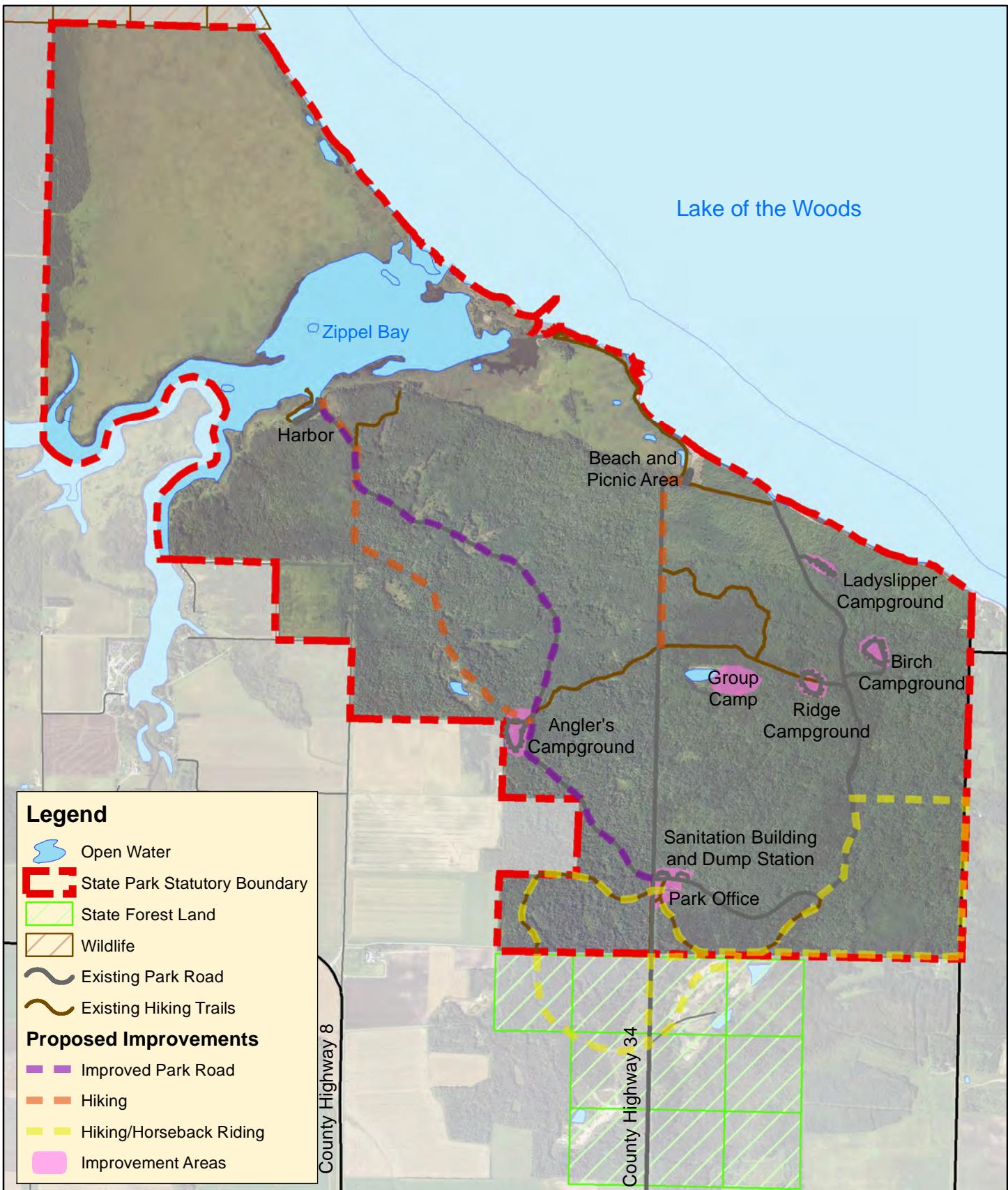
- Evaluate the existing group campground after other group camping opportunities are provided. If abandoned, restore to native vegetation.
 - Reconfigure Ladyslipper Campground, reducing the number of camping sites to create larger sites and more spacing between sites.
3. Explore the possibility of boat-in/hike-in campsites keeping in mind that the Sand Beach-Inland Lake NPC is ranked as critically imperiled and undeveloped shoreline in its natural state is rare. Preliminary resource assessments determined the east side of the channel may be the most suitable for a few sites.
4. Recommendations for facilities and infrastructure are as follows:
- A sanitation building with flush toilets and showers is an essential part of a semi-modern campground. The current sanitation building is not near any campground and has vault toilets. Remove the existing sanitation building, only after a new sanitation building is constructed. Devote this area to trailhead parking and a dump station (dump station currently exists in this area).
 - Construct a new entry plaza with visitor information and self-registration. Self-registration may include electronic alternatives.
 - Replace the current contact station with a new park office primarily for administrative use. This could include a small area for public contact that meets ADA regulations.
 - Improve the harbor road to handle larger vehicles without encouraging higher speeds.
 - Complete Phase II of harbor improvement plans.
 - Explore the ecological and economic feasibility of installing an observation deck overlooking the marsh, and installing a trail corridor or boardwalk from the beach through the marsh to the harbor.
5. Recommendations to enhance uses at the park are as follows:
- Protect the gravesite near the harbor.
 - Landscape the site at the flowing well near the beach, place benches and tables at the site.
 - Designate a trail corridor in the south part of the park for horseback riding including an access from the east side, and joining into the forestry land trails to the southwest. Consider options for providing horse trailer parking.
 - Construct a loop connector trail from the main beach down the east side of beach road to connect to the existing hiking trail.
 - Locate and construct a hiking trail route from the harbor to Angler's campground, west of the harbor road.
 - Designate a trailhead at the main beach parking lot.



This grave site is located just south of Zippel Bay harbor. Photo courtesy of John Tschudy

- *Consider overnight camping on boats in the harbor after Phase II of the harbor improvements is complete.*

The time frame for implementing these recommendations is not determined and may vary. Phase I of the harbor rehabilitation has been completed and additional improvements will be planned. Improvements to Angler's Campground will follow, as funding becomes available. Implementation of other recommendations in this plan is contingent on addressing environmental issues, cultural resource issues, and obtaining funding for materials and labor.



Zippel Bay State Park

Figure 7: Proposed Facilities and Trails



Minnesota Department of Natural Resources
Division of Parks and Trails
August 2016

0 0.25 0.5 1 Miles

N

11. Park Operations

The manager of Big Bog State Recreation oversees the management for several state recreation areas in the Northwest, including Zippel Bay State Park, Franz Jevne State Park, Garden Island State Recreation Area, Blueberry Hill Forest Campground, Faunce Forest Campground, Manitou Rapids wayside rest, and various public water accesses. Zippel Bay State Park also currently has a park ranger, seasonal workers, and a Greenview worker. This complement of staff keeps the park operational in the warm weather season. The park is open during the winter for winter activities, although winter visitation is typically low. The management structure will be periodically evaluated. This may result in management and staffing changes.

As recommendations in this park plan are implemented, the annual operational budget would need to be evaluated and possibly adjusted. New development projects such as a new semi-modern campground or the reconfigured group campground would increase park visits, which may increase operational costs. Decisions related to development of new facilities, operational activities and funding will also be guided by the Parks and Trails System Plan and division management structure.

Partnerships

Friends of Zippel Bay State Park will continue to work with DNR Parks and Trails staff to improve opportunities provided Zippel Bay State Park. The partnership promotes collaboration between the park and the Lake of the Woods community.

Enforcement

Currently, two division staff at Zippel Bay State Park are qualified as park rangers, which enables them to address some enforcement issues. For more serious enforcement issues, the park staff calls on DNR conservation officers or the Lake of the Woods County Sheriff's Office.

Park Operations Recommendations

1. *Ensure that operations hours are available to implement visitor services and park maintenance activities.*
2. *Ensure that resource management hours are available to implement the resource management actions.*
3. *Monitor and periodically evaluate management structure to determine correct management staffing.*

4. *Explore a means for boat-in harbor users to contribute to the fee schedule for the park.*

12. State Park Boundary

The Minnesota State Legislature establishes state park boundaries. The state park statutory boundary defined in Minnesota Statutes provides staff, citizens, and policy makers with a common understanding of which lands are appropriate for inclusion in the park. Lands are included within a statutory boundary when a landowner has agreed to inclusion. The DNR is then authorized to negotiate with willing sellers for acquisition of lands contained within that statutory boundary. The landowner retains full ownership and rights to the land inside the statutory boundary. Boundary modifications are considered during state park management planning processes. Although a state park management plan can recommend boundary changes, only the Minnesota State Legislature can change state park boundaries.

There are approximately 2,975 acres within the current Zippel Bay State Park statutory boundary. All land within the boundary is owned by the State of Minnesota and managed as part of Zippel Bay State Park. There is no private land within the statutory boundary. 218 acres of Zippel Bay, a public watercourse, are also located within the boundary.

After initial planning phases were completed, one privately owned 80-acre parcel was deleted from the statutory boundary. This management plan does not propose adding or deleting lands from the state park statutory boundary.

13. Plan Modification Process

State park management plans document a partnership-based planning process, and the recommended actions resulting from that process. These comprehensive plans recognize that all aspects of park management are interrelated and that management recommendations should also be interrelated.

Over time, however, conditions change that can affect some of the plan recommendations or occasionally an entire plan. Plans need to acknowledge changing conditions and be flexible enough to allow for modifications as needed.

Plan Amendment

The DNR Division of Parks and Trails has adopted processes for plan amendments (major changes) and plan revisions (minor changes), which are coordinated through the division's planning section. A plan

amendment will be completed to address changes that would vary from the approved management plan.

The Plan Amendment Process consists of five steps:

1. The existing plan is reviewed at the park and regional levels to determine which stakeholders are potentially impacted by a resource condition or proposed change.
2. If the proposed change involves other DNR divisions, the issue should be resolved by staff of involved divisions and approved by the division directors.
3. If the proposed change involves other state agencies, the issue should be resolved by staff and approved by the appropriate division directors from all involved agencies.
4. If the proposed change is potentially controversial among elected boards, user groups or the public, a citizen advisory committee should be established to address the proposed change. A locally advertised open house will be held to encourage public input on the matter, after which point the DNR Division of Parks and Trails division director will determine whether the proposed change should be reviewed by the department.
5. All plan amendments will be coordinated, documented, and distributed by the DNR Division of Parks and Trails planning section.

Plan Revision

If a plan change is recommended that does not meet the amendment criteria above, and generally follows the intent of the plan, the DNR Division of Parks and Trails has the discretion to modify the plan without a major planning process.

Plan Revisions Related to Physical Constraints and Resource Protection

Detailed engineering and design work may not allow the development to be completed exactly as it is outlined in the plan. A relatively minor modification, such as moving a proposed building site to accommodate various physical concerns, is not uncommon. Plans should outline a general direction and document the general “area” for development rather than specific locations. For the most part, plans are conceptual, not detail-oriented. Prior to development, proposed development sites are examined for the presence of protected Natural Heritage Program elements and historical/archaeological artifacts. If any are found, the planned

project may have to be revised to accommodate the protection of these resources.

Program Revisions

The resource management and interpretive services plans are separate internal shorter term planning documents and should be updated periodically as needed. The DNR Division of Parks and Trails' resource management and interpretive staff will determine when an update is needed and coordinate the revision with the DNR Division of Parks and Trails planning section.

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