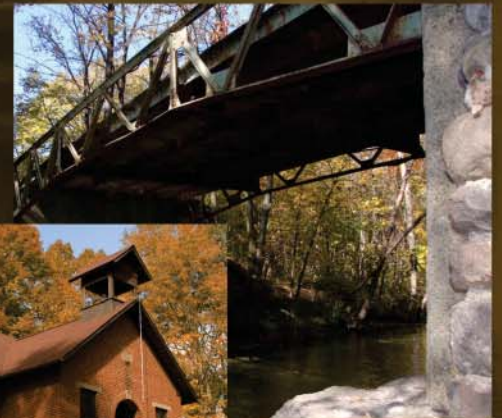


# Chain O' Lakes State Park Interpretive Master Plan 2010





# Contents

Introduction . . . . .	.1
Resource Overview . . . . .	2
Natural History . . . . .	2
Cultural History . . . . .	5
Existing Conditions . . . . .	.9
Audiences . . . . .	9
Facilities . . . . .	10
Staff . . . . .	10
Programs . . . . .	11
Media . . . . .	12
Partnerships . . . . .	.13
Regional Offerings . . . . .	.14
Interpretive Themes . . . . .	.15
Recommendations . . . . .	.16
Schoolhouse . . . . .	16
Wigwam . . . . .	18
Nature Center at the Beach . . . . .	19
New Facility . . . . .	20
Canoe Trails . . . . .	.20
Other Trails . . . . .	20
Signs . . . . .	20
Staff . . . . .	21
Programs . . . . .	21
Partners . . . . .	22
Phases . . . . .	.23
Summary of Recommendations . . . . .	24
Appendices . . . . .	.25
Appendix A: Wetlands . . . . .	25
Appendix B: Tree List . . . . .	26
Appendix C: Plant List . . . . .	27
Appendix D: Fauna List . . . . .	31
Appendix E: Stanley School narrative . . . . .	32
Appendix F: Canoe Trail Map . . . . .	.34
Appendix G: Hiking Trail Map . . . . .	.35

# Introduction

In response to new management, and the resulting opportunity to assess and evaluate, the Indiana Department of Natural Resources, Division of State Parks and Reservoirs has developed this Interpretive Master Plan for Chain O' Lakes State Park.

The plan provides a resource overview of the park's natural and cultural resources and a summary of existing conditions for interpretation. This is followed by interpretive recommendations based upon resources and conditions.

As Chain O' Lakes celebrates its 50th birthday, the park is ready to move forward in interpretation. To do so, the plan recommendations address:

- A Nature Center that is accessible from the high use areas of the park
- Maximizing the schoolhouse for cultural interpretation
- The management issues of historic preservation, lake eutrophication, invasive plants and species protection.
- Expanding programming to year-round to reach underserved audiences, and
- Full-time staff to ensure program expansion, evaluation and long-term high quality with less turnover.

It is the intent of this plan to provide direction for the next several years. The next decade will be important for the interpretive program at Chain O' Lakes State Park.

# Resource Overview

The following resource overview is based largely on regional information. A Resource Management Plan will be developed to provide additional interpretive and management direction.

## I. Natural History

### A. Geology

#### 1. Formation and Soils.

The soils, topography and hydrology of the park are related to the park's ice age past. Roughly 13,000 – 14,000 years ago, the most recent Wisconsin glacial period ended. The Saginaw and Erie lobes of that glacier melted and receded from the area. Meltwater flowing below, through and on the surface of the glacier carried dislodged rocks and gravel that had been embedded within the ice. Heavier rocks were dropped first, followed by progressively smaller and lighter rocks. This resulted in an outwash plain of sorted sand and gravel. The plain makes up large portions of the park. Unsorted material, called till, covers other portions of the park. Till was deposited by the retreating glacier as it melted, rather than being carried by meltwater. Till is a mixture of sand, silt, clay, and boulders.



Soil profile near Long Lake seep

The park's glacial origins create a landscape of rolling hills, ravines and low lake areas.

#### 2. Kettle Lakes.

The park's interconnected lakes are also of glacial origin. The lakes are kettle lakes, formed as large pieces of ice broke free from the glacier and were buried. The ice blocks gradually melted leaving deep water-filled depressions. Over time, natural erosion has filled in the lakes from the edges. Some smaller kettle lakes have completely filled in and are now low depressions. The organic-rich fill, differing from the gravel and sand of most of the park, defines the depression's former depth and contours.



Seep area, Long Lake in the background

#### 3. Esker.

Trail 8 between Bowen and Finster lakes follows an esker. An esker is a narrow ridge consisting of deposits from a stream running beneath a glacier.

#### 4. Kame.

A conical hill lies between the two Finster Lakes on Trail 8. This feature formed as ice crevasses filled with sand and gravel. On older topo maps, a similarly formed rise near Long Lake is called Egan's point.

#### 5. Seeps.

A seep is on the east side of Long Lake. A seep results when groundwater oozes from a broad area. The water coming from the seep forms a small stream that is visible from the lake shore.

### B. Water

#### 1. Lakes

Chain O' Lakes State Park includes 212 surface acres of water. The interconnected lakes are what give the park its name. Narrow wooded channels, some with steep slopes guide canoes between the lakes. Some of these channels appear to have been dredged. Spoil mounds line the channel between Bowen and Sand Lakes along Trail 7. If these are indeed spoil mounds, they probably pre-date the park as fairly large trees now grow on them.



Bowen Lake

Although naturally formed, the lake level is elevated by a small dam at the western edge of the park along Highway 9. The higher level improves boat access for fishing. The park permits only trolling motors on the lakes. Ice fishing is popular when the lakes freeze.

The park is surrounded by agricultural land. Nutrient run-off from surrounding properties is resulting in eutrophication and siltation of the lakes. Eutrophication is noticeable at Long Lake where water first enters the park from surrounding agricultural land. This issue will need to be addressed to ensure the health and longevity of the lakes.



Wetlands on channel between Bowen and Sand Lakes

## 2. Wetlands

In contrast to lakes outside the park boundaries, most of the park's shorelines are undeveloped, allowing wetlands to exist. The steep slopes of the surrounding hills as well as lake depth limit wetlands to the immediate lake margins and channels. See wetland map Appendix A. Wetland identification is based on aerial map review only. A professional delineation is recommended.

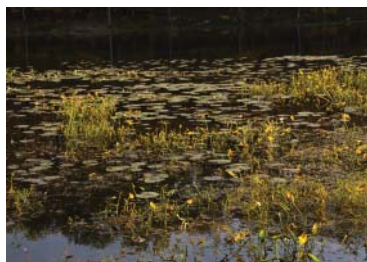
## C. Plant Communities

### 1. Historic communities

There are no available historic records of the original vegetation found in the park. The park itself lies within the Northern Lakes Region (Homoya). This region had oak and hickory forests on the uplands, and wetlands in lowlands. It is believed that the park had little prairie and was primarily forest with narrow wetlands around the lakes. Research into circa 1800s vegetation would be valuable for park management and interpretive direction.

### 2. Present Conditions

Today the park contains several communities.



a. Forest. Forest covers a large percentage of the park. Mature forests are seen in several locations of the park. Forests contain mature oak, hickory, maple and beech trees with little recent disturbance. Several locations are being evaluated for possible Nature Preserve dedication.

Other parts of the park have younger woods that are second or third growth. Some of these young woods are dotted with dead or dying apple trees. These areas were once orchards. The southeast corner of the park on Trail 6 offers a good example of this.

Timber stand improvement maintains oak stands. A slope near the beach will has had some of its under story removed allowing the oaks to regenerate.

A tree list from October 10-11, 2010 is found in Appendix B.

b. Old Field. Large portions of the park were farmed. Some have reverted to woods. Others are old field habitat.

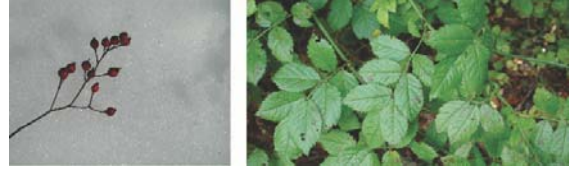
One area is being maintained as old field to provide habitat for the Henslow's sparrow. Other fields are dominated by autumn olive and other invasives.

c. Aquatic. The lakes contain submergent and emergent vegetation. Increased nutrient run-off from agriculture around the park has increased the amount of aquatic vegetation in the eastern end of Long Lake.

d. Listed Species. An up-to-date plant list compiled by Tony Fleming appears in Appendix C. The list identifies State listed species. Short's aster and perfoliate bellwort are both state endangered species. Red baneberry is listed as rare in Indiana. Yellow ladyslipper is on a watch list.

### 3. Invasive Species

Much of the park's acreage was agricultural land when acquired by the State. Once left to succession, introduced species such as autumn olive and multi-flora rose quickly flourished. Controlling these species will need to be addressed in a resource management plan.



In the 1980s, the DNR started a program called Energy Acres. Black locust was planted at the park to provide a source of firewood. This program is no longer supported. Unfortunately, the black locust trees have spread. Some parks have eradicated this aggressive species. Chain O' Lakes has plans to do this as well.



Top: multiflora rose hips and leaves  
Above: autumn olive with berries

Invasive species identified on October 10-11, 2010 include autumn olive, bush honeysuckle, multiflora rose, privet and garlic mustard.

## D. Fauna

The fauna of the park is representative of species found in northeastern Indiana. Raccoons, squirrels and other small mammals are prevalent. Birds include those dependent on forests, such as woodpeckers, those dependent on old field such as the Henslow's sparrow and those that require aquatic habitat such as herons and wood ducks. Sand Lake is annually stocked with trout. A Fauna list from October 10-11 can be found in Appendix D.

Of particular note:

### 1. White-tailed Deer



Evidence of beaver

Abundant edge habitat, absence of predators and hunting prohibitions at the park, have resulted in an unsustainable deer population. As with other parks, Chain O' Lakes has a controlled hunt to manage the deer population. In 2009, 93 deer were taken from the park.

### 2. Beaver

Beaver were historically present in the region. Numbers were reduced during the fur trade of earlier centuries. Today, beaver are present again. Chain O' Lakes provides ideal habitat for beaver. Dams and lodges are easily seen from trails. Trail 8 along Finster Lake is reinforced by beaver dams.

### 3. Emerald Ash Borer

Indiana State Parks is currently on alert for the emerald ash borer. This insect kills ash trees, a major component of forests at Chain O' Lakes. Restrictions on transporting firewood are in place to prevent this insect's spread.

### 4. Henslow's Sparrow

The Henslow's sparrow is a Federal Species of Concern and a State Endangered species in Indiana. It is a high priority for grassland bird conservation.

The Henslow's sparrow prefers moist pastures and meadows. It is more commonly found in northern Indiana,

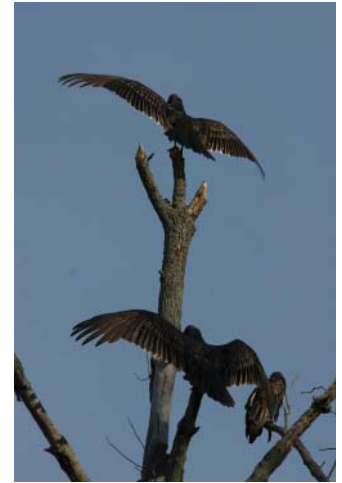


but can be locally common throughout the state. Henslow's sparrows are summer residents and winter primarily along the Gulf Coast.

Chain O' Lakes manages a field for Henslow's sparrows. A mowing program maintains the old field habitat preferred by the sparrow.

### 5. *Turkey Vultures*

Roughly 50 turkey vultures were seen roosting near the junction of Trail 1 and Trail 2 between Bowen and Dock Lakes.



*Turkey Vultures*

## II. Cultural History

### A. Native American

#### 1. *Mounds*

There is a reported Indian mound on the property north of Bowen Lake. Very little survey work has been done.

#### 2. *Village*

In addition to the mound, three numbered sites are recorded, plus an unnumbered site in Section 10, all within the park boundary. A village of 30 wigwams reportedly existed north of Bowen Lake. Bowen Lake was once called Indian Lake, which might lend credence to this. Temporary villages have been identified throughout Noble County.

Both Miami and Potawatomi tribes were present in Noble County, so either or both were present at the park.

The Potawatomi had large summer villages. These villages were along streams or rivers. In the winter, however, the village dispersed into smaller family camps. Families survived on dried and stored food, and on hunting and trapping. Ice fishing was a means of getting food.

The Potawatomi lived in wigwams. Wigwams were constructed of pole frames covered with bark or woven cat-tail mats. Bark canoes transported them through the lake region.

The Potawatomi had extensive corn fields in the summer. Grasslands were periodically burned. Ecologists speculate that the landscape first encountered during European settlement had been altered by Native Americans.

The land that includes Chain O' Lakes was transferred for European settlement in the 1828 Treaty of Carey Mission. The treaty was with the Potawatomi and transferred lands south of present-day Highway 6 to Columbia City and the Eel River.

### B. European Settlement

One of the first settlers on the property was William Bowen, who arrived in the 1830s. In 1840, he had a home on the north side of Bowen Lake.

## 1. Farming

The land that includes Chain O' Lakes became part of Indiana in 1828. This opened the way for European settlement. The northern part of Indiana was settled last as it was the least accessible by river and road. Large swamps and wetlands hampered farming. Indians still took refuge until the 1830s, decades after southern Indiana was settled. Many settlers came to northern Indiana from Ohio, the Mid-atlantic and some New England states.

When settlers arrived, forests were cleared and crops planted. Some of the cleared wood was used for fences and buildings. Most was burned.

Once roads and canals became established and further land was cleared, it became possible for farmers to sell surplus crops and livestock. An early road crossed Noble County and connected the county with Ft. Wayne and the Wabash and Erie Canal to the southeast, and South Bend and Lake Michigan to the northwest.

When Chain O' Lakes was dedicated in 1960, much of its acreage was farmland, pastures and orchards. Some is maintained as old field habitat. Other areas are reverting back to forest.

## 2. Stanley Schoolhouse

A one-room schoolhouse resides on the property and serves as the nature center. The Stanley schoolhouse was built in 1915. This is the third schoolhouse at the site and was named for the landowner. The first schoolhouse was a log building. The second wood frame schoolhouse was burned down by an arsonist. The current 1915 structure is brick. The building includes one large classroom area, two walk-in closets and a basement. The classroom has the original blackboard, roll-down maps and desks. A belltower with a bell is above the entrance.



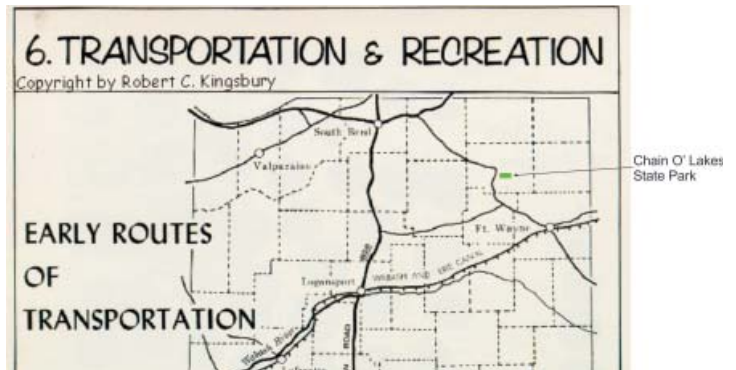
The park has the original school bell. A hand pump, now gone, was immediately outside of the building. The building functioned as a schoolhouse until 1954. (See Appendix E)

In 1785, the Land Ordinance created the provision that the sixteenth section of land in each township be set aside to support schools. Following Indiana's statehood in 1816, many local governments sold the sixteenth section and used those funds to build a schoolhouse. In some cases, land was donated for use as a schoolhouse site and the cost of constructing the schoolhouse came from public funds.

Prior to 1850, there was no statewide public school system in Indiana. Schools were locally controlled and financed. There was a huge disparity in the quality of education throughout the state. In 1852, the General Assembly passed a law that created a state property tax for education. The law was challenged and defeated as being unconstitutional. In 1867, it was passed again and has remained in place.

Following the 1867 law, log schools gave way to frame and brick schools. The school term increased from 68 days in 1866, to 136 days in 1879, to 149 in 1900. Enrollment also grew.

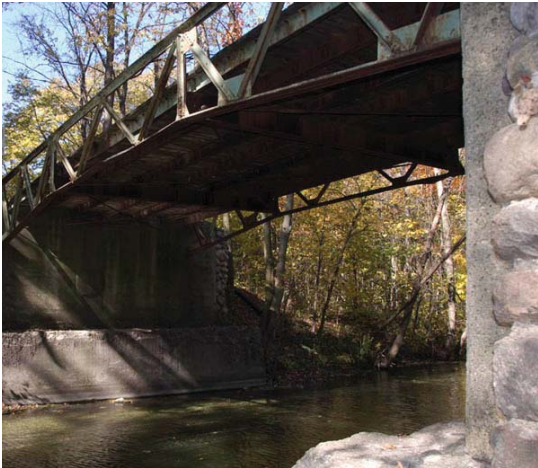
Rural schools still suffered with less money spent per pupil. Most rural children attended ungraded, one-room





schoolhouses with low paid and less experienced teachers. One-room schoolhouses became the symbol of poor education. In 1907, the legislature closed all schools with fewer than 12 students. Those students were provided transportation to larger schools at public expense. Between 1890 and 1920, nearly 4,000 one-room schoolhouses closed in Indiana.

Prior to the Civil War, most teachers were men, but a shortage of men and a willingness to work for low wages led to the shift from male to female teachers. In 1860 only 20% were female. By 1900, 50% were women and by World War I, the percentage was 66%.



The Stanley Schoolhouse is an extremely valuable historic site. It represents an era in rural Indiana when small, locally governed and located schools dotted the landscape.

### 3. Iron Bridge

Portions of Trail 4 once served as a county road and still function as a park service road. At one point, the trail crosses a stream via an iron bridge. The bridge has been altered and is in poor condition. Some of the supports are disintegrating.

An upper level of the truss appears to have had something attached to them. Brackets with threaded holes may have held a railing (see photo left).



The bridge is not registered with the state and there is no information about its age.

The truss pattern is a Warren Truss, which is made up of equilateral triangles. The Warren Truss was developed in Britain in 1848 and was soon after introduced in the United States.

Truss systems are a series of triangles that create a support structure. The structure distributes load weight across the bridge into the abutments and finally the ground.

Metal truss bridges were the most commonly built type of bridge between 1850 and 1925. They replaced wooden covered bridges, using the same truss styles as covered bridges. Metal bridges were better able to withstand the elements, so didn't require being covered. Components of the bridges were prefabricated in factories, making them easier to produce.

### 4. Lake Homes

Several private homes were built along the shores of the park's many lakes. Some of these were year-round dwellings, while others were seasonal lake cottages. Many of them were torn down in 1960 when the park was established. Some of the seasonal cottages were rented to park visitors before being torn down.

## C. Park History

Chain O' Lakes was created by the commissioners of Allen, Whitley and Noble counties. The counties raised enough to purchase 1200 acres. The state purchased an additional 300 acres and the park was dedicated in 1960.

## References

Geologic Story of Chain O' Lakes State Park, brochure, Indiana Geological Survey

Paddle into the Pleistocene at Chain O' Lakes State Park, IGS website, <http://igs.indiana.edu/geology/places/chainOLakes/index.cfm>

Natural Regions of Indiana, Michael Homoya

The Sibley Guide to Birds, David Allen Sibley (Henslow's sparrow)

Indiana DNR website, 2009 deer reduction report, Mike Mycroft

The Indiana Way, James H. Madison (treaty and education information)

Chain O' Lakes State Park Map

Stanley School, Noble County Library web site, <http://gen.nobleco.lib.in.us/Schools/StanleySchool.htm>

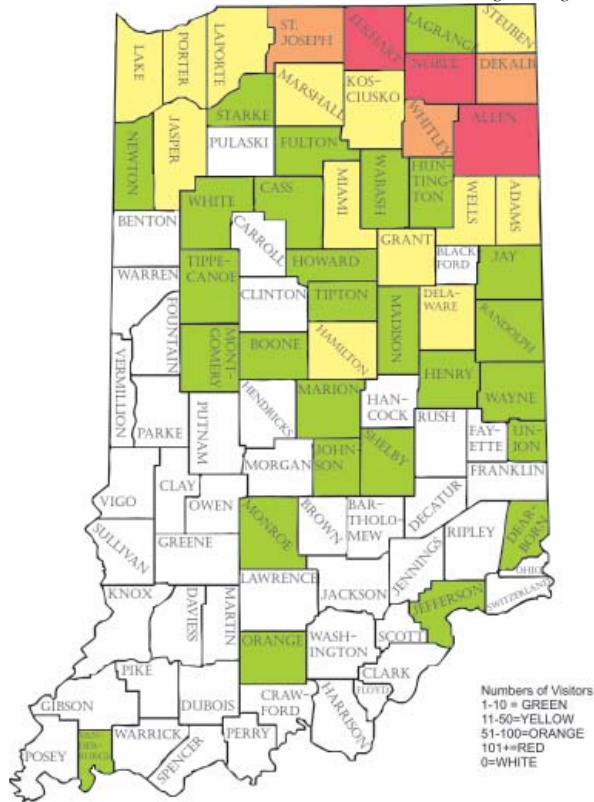
# Existing Conditions

## I. Audiences

### A. Nature Center Attendance

Demographic information comes from the 2009 Nature Center register. Signing in at the register is optional, so represents only a portion of total attendance.

*Indiana attendance distribution based on Nature Center guest register*



### B. Park Visitors

The majority of park visitors come from Ft. Wayne, which is located in the county east of Chain O' Lakes. Visitors include a mix of day-use and overnight campers. Day-use visitors come for swimming at the beach, canoeing and family picnics. Campers are coming for longer family vacations.

### C. Geography

#### 1. Indiana

The highest visitation numbers are from Noble, Allen and Elkhart Counties. The park is located in Noble County. Allen and Elkhart are adjacent counties with large populations. Allen County, which includes Ft. Wayne, provided the most visitors. Fort Wayne is the second largest city in Indiana and is located in a county adjacent to the park.

The highest visitation came from the northeast corner of Indiana. Visitation diminishes as one gets further from the northeast corner.

Of interest is the high number of small towns represented on the guest registry. Almost 50% of the towns listed on the registry have populations under 5,000. Citizens of these towns represented 32% of the attendance.

#### 2. Out-of-State

Eight states were represented on the 2009 Nature Center register. In order of highest to lowest attendance, they were: Michigan, Maine, Illinois, Ohio, Florida, Maryland, Arizona and Connecticut. The nation of Nepal was also represented.

### D. Program Attendance

#### 1. General Public Programs

Since the seasonal interpreter position is scheduled primarily during the summer, most of the programs are offered for the public park visitors. A variety of hikes, talks and activities are offered by the interpreter. According to the activity report for May and June of 2010, the most popular public programs in order of attendance were:

- a. Craft programs
- b. Animal-related hikes
- c. Night hikes
- d. Animal talks (including live animal programs)



## 2. Groups

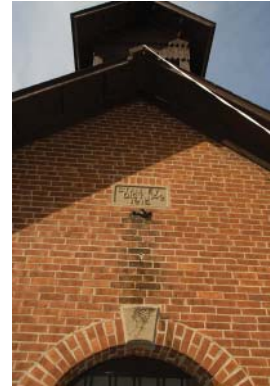
The interpreter works primarily from Memorial Day to Labor Day with weekends in the spring and fall. This limits the number of school groups that can be accommodated. Scouts also are most active during the school year, so there are few troops attending programs.

## II. Facilities

### A. Stanley Schoolhouse

The 1915 schoolhouse serves as the nature center. Its history is covered in the Resource Overview. The building has a large classroom area with old-fashioned desks and current exhibits. Live animal exhibits line one wall. There is no modern restroom or water at the building.

The building is not located near high use areas of the park such as the beach or campgrounds. Visitors to the building either drive or bike. It is located at a trailhead for Trail 8 which links to other trails.



*Stanley Schoolhouse*



*Park Trail*

### B. Trails

Eight trails connect the lakes to high use areas such as the beach and campgrounds in the eastern half of the park. Trails are listed as either moderate or easy. Only Trail 4 crosses into the western portion of the park.

### C. Beach

The beach includes a concession stand and facilities that once served as a lifeguard station. Roving interpretive programs have been successful at this high use area. The canoe rental is located near the beach. Canoe programs originate at the rental.

### D. Campgrounds

Chain O' Lakes has a large campground with 413 sites. On busy weekends, the campgrounds fill to capacity. A large field in the campgrounds serves as a play field and performance area.

## III. Staff

Interpretive staff at Chain O' Lakes is currently limited to one 90-day position. The 90 days are scheduled primarily from Memorial Day through Labor Day with weekends in the spring and fall. Last summer, a YHCC worker was assigned to help the interpreter.

The park has been fortunate to have the same individual for several years. This has helped with program continuity, assessment, planning, and public relations.

## IV. Programs

The limited number of staff days available limits the programming to the summer season and spring and fall weekends. Programs are largely geared to the general public. Schools, scouts and other organizations that schedule during the school year have almost no opportunity to schedule with the interpreter.

A variety of hikes, talks and activities are scheduled throughout the summer. Two to four programs are scheduled daily. Programs originate at the Nature Center, Campgrounds, Beach or Canoe Rental.

### A. Successful Programs

Topics that have been proven successful in terms of attendance are fish dissection, beavers, live animals, and edible and medicinal plants.

### B. Canoe Programs

A floating campfire program involves a floating platform on which a fire is built. The audience is in canoes which may be rented. A Poker Paddle involves canoeing to several locations and acquiring a card at each location. Once a full hand is achieved, the winning hand wins a prize.

### C. Themed Weekends

A series of themed weekends are offered with three programs on Saturday and one on Sunday. Theme topics include: Smokey Celebration (with prescribed burns, Smokey the Bear, campfire program, etc.), Apples, Exercise and Heritage Skills.

### D. Day Camp

A Junior Master Naturalist day camp was offered during the summer. This program was well received.

## V. Self-Guided Media

### A. Nature Center Exhibits

The Nature Center, located in the schoolhouse, uses the classroom area to house several exhibits. Some exhibits were developed at the park, others were donated from other parks. Live animals are displayed along one wall and there is a touch table. The exhibits are located along the periphery of the room. The center of the classroom has the original school desks, chalkboard and maps.



*Stanley Schoolhouse interior*

### B. Self-guided Trail

A self-guided trail originates from the schoolhouse. The trail uses a brochure with corresponding numbered posts. The theme is general and includes plant, animal signs, ecology and geology stops. A few stops are confusing. Stop 8 refers to a dead tree that is no longer standing. There is a #15 post although the text only goes to 14 stops.

### C. Wildflower Brochure

A wildflower brochure is being developed. This brochure is a comprehensive listing of flowering plants found in the park. More informational than interpretive, the brochure will be a useful tool for programs and hikes.

### D. Signs

Two generic signs are located at the park. One is about deer management at the state parks and is located at the schoolhouse parking lot. The other covers park resource management and is located at the main beach.

### E. Bulletin Boards

Several bulletin boards are located in the park including at the campground restrooms. Information and program schedules are posted on the bulletin boards. The campground bulletin boards are awkwardly placed. They face the exterior walls of the restroom/shower buildings equally distant from either end of the building, where entrances are located.



# Partnerships

## A. Black Pine Animal Sanctuary

This non-profit organization takes in exotic animals that were formerly pets, zoo animals or circus animals. The facility is located in Albion, Indiana, close to Chain O' Lakes. The park and the sanctuary have conducted live animal program exchanges.

## B. Columbia City SWAT

A triathlon was held at the park in September 2010 with 220 participants. The event was hosted by the Columbia City SWAT. Proceeds from the event went to the Indiana SWAT.

## C. Noble Count Convention and Visitors Bureau

The Visitors Bureau publishes a guide to the county that includes park information.

## D. Garret Boy Scouts

The scout troop assisted the interpreter with the fall Haunted Trail program.

# Regional Offerings

## Within 5 miles of the park

1. Albion, Indiana. Historic courthouse and Old Jail Museum
2. Merry Lea Environmental Education Center. The Center is a part of Goshen College, and is located in Noble County. The large property offers educational experience for college students and programs for school groups. Additionally, the property is open to the public and has trails through a variety of ecosystems.
3. Black Pine Animal Sanctuary. The sanctuary takes in exotic pets, zoo animals and circus animals. The organization offers programs for the public.
4. Ralph F. Gates Nature Preserve, ACRES Nature Preserve, 121 acres with two miles of trails.
5. Bender Memorial Forest. ACRES Nature Preserve, 116 acres with parking and a 1.3 mile trail.



## Within 10 miles of the park

1. Gene Stratton Porter State Historic Site. The 125 acres of natural area includes the author's 1913 home and gravesite.
2. America Windmill Museum. The museum grounds have several windmills of different styles, an exhibit area and gift shop.
3. City of Kendallville. Kendallville has several buildings on the National Register of Historic Places. The Parks and Recreation Dept. manages Bixler Lake and Park.
4. Detering Nature Preserve. ACRES Land Trust, 54 acres, .7 miles of trails
5. Lonidaw Nature Preserve. ACRES Land Trust, 30 acres, .8 miles of trails

## Within 15 miles of the park

1. City of Ligonier. Ligonier has several buildings on the National Register of Historic Places.
2. Tri-County State Fish and Wildlife Area. The DNR managed property is 3,546 acres in size with 650 acres of lakes and impoundments. Activities include hunting, fishing and wildlife viewing.
3. Jennie Thompson Memorial Gardens, Ligonier. The gardens contain 12,000 annuals that are planted in late May. June to September provides the best viewing.
4. Spurgeon Woodland Reserve. ACRES Land Trust, 65 acres with trails
5. Dygert Nature Preserve (Whitley Co.). ACRES Land Trust, 134 acres, 2.2 miles of trails
6. Bicentennial Woods (Allen Co.). ACRES Land Trust, 79 acres, 2.6 miles of trails

# Interpretive Theme

## Chain O' Lakes State Park Interpretive Theme

The resource-rich lakes at Chain O' Lakes State Park have influenced humans both past and present.

Sub-themes and related topics:

1. The most recent ice age created the lakes and other geological features
  - a. Lake formation
  - b. Kames and eskers
  - c. Soil for farms and orchards
  - d. Seeps, wetlands and hydrology
  
2. The lakes have created conditions beneficial for species diversity
  - a. Habitat diversity
  - b. Aquatic life
  - c. Wildlife diversity
  
3. The lakes have long attracted people for both survival and recreation
  - a. Native Americans: mound, village site
  - b. European settlement: farms, schoolhouse, iron bridge, vacation cottages
  - c. Park History: creation of the park, early park years
  
4. Today, managing Chain O' Lakes State Park includes managing the lakes for the future.
  - a. Plants: invasive plants, timber stand improvement, listed species
  - b. Water: eutrophication, water quality
  - c. Wildlife: listed species, deer management, emerald ash borer
  - d. People: fishing, boating, other recreation



# Recommendations

## I. Schoolhouse

The Stanley Schoolhouse is a treasure. It is an historic structure that is in relatively good condition. It offers a rare trip into the local past and contains many of the original artifacts such as chalkboards, maps and the school bell. One enters the building and is transported back into time.

Returning the schoolhouse to a 1915 classroom is recommended for the following reasons:

- It is a significant interpretive tool. Visitors walk into an exhibit and become part of the experience.
- The 1915 classroom ties nicely with the park setting. Many early classrooms focused on “nature study”. Children of this era were more in tune with their environment than children are today.
- For programming with local schools, this site has the potential to be extremely successful. Programs that meet curriculum requirements for history as well as math, science and reading can be marketed to the region.
- This site ties nicely with the nearby Gene Stratton Porter site which dates from the same era. Many of the author’s books were written about and for school-aged children of the early 1900s.

### A. Building Structure Recommendations

#### 1. *National Registry of Historic Places.*

Due to its lack of alterations, excellent condition and historic importance, the Stanley Schoolhouse should be nominated for the National Registry of Historic Places. Submitting an application requires contacting an Indiana Historic Preservation Officer. This position is within the Indiana DNR. Application information may be found at <http://www.nationalregisterofhistoricplaces.com/forms.html>

Receiving this designation would assist with future grant applications, donations, recruiting volunteers and other types of assistance.

#### 2. *Structural Improvements.*

a. Ceiling. The ceiling near the chimney is showing signs of water damage. It should be repaired before it becomes a structural problem. Perhaps with an historic designation, funding would be available for this project.

b. Ramp. While the ramp is needed for access, the current ramp blocks the visual appeal of the building. An alternative would be a wheelchair lift.



Wheelchair ramp

### B. Interior

#### 1. *Removing “modern” exhibits.*

Natural history exhibits that fit in with the 1915 classroom setting include the taxidermy mounts, collections such as the arrowheads, and touch table items. The touch table could be a “Show and Tell” exhibit. The modern exhibits such as the park map, live animals and those donated from other parks should be moved to the beach “annex” (see later recommendation).



Possible 1915 era exhibits

#### 2. *Restoring the classroom to 1915.*

Many of the original classroom features exist: desks, maps and the chalkboard. These could be added to and enhanced. Possible additions: clock, globe, lantern, period books, teacher’s desk from the time period, portrait of Woodrow Wilson (or earlier president), a 48-star flag, individual slate boards, readers, lunch pails, or a pot belly stove.

The names of children from township families circa 1915 should be up on the chalkboard.



*Original roll-down map*

### *3. Roll-down maps.*

The original roll-down maps are in the classroom. They are very fragile and should be evaluated. Based on an assessment, they may be restored or removed and archived.

## C. Exterior

### *1. Building Exterior Tour.*

During a recent visit, many visitors were observed at the schoolhouse looking at the building and strolling the grounds even though the building was closed. Since the schoolhouse is a draw, it would be good to offer something for people when the building is closed.

The exterior tour could be on a sign or a brochure with the opening line “Can You Find . . .”. Features of the building would be briefly explained and visitors would try to find all of them. Possible features include: coal chute, bell, keystone over the doorway, flag holder and tie off, “what’s wrong with the date over the door?” (backwards 9).



*Schoolhouse date*

### *2. Interpretive Sign.*

An exterior sign would give the history of the Stanley Schoolhouse, its location in the township and the area farms whose children made up the student population. Interior photos of the schoolhouse would provide a glimpse inside the building during closed hours. Historical images and plat maps would provide additional images.

### *3. Outdoor Gathering Area.*

There are several picnic tables outdoors near the schoolhouse. A small amphitheater area would create a better program space for groups. This could be located on the slope below the schoolhouse, facing the lake. This would leave the immediate school yard available for old-time games.

### *4. Hand Pump.*

A hand pump once existed near the entrance to the schoolhouse. Restoring the pump would provide a more authentic appearance and provide an interactive feature.

## D. Self-guided Trail

A trail brochure with corresponding numbered posts originates at the schoolhouse and follows Trail 8 around Finster Lake. The trail is short in length and works well for a self-guided tour. At present the trail brochure stops cover general nature topics.

Tying the trail to the schoolhouse would expand the site. The theme would center around “What every child knew in 1915.” Children of a century ago were much more attuned to the natural world and spent a lot more time in it. Children and youth helped on the farm, walked to school and were outdoors much of the day. Many of their chores involved being outdoors, able to identify plants and animals, and be skilled at hunting, fishing, cooking and tool use.

*Possible topics/stops on the trail that could relate to the theme are:*

- *Nut gathering.* This stop would be at the walnut grove. Children collected nuts for cooking. Walnuts were also a common dye plant.
- *Fishing.* This stop would be at the small pond. Children in 1915 went fishing not for sport, but to put food on the table.
- *Berry picking.* Located at the raspberry patch. Boys and girls would collect berries for pies and jams.
- *Duck hunting.* At an early age, boys were expected to be successful hunters. This stop would be located close to Lake Finster where waterfowl are frequently seen and heard.
- *Wetlands.* This stop, also located near Finster Lake, focuses on perceptions of wetlands in 1915 versus today.
- *Trapping.* Signs of beaver are abundant at the lake in the form of dams and a lodge. Children helped parents trap animals for their fur.
- *Grazing trees.* This stop would be located at the two oak trees that are larger and older than the surrounding trees. Trees like this may have provided shade for livestock or plow horses, or marked a property boundary. At an early age, children knew how to care, feed, and herd livestock as well as handle horses. Many rode horses to school.



*Large oaks on Trail 8*

## E. Programs

### 1. School Groups.

Schools are a perfect audience for the schoolhouse. Working with teachers, curriculum-based programs can touch on aspects of history, science, reading and math. Students would come in costume with a sack lunch and spend the day. Groups could rotate from the classroom to outdoor 1915 games, to the self-guided trail. The wigwam (see next recommendation) would also provide a stop during the program.

### 2. Public Programs.

Short programs or themed weekends would touch on school day reenactments, school yard games, recipes from the era, and 1915 skills.

### 3. Roving Interpretation.

The schoolhouse would be open at scheduled times for passive visits and tours. A costumed interpreter or volunteer would be able to answer questions and interpret the schoolhouse and the 1915 time period.



*Wigwam, Outdoor Discovery Center, Holland, MI*

## II. Wigwam

The Native American story can be illustrated with the construction of a wigwam at the park. Ideally, this could be situated near the schoolhouse. At this location, it could extend the history theme illustrated by the schoolhouse. In addition to the wigwam, other village features such as a fish drying rack, fishing nets and garden could be at the sight.

The wigwam and other features would serve as props for programs. Additionally, unobtrusive signs would interpret Native American history and wigwam construction during times when no programming is occurring.





*Beach lifeguard station*

### III. Nature Center at the Beach

#### A. Location

A large percentage of park use centers at the Beach and Campgrounds. Unfortunately, the current Nature Center, located at the schoolhouse, is distant from either of these two areas. Visitors must drive or cycle to the schoolhouse. It is recommended that a Nature Center be created at the former lifeguard station.

Reasons for the location:

1. Creating a Nature Center at the former lifeguard station places it in the center of activity. The Nature Center would be located where the people are rather than making people travel to the Nature Center. A greater number of walk-ins would visit.
2. The Beach is connected to the Campgrounds by a short trail, making the location even more ideal.
3. The location has easy access to several trails, providing hikes options.
4. There is a staff presence at the beach allowing the interpreter to be away from the building without endangering the safety of the facility or exhibits.

#### B. Facility

The former lifeguard station is made up of small spaces, but removing walls would open it up. In addition, portions of the attached concession could be added to expand the space. The building has running water, something lacking at the schoolhouse.

#### C. Exhibits

Exhibits currently at the schoolhouse that don't fit with the schoolhouse theme would be relocated at the Beach Nature Center. The lake relief map, donated interactive exhibits and the live animals are examples of exhibits that could be moved.

New exhibits would be considered for development. Exhibit topics would fit in with the Chain O' Lakes theme. Examples would be an exhibit on the ice age formation of the lakes, the Henslow's sparrow and fishing.



*Live animal exhibits currently at the schoolhouse*

#### D. Program Area

Large grassy areas around the facility offer opportunities for program areas. This could begin with picnic tables,

followed by a future permanent amphitheater.

## IV. New Facility

A facility designed to be an interpretive center is the best long-term solution. Such a facility would consider a strategic location, plus exhibit, program, office, storage and work space.

## V. Canoe Trails

The interconnected lakes at the park provide an ideal opportunity for canoe trails. The trails would focus on the interpretive theme and sub-themes of the park.

Two trails would originate from the canoe rental. One would head west from the rental to Miller Lake via Weber, Mud and Rivir Lake. The second trail would head east from the canoe rental to Bowen, Dock and Long Lake. See Appendix F for trail locations.

Trail interpretation would be in the form of a waterproof brochure that can be picked up and returned to the canoe rental. The brochure could either be laminated, or printed on waterproof paper.

The brochure would include a map with points marked. Points could include the iron bridge, cypress trees, kettle lake formation, the seep and wetlands. Specific points could be identified with a marker that is easily found, but not easily removed.

## VI. Other Trails

The park's trail system emphasizes the lakes. Most of the trails circumnavigate the lakes. There are large portions of the park that have no trails, and few short loop trails as the park is a corridor.

Additional connected loop trails originating from key public areas would offer more interpretive hike options.

See Appendix G for trail locations.

Some possible locations:

- Beach concession south. This trail would head west toward the Canoe Camp. A cut-off to trail 5 would offer a shorter alternative.
- Campground loop heading south.
- Campground heading east. This trail would offer the option of connecting to Trail 6.

Specific locations will depend on topography, hydrology, natural buffers and other factors of trail design.

## VII. Signs

Interpretive signs are needed to highlight the following park features:

### A. Lake Formation.

This would be best at Sand Lake near the beach. The sign would discuss kettle lakes, wildlife and water quality issues.

## B. Henslow's Sparrow.

This sign would be located at the old field where the Henslow's sparrow management is occurring. The sign would cover information about the sparrow, why it's a listed species, and management actions taken by the park.



*Henslow's sparrow habitat*

## C. Iron Bridge.

A sign on Trail 4 at the bridge would interpret iron bridges (history, trusses) and the county roads that are now park trails.

# VIII. Staff

Many of the recommendations can occur only with the creation of a full-time staff person. The position is important for the following reasons:

- New audiences. The development of new audiences such as schools and scouts requires a presence during the school year. Currently, the position is limited to the summer months and weekends in the fall and spring.
- Creation of an information archive. Very little continuity has occurred due to seasonal staff turnover. There are few photos, inventories, articles and artifacts at Chain O' Lakes as compared with parks where a full-time presence exists.
- Resource manager. Full-time interpreters frequently work closely with resource management planning and implementation. They are also qualified to explain management actions to visitors and community groups.
- Assessment and improvement. With each new seasonal interpreter, the process of "reinventing the wheel" occurs as the interpreter learns the park, the audience and what programs are successful. A full-time interpreter can continually build, expand, adapt and improve a comprehensive program.
- Public Relations. The public relations benefit of a full-time interpreter is great. They become part of the local community, and the face and voice of the park.

# IX. Programs

The current seasonal interpreter has done a wonderful job of instituting creative, successful programs. The themed weekends and day camp programs have been well-received.

The following program recommendations are contingent on other recommendations being implemented. The expansion of the interpreter position to full-time is required. At the current 90-days, the program load and audience diversity can't increase. Additionally, the schoolhouse and nature center annex recommendations will create programming options not currently in place.

## A. Audiences

### 1. Schools.

The recommended changes to the schoolhouse will alter how programs are marketed. Designating the schoolhouse as a schoolhouse will create a greater draw for school groups. Curriculum-based Indiana history programs using the schoolhouse, self-guided trail and wigwam will be attractive to area schools. This can be offered as a less expensive alternative to more distant field trips or end-of-year school events.



## *2. Home Schools.*

Home schooled students are frequently are part of a larger regional network. Locating and marketing to these larger groups has been successful at other parks. Home schooled students don't have the bus transportation and budget allocation constraints that many public schools are facing.

## *3. Pre-School Aged Children.*

Both established pre-schools and parent groups can be targeted for programs. These programs could take the form of a single field trip, or as a weekly Nature Program.

## *4. Scouts.*

Scout troops are more active during the school year. Programs geared to badge requirements and service projects can be marketed to area councils.

## **B. Roving Interpretation and Walk-in Programs**

Having the Nature Center Annex will create more opportunities for roving interpretation at the beach and walk-in programs on the grounds. Activities and crafts can be set up outside of the building for informal programs.

# **X. Partners**

## *A. Schoolhouse Friends Group.*

Establishing a Friends group would create financial support and volunteers for the schoolhouse. Fundraising for repairs and restoration would be a function of the group. Volunteers at the building would extend its limited open hours. Volunteers in period costume could conduct programs.

## *B. Merry Lea Environmental Education Center.*

The center is a part of Goshen College, and is located close to the park. In addition to working with schools, the center is a training ground for undergraduate and graduate students in natural resources and interpretation. This body of students could be tapped for interns both in interpretation and for developing a natural resource management plan.

## *C. Brothers of the Wind.*

This group is centered in South Bend, Indiana and does reenactments of pre-1840s Great Lakes history. They could be approached to participate in an historical themed event at the park.

**Phase I with time estimate and reference identifiers**

<b>Years to Complete</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Project</b>					
Create full-time staff position (VIII.)					
Schoolhouse National Registry application (I.A.1.)					
Schoolhouse interior repairs (I.A.2.)					
Create Schoolhouse “Friends” group (X.A.)					
Restore/repair schoolhouse roll-down maps (I.B.3.)					
Install hand pump at schoolhouse (I.C.4.)					
Exterior interpretive panel at schoolhouse (I.C.2)					
Nature Center Annex interior prep (III.B.)					
Move “modern” exhibits from schoolhouse to annex (I.B.1.)					
Restore schoolhouse classroom to 1915 (I.B.2.)					
Schoolhouse program development and promotion (I.E.)					
Self-guided trail at schoolhouse on 1915 theme (I.D.)					
Interp. panels (lakes, iron bridge, Henslow’s sparrow) (VII.)					
New loop trails from Beach and Campgrounds (VI.)					
Dev. intern prog. with Merry Lea Env. Ctr. (X.B.)					

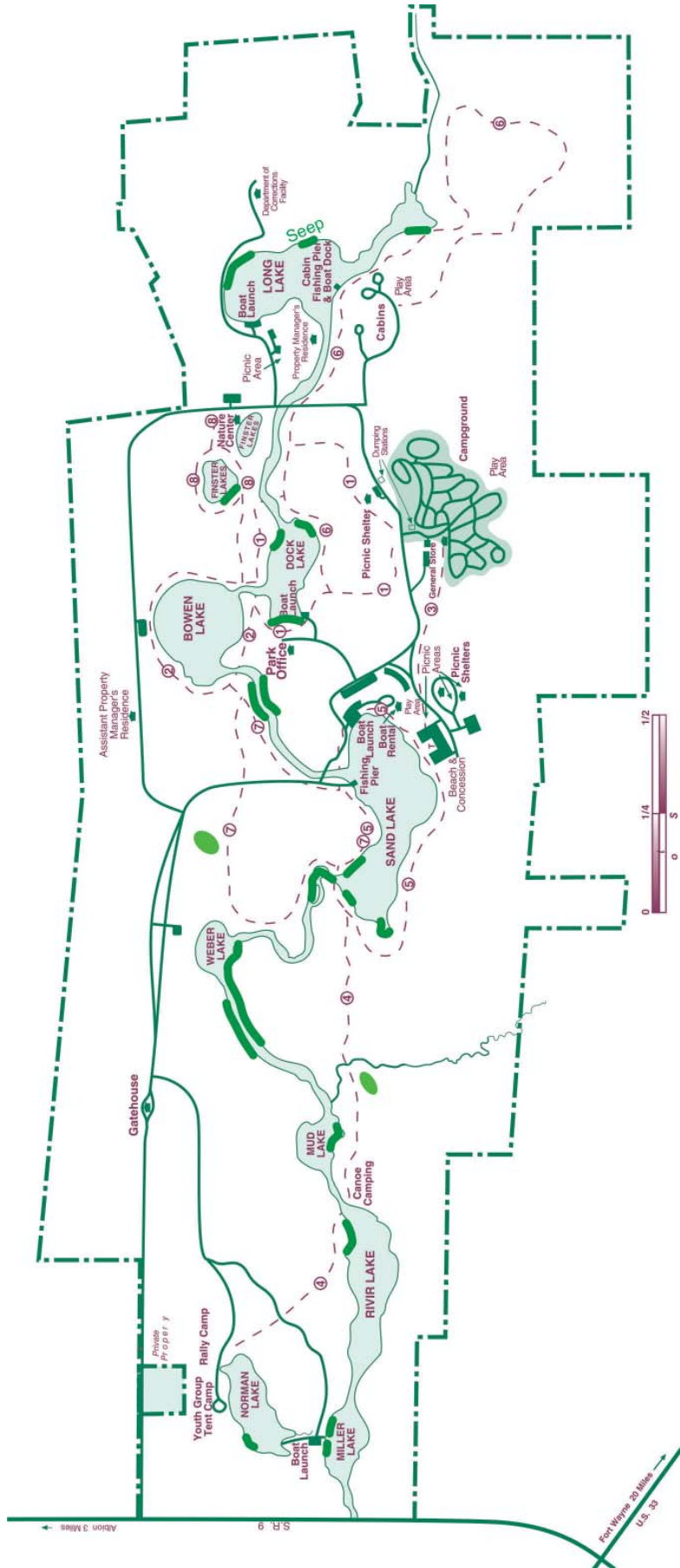
**Phase II with time estimate**

<b>Years to Complete</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Project</b>					
Schoolhouse outdoor gathering area (I.C.3.)					
Exterior tour of the building (sign or brochure) (I.C.1.)					
Wigwam construction (II.)					
New exhibits for Nature Center Annex (III.C.)					
Outdoor program area for Nature Center Annex (III.D.)					
New Nature Center (multi-year project) (IV.)					
Canoe Trails (markers and guide) (V.)					
Partnership with Great Lakes history reenactment (X.C.)					

### Summary of Recommendations

Area	Phase I	Phase II
<i>Schoolhouse</i>	Place building on National Registry	
	Implement interior repairs	
	Create “Friends” group	
	Restore and repair roll-down maps	
	Replace water pump	
	Exterior interpretive panel	
	Restore classroom to 1915	
	Program development and promotion	
	Self-guided trail on 1915 theme	
		Tour of building exterior
<i>NC Annex</i>	Interior building rehab and prep	
	Move modern exhibits to NC annex from schoolhouse	
		Develop program area
		Design and build new exhibits
<i>Panels</i>	Lakes, iron bridge, Henslow’s sparrow	
<i>Trails</i>	Loop trails from Beach and Campgrounds	
		Canoe trail markers and guides
<i>Staff</i>	Creation of full-time staff position	
		Intern Partnership with Merry Lea
<i>Wigwam</i>		Construction of wigwam
<i>New Nature Ctr.</i>		Design and dev. of new nature ctr.

Appendix A: wetlands highlighted in green





Appendix B: Trees identified during site visit (October 10-11, 2010)

Apple  
Ash, white  
Aspen, big-tooth  
Basswood  
Beech, American  
Cherry, black  
Cottonwood  
Cypress, bald  
Elm, slippery  
Ironwood  
Hackberry  
Hawthorn, sp?  
Hickory, pignut  
Hickory, shagbark  
Hop hornbeam  
Locust, black  
Maple, silver  
Maple, sugar  
Oak, black  
Oak, swamp white  
Oak, white  
Paw paw  
Pine, white  
Red bud  
Sassafras  
Slippery Elm  
Sumac, staghorn  
Sycamore  
Tulip poplar  
Walnut, black  
Willow, black

# Appendix C: Herbaceous Plants of Chain O' Lakes, by Tony Fleming

## HERBACEOUS FLORA (NATIVE) OF CHAIN-O-LAKES STATE PARK

Common Name *~similar species	Botanical Name	Family	Bot Family	Bloom Time	Habitat	Distribution	Typical Comments/Specific Location Status in Indiana
Agrimony, southern	<i>Agrimonia parviflora</i>	Rose	Rosaceae	Aug-Sept	FT, TS, S	S	Near SE corner of Sand Lake along trail
Agrimony, tall	<i>Agrimonia gryposepala</i>	Rose	Rosaceae	July-Aug	FT, TS, S	C	E side Bowen L, SW corner Sand L
Agrimony, beaked	<i>Agrimonia rostellata</i>	Rose	Rosaceae	July-Aug	U	C	Wooded gravelly ridges, e.g., esker
Agrimony, downy	<i>Agrimonia pubescens</i>	Rose	Rosaceae	July-Aug	U	S	Dry uplands-edges, openings, open woods
Alumroot, common	<i>Heuchera americana</i>	Saxifrage	Saxifragaceae	May-June	U, S	S	esker along Dock and Bowen Lakes, Sand L trail
Anemone, false rue	<i>Enemion biternatum</i>	Buttercup	Ranunculaceae	April-May	S	C	rich slopes
Anemone, rue	<i>Thalictrum thalictroides</i>	Buttercup	Ranunculaceae	April	S	C	rich slopes
Angelica, purple stemmed	<i>Angelica atropurpurea</i>	Carrot	Apiaceae	June	U	S	Along roadsides E of rally campground
Amiseroot	<i>Osmorhiza longistylis</i>	Carrot	Apiaceae	May	U	S	Woods
Arrow arum	<i>Peltandra virginica</i>	Arum	Araceae	July	W, A	C	widespread along swampy lake borders
Arrowhead, common	<i>Sagittaria latifolia</i>	Water-plaintain	Alismataceae	August	W	C	Many lake borders, eg Dock L boat ramp
Aster, arrow leafed	<i>Aster urophyllus (sagittifolius)</i>	Aster	Asteraceae	Sept-Oct	U, TS	C	Bowen L pkg lot trail, S side Sand L
Aster, azure	<i>Aster oolentangiensis</i>	Aster	Asteraceae	Sept-Oct	U, TS	S	only along Bowen L pkg lot trail, S side Sand L
Aster, bushy	<i>Aster dumosus</i>	Aster	Asteraceae	Sept-Oct	FT	S	near marl beach E end Bowen L, S side Sand L bet swamp and 200E
Aster, calico	<i>Aster lateriflorus</i>	Aster	Asteraceae	Sept-Oct	U	C	widespread in woods on esker
Aster, heart-leafed	<i>Aster cordifolius</i>	Aster	Asteraceae	Aug-Oct	U	C	on esker next to Bowen L
Aster, heath	<i>Aster pilosus</i>	Aster	Asteraceae	Sept-Oct	U	C	widespread on roadsides, edges, openings
Aster, large leafed	<i>Aster macrophyllus</i>	Aster	Asteraceae	Aug-Oct	U	C	summit of esker, many places
Aster, Lowrie's	<i>Aster lowrieanus</i>	Aster	Asteraceae	Sept-Oct	U, FT	C	good colony 200' W of Bowen L inlet bridge
Aster, New England	<i>Aster novae-angliae</i>	Aster	Asteraceae	Sept-Oct	U	C	old fields, edges, many near gate and in NC meadow
Asree, panicked	<i>Aster lanceolatus</i>	Aster	Asteraceae	Sept-Oct	U, TS, FT	C	most common on floodplain terraces near lakes
Aster, rush(?)	<i>Aster borealis (A. junceiformis)</i>	Aster	Asteraceae	Sept-Oct	W	S	lake borders, eg, W end Bowen L
Aster, Schreb's (?)	<i>Aster Schreberi</i>	Aster	Asteraceae	Aug-Oct	U	R	several places on summit of esker
Aster, Short's	<i>Aster shortii</i>	Aster	Asteraceae	Sept-Oct	FT	C	lake borders, e.g., along trail W end Sand L E
Aster, smooth	<i>Aster laevis</i>	Aster	Asteraceae	Sept-Oct	U	C	Open uplands, e.g., near NC pkg lot
Aster, swamp	<i>Aster puniceus</i>	Aster	Asteraceae	Sept-Oct	W, FT	S	Lake borders
Aster, wavy leafed	<i>Aster undulatus</i>	Aster	Asteraceae	Sept-Oct	FT, U	S	SW corner Sand L (near gentians), esker E of Bowen inlet
Aster, willow	<i>Aster praeltus</i>	Aster	Asteraceae	Sept-Oct	W	S	wet borders of Bowen L, e.g., 150' E of pkg lot trail
Avens, white	<i>Geum canadense</i>	Rose	Rosaceae	June-July	FT, U	C	woods
Baneberry, red	<i>Actaea rubra</i>	Buttercup	Ranunculaceae	May	W	R	low wet places R
Baneberry, white	<i>Actaea pachypoda</i>	Buttercup	Ranunculaceae	May	S, U, T, FT	C	Moist woods, many places
Beardtongue, hairy?	<i>Penstemon hirsutus</i>	Figwort	Scrophulariaceae	July	FT	R	NE side Bowen L near huge Cottonwood
Bedstraw, bog	<i>Galium labradoricum</i>	Madder	Rubiaceae	June	FT, TS	S	Scattered borders of Bowen Lake
Bedstraw, cleavers	<i>Galium aparine</i>	Madder	Rubiaceae	June	TS, FT	C	Widespread in moist woods and floodplains
Bedstraw, fragrant	<i>Galium triflorum</i>	Madder	Rubiaceae	June	FT, TS	S	Scattered low slopes and lake borders
Bedstraw, hairy	<i>Galium pilosum</i>	Madder	Rubiaceae	June	U	S	Toeslope along N side Sand L
Bedstraw, northern	<i>Galium boreale</i>	Madder	Rubiaceae	June	FT	C	Many lake borders
Bedstraw, rough	<i>Galium asprellum</i>	Madder	Rubiaceae	June	FT, TS	S	Scattered swamps and borders, e.g., above Long Lake on trail 6
Bedstraw, shining	<i>Galium concinnum</i>	Madder	Rubiaceae	June-July	U	C	Dry sandy ridges
Bindweed, hedge	<i>Calystegia sepium</i>	Morning Glory	Convolvulaceae	June-July	FT, U	S	W end Bowen Lake, near canoe camp pkg
Bittercress, Pennsylvania	<i>Cardamine pennsylvanica</i>	Mustard	Cruciferae	April-May	FT	S	Trail 6 between Long Lake and road
Black eyed susan	<i>Rudebeckia hirta</i>	Aster	Asteraceae	July	S	C	N side Bowen Lake
Bloodroot	<i>Sanguinaria canadensis</i>	Poppy	Papaveraceae	March-May	U	C	Cosmopolitan-tends toward sandy ridges
Blue Eyed Grass, stout(?)	<i>Sisyrinchium angustifolium</i>	Iris	Iridaceae	May-June	T	S	Along trail N side Bowen Lake, NE corner Norman L
Blue-Eyed Mary	<i>Collinsia verna</i>	Figwort	Scrophulariaceae	April-May	F	S	best site: floodplain in big ravine beyond trail 6, spotty in other ravines
Bluets*	<i>Houstonia caerulea</i>	Madder	Rubiaceae	May	S	R	N side Weber L?
Boneset, common	<i>Eupatorium perfoliatum</i>	Aster	Asteraceae	August	W, S	S	Mostly in lake borders, other examples on road near NC, Sand L swamp
Bugleweed, American	<i>Lycopus americanus</i>	Mint	Lamiaceae	Aug-Sept	W	S	Lake border swamps, observed in NE edge Norman L, S side Sand L
Bur-Marigold	<i>Bidens cernua</i>	Aster	Asteraceae	September	W, FT	C	Many lake borders and shores
Bur-Reed, American	<i>Sparganium americanum</i>	Bur-Reed	Sparganaceae	June	W	S	Lake borders, NE end Norman Lake
Buttercup, bristly	<i>Ranunculus pensylvanicus</i>	Buttercup	Ranunculaceae	May	FT, W	S	Lake borders
Buttercup, hooked	<i>Ranunculus recurvatus</i>	Buttercup	Ranunculaceae	May-June	S	S	
Buttercup, kidney-leaf	<i>Ranunculus abortivus</i>	Buttercup	Ranunculaceae	May	U	C	
Buttercup, swamp	<i>Ranunculus hispidus</i>	Buttercup	Ranunculaceae	May	F	C	Moist toeslopes, floodplains: Sand-Weber L., huge colonies above Long L along trail 6
Butterfly weed	<i>Asclepias tuberosa</i>	Milkweed	Asclepiadaceae	June-July	U	C	roadsides, meadows
Calla, wild (water arum)	<i>Calla palustris</i>	Arum	Araceae	July	A	R	Finster Lakes E
Campion, starry	<i>Silene stellata</i>	Pink	Carophyllaceae	July	U	C	Abundant on esker summit and sides
Canada Mayflower	<i>Maianthemum canadense</i>	Lily	Liliaceae	May	W, FT	C	Fairly typical along lake borders
Cardinal flower	<i>Lobelia cardinalis</i>	Bellflower	Campanulaceae	August	W, FT	C	swamps, borders, most lakes and streambanks; purple specimen by marl beach on Bowen
Carrionflower, common	<i>Smilax lasioneura</i>	Greenbrier	Smilacaceae	June	FT, TS	C	Moist woods
Chickweed, field	<i>Cerastium arvense</i>	Pink	Caryophyllaceae	April May	U	S	open areas on sand and gravel
Chickweed, long-leafed	<i>Stellaria longifolia</i>	Pink	Caryophyllaceae	May	W, S	S	W end Sand L, Trail 6 sugarbush
Cinquefoil, old field	<i>Potentilla simplex</i>	Rose	Rosaceae	June	U, TS, FT	C	
Cinquefoil, rough	<i>Potentilla norvegica</i>	Rose	Rosaceae	June-Oct	U	S	esker along Bowen Lake
Clearweed	<i>Pilea pumila</i>	Nettle	Urticaceae	July-Sept	TS, FT	C	moist woods
Clearweed, bog	<i>Pilea fontana</i>	Nettle	Urticaceae	July-Sept	FT, W	C	Lake broders, swamps, springs
Cleavers	<i>Galium aparine</i>	Madder	Rubiaceae	June	FT, TS, S	C	Moist woods, streambanks, lake borders
Cohosh, blue*	<i>Caulophyllum thalictroides</i>	Barberry	Barberidaceae	April-May	FT	S	N side Sand L
Columbine, wild	<i>Aquilegia canadensis</i>	Buttercup	Ranunculaceae	May	F, T	S	Near footbridges at Sand and Dock Lakes
Columbo, American	<i>Frasera carolinensis</i>	Gentian	Gentianaceae	June	S	S	Large colony in oak woods on high slope along N side of Rivir Lake, W of trail 4
Coneflower, cut-leaved	<i>Rudebeckia lacinata</i>	Aster	Asteraceae	August	S, FT	C	many scattered around Sand Lake and vicinity, a few elsewhere
Coneflower, gray-headed	<i>Ratibida pinnata</i>	Aster	Asteraceae	August	U	S	roadside across from NC 50' below pkg lot
Coneflower, purple	<i>Echinacea purpurea</i>	Aster	Asteraceae	July	U	S	roadsides, flower gardens, probably introduced
Coneflower, three-lobed (thin leaved)	<i>Rudebeckia triloba</i>	Aster	Asteraceae	July-August	S, FT	S	Lake borders; N side Bowen near susans; NE corner Norman L

Coneflower, sweet	Rudebeckia subtomentosa	Aster	Asteraceae	July-August	U	R	Dry open or lightly wooded roadsides
Coreopsis, greater(?)	Coreopsis major	Aster	Asteraceae	August	U	S	Roadside near summit of esker across from gvl pit-may be tall coreopsis
Coreopsis, tall	Coreopsis tripteris	Aster	Asteraceae	August	U	S	Road cut at DOC road
Cress, purple	Cardamine douglassii	Mustard	Cruciferae	May	U	S	N side Weber Lake
Cress, White spring	Cardamine bulbosa	Mustard	Cruciferae	May	W	C	Lake borders, streams, swamps
Cucumber, bur	Sicyos angulatus	Gourd	Cucurbitaceae	August on	TS, FT	C	Adjacent to lake borders and swamps
Cucumber, wild	Echinocystis lobata	Gourd	Cucurbitaceae	August	TS, FT	C	Adjacent to lake borders and swamps
Ditch Stonecrop	Paenthorum seoides	Ditch-Stonecrop	Pentoraceae	July-August	W	S	Swamps; E end Bowen L
Dock, Water	Rumex orbiculatus	Smartweed	Polygonaceae	June	W	S	Lake border swamps; N side Rivir L opposite Canoe camp
Dock, prairie	Silphium terebinthinaceum	Aster	Asteraceae	July-Aug	U	P	Planted in campground prairie
Dogbane, spreading	Apocynum androsaemifolium	Dogbane	Apocynaceae	June	U	S	Scattered roadsides, e.g., above canoe camp pkg
Dutchman's breeches	Dicentra cucullaria	Fumitory	Fumariaceae	April-May	S	C	Rich till slopes: Weber-Sand-Mud Lakes, big woods
Evening primrose, common	Oenothera biennis	Evening Primrose	Onagraceae	late July on	U	S	Roadsides, open areas e.g., above canoe camp pkg
False hellebore	Melanthium woodii	Lily	Liliaceae	May-June	T	R	park is slightly north of natural range; base of Weber L woods
Fern, Cinnamon	Osmunda cinnamomea	Flowering Fern	Osmundaceae	na	W	S	Seepage swamps
Fern, New York	Thelypteris noveboracensis	Polypody	Polypodiaceae	na	TS	S	Toeslopes adjacent to seepage swamps
Fern Christmas	Polystichum acrostichoides	Polypody	Polypodiaceae	na	S	C	Rich shady slopes, usually N-facing
Fern, Maidenhair	Adiantum pedatum	Polypody	Polypodiaceae	na	TS, W	S	Seepage swamps and adjacent areas, channels
Fern, Rattlesnake	Botrychium virginianum	Succulent Ferns	Ophioglossaceae	na	U	C	Widespread-the most common fern in the park
Fern, Royal	Osmunda regalis	Flowering Ferns	Osmundaceae	na	W	C	Hummocks in seepage swamps
Fern, Sensitive	Onoclea sensibilis	Polypody	Polypodiaceae	na	W, FT	C	Many lake borders and adjacent terraces
Fire pink	Silene virginica	Pink	Carophyllaceae	June	S	S	N and E sides Bowen Lake, esker summit near road
Fleabane, daisy	Erigeron annuus	Aster	Asteraceae	June	S, U	C	Open woods, trails, edges, roadsides
Fleabane, narrow-leaved daisy	Erigeron strigosus	Aster	Asteraceae	June	S, U	C	Open woods, trails, edges, roadsides
Fleabane, Philadelphia	Erigeron philadelphicus	Aster	Asteraceae	May on	S, U	C	Open woods, trails, edges, roadsides
Flowering spurge	Euphorbia corollata	Spurge	Euphorbia	August	S	S	Road cut at DOC road
Garlic, wild	Allium canadense	Lily	Liliaceae	June	S, FT	S	scattered places; Sand L
Gentian, bottle (closed)	Gentiana andrewsii	Gentian	Gentianaceae	September	FT	R	One site: S side Sand Lake
Geranium, wild	Geranium maculata	Geranium	Geraniaceae	May	U	A	Widespread on various uplands
Germander, American (wood age)	Teucrium canadense	Mint	Lamiaceae	July	FT, W	C	Lake borders; Bowen, Sand
Ginger, wild	Asarum canadense	Birthwort	Aristolochiaceae	May	S	C	moist, rich, wooded slopes, ravines
Ginseng, American	Panax quinquefolius	Ginseng	Araliaceae	May-July	U, TS	R	along trail 1 150' E of ladyslippers, reported by a former park naturalist in woods E of Sand Lake
Golden Alexanders, heart-leaved	Zizia aptera	Carrot	Apiaceae	June	S	R	rich calcareous woods
Goldenrod, blue-stemmed	Solidago caesia	Aster	Asteraceae	Sept-Oct	U	C	various habitats, mostly open woods
Goldenrod, bog	Solidago uliginosa	Aster	Asteraceae	Sept-Oct	W, FT	S	lake border swamps
Goldenrod, Canada (Tall)	Solidago canadensis	Aster	Asteraceae	Aug-Oct	U	C	various habitats, mostly open or lightly wooded
Goldenrod, early	Solidago juncea	Aster	Asteraceae	July-Sept	U	C	roadsides, open woods, edges, meadows
Goldenrod, elm-leaved	Solidago ulmifolia	Aster	Asteraceae	Sept-Oct	U	S	dry gravelly/sandy uplandas, summit of esker
Goldenrod, late	Solidago gigantea	Aster	Asteraceae	Sept-Oct	FT, TS	C	moist woods
Goldenrod, old field	Solidago nemoralis	Aster	Asteraceae	Aug-Oct	U	C	dry upland meadows and roadsides
Goldenrod, rough	Solidago rugosa	Aster	Asteraceae	Aug-Oct	FT, TS	S	moist woods
Goldenrod, showy	Solidago speciosa	Aster	Asteraceae	Sept-Oct	U	S	woods along summit of esker
Goldenrod, swamp	Solidago patula	Aster	Asteraceae	Sept-Oct	W	S	lake borders
Goldenrod, zig-zag	Solidago flexicaulis	Aster	Asteraceae	Sept-Oct	U	C	vaious habitats, usually in woods
Goldenseal	Hydrastis canadensis	Buttercup	Ranunculaceae	April-May	FT, T, U	S	rich moist places, eg Weber Lake Woods, Dock L, Sand L W
Green dragon	Arisaema dracontium	Arum	Araceae	May	F, W	S	Wet woods, swampy shores, e.g., trail 7 near Weber L
Greenbrier, bristly	Smilax hispida	Greenbrier	Smilacaceae	June	U, S	C	on esker, various places
Ground Nut	Apios americana	Pea	Fabaceae	August	FT	S	Lake borders, e.g., Little Finster along rd
Harbinger of spring	Erigenia bulbosa	Parsley	Umbelliferae	March-April	S	S	Rich woods, e.g., N side Weber L, big woods
Hawkweed, orange	Hieraium aurantiacum	Aster	Asteraceae	May	U	R	sandy upland E of Fenster L. a
Hawkweed, rough	Hieraium scabrum	Aster	Asteraceae	May	U	R	mature oak woods-esker; N side Bowen Lake
Hemlock, water	Cicuta maculata	Carrot	Apiaceae	June-July	W	S	Lake borders, e.g., N side Sand L
Hepatica-round lobed	Hepatica americana	Buttercup	Ranunculaceae	March-April	U	S	Dry-mesic sandy soil on eskers and terraces
Hepatica-sharp lobed	Hepatica acutiloba	Buttercup	Ranunculaceae	March-April	U	C	Dry-mesic sandy soil on eskers and terraces
Hog peanut	Amphicarpaea bracteata	Pea	Fabaceae	August	FT, TS	C	Moist woods and lake borders
Honewort	Cryptotaenia canadensis	Carrot	Apiaceae	June	T, FT	S	NW corner Sand L trail, near hollow
Horse balm, rich weed	Collinsonia canadensis	Mint	Lamiaceae	August	U	S	Many colonies in woods between Dock L and Glacier Ridge shelter
Horse gentian, early	Triosteum aurantiacium	Honeysuckle	Caprifoliaceae	May	FT, U	S	Sandy ridges, lake borders eg, N side Sand Lake
Horse gentian, feverwort	Triosteum perfoliatum	Honeysuckle	Caprifoliaceae	May	U	C	Sandy ridges, eg summit above SE corner Finster L
Horse nettle	Solanum carolinense	Nightshade	Solanaceae	June-July	U	S	Disturbed areas, old fields
Indian cucumber root	Medeola virginiana	Lily	Liliaceae	June	FT, TS	R	Known only from NW corner of Sand L
Indian hemp	Apocynum cannabinum	Dogbane	Apocynaceae	June	U	S	Scattered roadsides, open places, e.g. next to Little Finster L
Indian tobacco	Lobelia inflata	Bellflower	Campanulaceae	July-Aug	FT	S	Scattered moist woods and lake borders; e.g., W end Bowen Lake
Indian-Plantain, pale	Amoglossum atriplicifolium	Aster	Asteraceae	August	FT	S	Sand Lake bet beach and boathouse
Iris, blue flag	Iris virginica	Iris	Iridaceae	May on	W	C	Many lake shores
Ironweed, tall	Vernonia gigantea	Aster	Asteraceae	August	U, S, FT	C	Many habitats, chiefly open
Jack in the Pulpit	Arisaema triphyllum	Arum	Araceae	May-June	T, S, U	C	Rich moist woods
Jacobs Ladder	Polemonium reptans	Phlox	Polemoniaceae	May	FT, T, S	S	Rich moist woods and terraces
Jewelweed, orange	Impatiens capensis	Touch-me-not	Balsaminaceae	July on	FT, TS	S	some moist terraces and lake borders; aka spotted TMN
Jewelweed, yellow	Impatiens pallida	Touch-me-not	Balsaminaceae	July on	FT, TS	C	Abundant on moist terraces and lake borders; aka Pale TMN
Joe-Pye Weed, green	Eupatorium purpureum	Aster	Asteraceae	late August	TS, S, U	C	Many habitats, mostly in upland woods
Joe-Pye Weed, hollow	Eupatorium fistulosum	Aster	Asteraceae	August	TS, FT	S	
Joe-Pye Weed, spotted	Eupatorium maculatum	Aster	Asteraceae	August	FT, W	C	Sand L, dead lake
Knotweed, Virginia	Polygonum virginianum	Buckwheat	Polygonaceae	Aug-Oct	U	A	Widespread, most habitats except wetlands
Ladyslipper, yellow	Cypripedium calceolus	Orchid	Orchidaceae	May	S	R	1 site: S facing sandy slope-Dock Lake w

Lettuce, prickly	Lactuca seriola	Aster	Asteraceae	Aug-Sept	U	C	Open woods, trailsides	Alien?
Lettuce, tall blue (?)	Lactuca biennis	Aster	Asteraceae	Sept-Oct	U	S	Open woods, eg Bowen L Pkg lot trail	
Lettuce, tall white	Prenanthes altissima	Aster	Asteraceae	September	U	C	esker above SW corner of Bowen L	
Licorice, wild	Galium circaezans	Madder	Rubiaceae	June	U	C	widespread esp slightly moist woods	
Lions Foot	Prenanthes alba	Aster	Asteraceae	August	U, S	C	many variations in leaves on Shady Ridge	
Lizard's tail, Water dragon	Saururus cernuus	Lizard's Tail	Saururaceae	July	W, A	C	swampy lake borders	
Lobelia, Great Blue	Lobelia siphilitica	Bellflower	Campanulaceae	August	FT, TS	C	moist to wet woods, lake borders, streambanks	
Loosestrife, fringed	Lysimachia ciliata	Primrose	Primulaceae	July	W	C	Widespread in mucky lake borders	
Loosestrife, swamp	Decodon verticillata	Lythraceae	Lythraceae	July	W	S	Fenster and Little Fenster Lakes	
Lopseed	Phryma leptostachya	Lopseed	Phrymaceae	July	U	C	top of esker and other uplands	
Marsh marigold	Caltha palustris	Buttercup	Ranunculaceae	April-May	FT	S	Along small stream next to trail 6 above twin ravines	
Mayapple	Podophyllum peltatum	Barberry	Barberidaceae	May	T, S, U	A	Widespread in woods	
Meadowrue, early	Thalictrum dioicum	Buttercup	Ranunculaceae	May	TS	S	Same places as blue cohosh	
Meadowrue, purple	Thalictrum dasycarpum	Buttercup	Ranunculaceae	June-July	FT	S	Lake borders, eg Sand Lake canoe mooring	
Meadowrue, skunk	Thalictrum revolutum	Buttercup	Ranunculaceae	June-July	FT	C	Many lake borders, eg Bowen, DOC swamp	
Meadowrue, tall (?)	Thalictrum polygamum	Buttercup	Ranunculaceae	June-July	FT, W	S	Lake borders, large colonies E end Dock L T, not rep'd from NE IN	
Mermaid, false	Floerkea proserpinacoides	Meadow foam	Limnathaceae	April-May	FT, TS	C	Moist woods, esp abundant S of Long Lake	
Michigan Lily	Lilium michiganense	Lily	Liliaceae	June-July	FT, U	S	terraces and channels, esp around Dock&Bowen Lakes	
Milkweed, common	Asclepias syriaca	Milkweed	Asclepiadaceae	June-July	U	C	roadsides, old fields, edges	
Milkweed, oval	Asclepias ovalifolia	Milkweed	Asclepiadaceae	June-July	U	S	nice specimens on summit of esker above Dock L	
Milkweed, poke	Asclepias exaltata	Milkweed	Asclepiadaceae	June-July	S	S	moist slopes and toeslopes, summit of esker W of Bowen L	
Milkweed, swamp	Asclepias incarnata	Milkweed	Asclepiadaceae	July	W	C	nice specimens S side Sand Lake	
Mint, field	Mentha arvensis	Mint	Lamiaceae	August	FT, W	C	lake borders, eg Sand L	
Monkey flower, Allegheny	Mimulus ringens	Figwort	Scrophulariaceae	July-Aug	W	S	Swamps, S side Sand Lake, E side Bowen L	
Monkey flower, winged	Mimulus alatus	Figwort	Scrophulariaceae	July-Aug	W	S	Known only from along small stream near SE corner of Mud L	
Nettle, false	Boehmeria cylindrica	Nettle	Urticaceae	August	W, TS, FT	A	Wet/moist woods near lakes	
Nettle, stinging	Laportea dioica	Nettle	Urticaceae	August	W, TS	C	Moist-mesic places	Alien
Nettle, stinging	Laportea gracilis	Nettle	Urticaceae	August	W, TS	C	Moist woods and fields	
Nettle, wood	Laportea canadensis	Nettle	Urticaceae	August	W, FT, TS	A	Wet/moist woods, swamps	
Nightshade, eastern black	Solanum dulcamara	Nightshade	Solanaceae	May-Sept	U	S	open areas, roadsides, open woods	
Nightshade, enchanters	Circaea lutetiana	Evening Primrose	Onagraceae	June-July	U	C	Rich woods, many places	
Parsnip, meadow	Thaspium trifoliatum	Carrot	Apiaceae	June	U	S	Trail 6 E of Norman L and above big fen	
Phlox, blue	Phlox divaricata	Phlox	Polymoniaceae	May	S	A	Rich slopes	
Pellitory, Pennsylvania	Parietaria Pensylvanica	Nettle	Urticaceae	July-Aug	U, TS	S	Rich moist woods	
Pickereel Weed	Pontederia cordata	Water hyacinth	Pontederiaceae	July	A	C	Sand L woods, Finster Lakes Not reported from NE Indiana	
Pimpernel, yellow	Taenidia intererrima	Carrot	Apiaceae	June	TS	S	Road cut at DOC road	
Poppy, wood	Stylophorum diphyllum	Poppy	Papaveraceae	May	S	S	rich slopes: S side Mud Lake; bluff at mouth of twin ravines on trail 6; big woods ravine;	
big ravine beyond trail 6								
Prickly pear, eastern	Opuntia humifusa	Cactus	Cactaceae	June-early July	U	R	old gravel pit above Sand L	
Pussytoes, Large plaitain leaved	Antennaria plantaginifolia	Aster	Asteraceae	June	U, S	S	Trail 6 E of Norman L, uplands around Finster L	
Puttyroot	Aplectrum hyemale	Orchid	Orchidaceae	June	U	R	Big woods	
Ragweed, common	Ambrosia artemisiifolia	Aster	Asteraceae	August	U	C	Roadsides, old fields, disturbed areas	
Ragweed, giant	Ambrosia trifida	Aster	Asteraceae	August	U	C	Roadsides, old fields, disturbed areas	
Ragwort, round-leaf golden*	Packera obovata	Aster	Asteraceae	May	TS, U	C	Various wooded habitats	
Ragwort, heart-leaf golden*	Packera obovata	Aster	Asteraceae	May	FT, TS	C	Moist woods and terraces, e.g., Sand L inlet channel	
Rockcress, smooth	Arabis laevigata	Mustard	Brassicaceae	June	U	S	Moist woods and toeslopes	
Rocket, purple	Iodanthus pinnatifidus	Mustard	Brassicaceae	June	TS, FT	S	Moist woods, roadsides; observed on old lane N of N road	
Rosinweed, whorled near summit of esker	Silphium trifoliatum	Aster	Asteraceae	July-Aug	S	S	W side of old CR 100E N of canoe camp, Sand L between beach and boathouse, roadside	
Sicklepod	Arabis canadensis	Mustard	Brassicaceae	June	U	S	esker above Bowen Lake	
Skullcap, mad-dog	Scutellaria lateriflora	Mint	Lamiaceae	August-Sept	W, FT	S	Muddy lake borders, e.g., SE corner Bowen L, Sand L swamp	
Skunk cabbage	Symplocarpus foetidus	Arum	Araceae	March	W	C	Seepage swamps	
Smartweed, water	Polygonum amphibium	Smartweed	Polygonum	August	FT, W	S	Lake borders	
Smartweed, water	Polygonum punctatum	Smartweed	Polygonum	August	FT, W	C	Lake borders	
Snakeroot, black, Canada	Sanicula canadensis	Carrot	Apiaceae	June on	S, U	C	Tends toward low moist woods	
Snakeroot, black, clustered	Sanicula oederata	Carrot	Apiaceae	June on	S, U	C	Tends towards drier uplands	
Snakeroot, black, large fruited	Sanicula trifoliata	Carrot	Apiaceae	July on	S, U	C		
Snakeroot, black, Maryland	Sanicula marilandica	Carrot	Apiaceae	June on	S, U	C	Many habitats	
Snakeroot, white	Eupatorium rugosum	Aster	Asteraceae	August	U	C	Sand L outlet bridge, near NC and Finster L	
Solomon's Plume, feathery	Maianthemum racemosum	Lily	Liliaceae	May	U	C	Widespread in rich woods	
Solomon's Plume, starry	Maianthemum stellatum	Lily	Liliaceae	May	U, W	C	Widespread in rich wet woods, swamps, lake borders	
Solomon's Seal, hairy	Polygonatum pubescens	Lily	Liliaceae	May	U	C	lower surface hairy on veins (10x)	
Solomon's Seal, smooth	Polygonatum biflorum	Lily	Liliaceae	May	U	C	Widespread in rich woods	
Spiderwort, Virginia	Tradescantia virginiana	Spiderwort	Commelinaceae	May-June	TS	R	moist calcareous woods	
Spring beauty	Claytonia virginica	Purslane	Portulacaceae	April-May	U	C	Throughout	
Squirrel corn	Dicentra canadensis	Fumitory	Fumariaceae	April-May	S	C	Rich till slopes: Weber-Sand-Mud Lakes	
St Johnswort, northern	Hypericum boreale	Mangosteen	Clusiaceae	June on	FT	S	sandy moist terraces	
St Johnswort, weak	Hypericum mutilum	Mangosteen	Clusiaceae	June on	S, FT	S	sandy moist woods and lake borders	
Strawberry, wild	Fragaria virginiana	Rose	Rosaceae	May	U	C	edges, old fields, mowed trails	
Sunflower, false	Heliopsis helianthoides	Aster	Asteraceae	July-Aug	S, FT	S	moist roadsides and openings	
Sunflower, oblong	Helianthus hirsutus	Aster	Asteraceae	July on	S, U	S	roadsides, woods	
Sunflower, pale leaved	Helianthus strumosus	Aster	Asteraceae	July on	S, U	C	roadsides, woods	
Sunflower, saw toothed	Helianthus grosseratus	Aster	Asteraceae	July on	S, U	C	roadsides, woods-good examples along trail B below Shady Ridge	
Sunflower, small-headed woodland (?)	Helianthus microcephalus	Aster	Asteraceae	July on	S, U	R	Scattered places on summit of esker, e.g., above Bowen Lake	
Sunflower, thin leaved (pxale)	Helianthus decapetalus	Aster	Asteraceae	July on	S, U	C	roadsides, woods, e.g., large colony along trail 1 SE of Glacier Ridge shelter	
Sunflower, woodland	Helianthus divaricatus	Aster	Asteraceae	July on	S, U	C	roadsides, woods	
Sweet cicely	Osmorhiza claytonii	Carrot	Apiaceae	May	U	C	Widespread	
Sweet William, wild (spotted phlox)	Phlox maculata	Phlox	Polymoniaceae	May-July	U	S	Sand Lake area, woods by pkg lot	
Thimbleweed, Long-headed	Anemone cylindrica	Buttercup	Ranunculaceae	June-July	U	S	dry sandy woods and meadows	
Thimbleweed, Tall	Anemone virginiana	Buttercup	Ranunculaceae	June-July	FT, U	C	Bowen/Sand Lakes	
Thistle, field	Cirsium discolor	Aster	Asteraceae	August	S, FT	C	Roadsides, open areas, abundant near beach	
Tick Trefoil, Showy	Desmodium canadense	Pea	Fabaceae	August	S	S	One site: by trail SE side Sand L	
Tick-trefoil, panicle	Desmodium paniculatum	Pea	Fabaceae	July-Aug	S	S	Two sites: trailside N of canoe campground; SE side Sand L	



Tick-trefoil, pointed-leaved	Desmodium glutinosum	Pea	Fabaceae	June-July	TS,S,U	C	Widespread
Toothwort, cut leaf	Dentaria laciniata	Mustard	Cruciferae	April-May	U	C	Throughout, best on rich slopes
Trillium, drooping	Trillium flexipes	Lily	Liliaceae	April-May	FT, TS	S	Floodplain at mouth twin ravines trail 6, scattered locations elsewhere
Trillium, ill-scented (red)	Trillium erectum	Lily	Liliaceae	April-May	FT	S	Floodplain at mouth twin ravines trail 6, along both trails 400' W Bowen L
Trillium, large flowered	Trillium grandiflorum	Lily	Liliaceae	April-May	S	C	rich slopes, e.g. Mud-Weber-Sand Lakes
Trillium, prairie	Trillium recurvatum	Lily	Liliaceae	April-May	S, FT	R	one possible site: at poppy colony by Mud Lake
Trillium, toadshade	Trillium sessile	Lily	Liliaceae	April-May	S, U	C	rich slopes-best on N sides Weber and Sand Lakes
Trout lily	Erythronium americanum	Lily	Liliaceae	May	TS	C	Rich slopes-Long, Sand, Weber, Mud L
Trout lily white	Erythronium albidum	Lily	Liliaceae	May	TS	R	Big woods-main site; albino variants of americanum common elsewhere W
Turtlehead, white	Chelone glabra	Figwort	Scrophulariaceae	September	FT	FT	Spotty along Dock, Sand, Bowen lake borders
Twinleaf	Jeffersonia diphylla	Barberry	Barberidaceae	May	T, S	R	toeslopes N side Weber L; ravine behind beach
Two-flowered Cynthia	Krigia biflora	Aster	Asteraceae	May	U	R	Dry sandy ridge S of Finster L
Vervain, white	Verbena uticifolia	Vervain	Verbenaceae	Aug-Sept	FT	C	Moist woods
Vetch, woodland	Vicia caroliniana	Pea	Fabaceae	May-June	S	S	Oak woods N side Bowen L
Violet, birdfoot	Viola pedata	Violet	Violaceae	April-May	TS	R	moist sandy soil, observed only at 1 site along N side Sand L
Violet, Canada	Viola canadensis	Violet	Violaceae	April-May	S	S	Rich woods, esp W end Sand L, along trail 6 above twin ravines, in big ravine
Violet, common blue	Viola sororia	Violet	Violaceae	April-May	U	C	Widespread in woods
Violet, dog	Viola conspersa	Violet	Violaceae	April-May	FT	S	moist woods, known from toeslope S of Mud Lake
Violet, long spurred	Viola rostrata	Violet	Violaceae	April-May	U	S	woods
Violet, marsh blue	Viola cucullata	Violet	Violaceae	April-May	W	S	Wet woods, channels, swamps
Violet, smooth white	Viola macloskeyi	Violet	Violaceae	April-May	W	R	Mucky lake borders
Violet, smooth yellow	Viola pubescens	Violet	Violaceae	April-May	S	C	Widespread on wooded slopes
Violet, striped white	Viola striata	Violet	Violaceae	April-May	FT, S	C	moist woods, widespread, aka cream/pale violet
Violet, sweet white	Viola blanda	Violet	Violaceae	April-May	W	R	Mucky wetlands
Virgins Bower	Clematis virginiana	Buttercup	Ranunculaceae	August	S, FT	C	Widespread along lake borders and channels
Water lily, bullhead (spatterdock)	Nuphar lutea	Water Lily	Nymphaeaceae	June-July	A	S	Little Finster L
Water lily, white (fragrant)	Nymphaea odorata	Water Lily	Nymphaeaceae	June-July	A	C	Most lakes
Water plantain, large-flowered	Alisma triviale	Water-plantain	Alismataceae	August	W	S	Muddy lake borders, shrub swamps, e.g., SE corner Bowen L
Waterleaf, appendaged	Hydrophyllum appendiculatum	Waterleaf	Hydrophyllaceae	May	U	C	moist woods, openings
Waterleaf, Canada	Hydrophyllum candense	Waterleaf	Hydrophyllaceae	May	U	R	moist woods, weedy open woods
Waterleaf, Large-leaved	Hydrophyllum macropylum	Waterleaf	Hydrophyllaceae	May	U	S	moist woods, weedy open woods
Waterleaf, Virginia	Hydrophyllum virginianum	Waterleaf	Hydrophyllaceae	May	U	C	moist woods, weedy open woods
Water-pepper	Polygonum hydropiper	Smartweed	Polygonaceae	August	W	C	Lake borders, Alien?
Willow-herb, cinnamon (purple leaved)	Epilobium coloratum	Evening-Primrose	Onagraceae	August-Sept	W	S	Muddy lake borders, e.g., NE corner Norman L
Willow-herb, fen	Epilobium leptophyllum	Evening-Primrose	Onagraceae	August-Sept	W	S	Muddy lake borders, e.g., SE corner Bowen L
Wingstem	Verbesina alternifolia	Aster	Asteraceae	August	TS, FT	C	Widespread in moist woods and floodplains
Wood-mint, downy	Blephilia ciliata	Mint	Lamiaceae	July	U, S	C	Various habitats, mostly dry and somewhat open
Wood-mint, hairy	Blephilia hirsuta	Mint	Lamiaceae	July	FT, TS	C	Moist woods
Yam, common wild	Dioscoria villosa	Yam	Dioscoriaceae	June-July	FT	C	Lake borders and terraces

## Appendix D: Fauna identified during site visit (October 10-11, 2010)

### **Mammals**

Beaver  
Chipmunk  
Coyote  
Deer, white-tailed  
Raccoon  
Squirrel, flying  
Squirrel, fox  
Squirrel, red

### **Birds**

Heron, Great blue  
Wood Duck  
Turkey Vulture  
Hawk, Red-shouldered  
Owl, Barred  
Flicker  
Woodpecker, Downy  
Woodpecker, Red-bellied  
Blue Jay  
American Crow  
Tufted Titmouse  
Chickadee, Black-capped  
Nuthatch, White-breasted  
Kinglet, Golden-crowned  
Robin  
Sparrow, White-throated  
Cardinal

### **Herptiles**

Frog, Gray Tree  
Frog, Green  
Frog, Wood  
Spring Peeper  
Snake, Ribbon

### **Stanley School**

A log structure was the first Green Township school in Section 4, built in the 1840's near William Bowen's property. Subsequent frame and then brick buildings became known as the Stanley School, named for nearby landowner Henry Stanley. In March 1916, the brick constructed school was destroyed by fire, including all the desks, furnishings and books of the pupils and teacher. The replacement brick one-room school is currently used as a Nature Center within the Chain O' Lakes State Park.



### **Early Schools of Noble County**

by M A Love

My knowledge of the early schools of Noble County is somewhat limited, confined more to my own experience in teaching.

In 1840 I came with my parents to August, then the county seat of Noble County. It was just after the Indians had been taken away. There had been no arrangements yet for schools, but some of the citizens who had come here to make a permanent home were making an effort to start one. They were John Bowman, William Crispell, Michael Coon and Hiram Bassett.

There were a number of children in and about town and they soon had enough subscribed to commence. I was employed to teach. I taught several terms in different rooms wherever we could get them. The last term was in the county jail, or rather in one room of the jail building. Our mode of teaching then was different from these days. Our mode of punishment was different too. There are some here today who may possibly remember how that was done. Some time later Mrs. Love came and taught several terms. I believe that was all the schools August had.

In 1844 I commenced teaching at Rome City. It was their first school. They had no school house. The only room to be had was the bar room of the Hurdy House. We began with ten or a dozen scholars; we made a fairly good beginning that season. We were often interrupted by travelers who came in without ceremony and left in like manner, disgusted, I presume, on seeing a school ma'am instead of the landlord in the bar room.

The next summer I commenced a second term in a new log school house with an average of 25 scholars. Some were from other districts. We had an interesting school. They took an interest in the work. I commenced by teaching reading, writing, spelling and arithmetic - other studies came in afterward. I set copies and made pens out of goose quills. They paid me \$1.50 a week, and I boarded around. Some of the families lived in one room in canal huts. It was a novel way of living, but they were all good people and I enjoyed it.

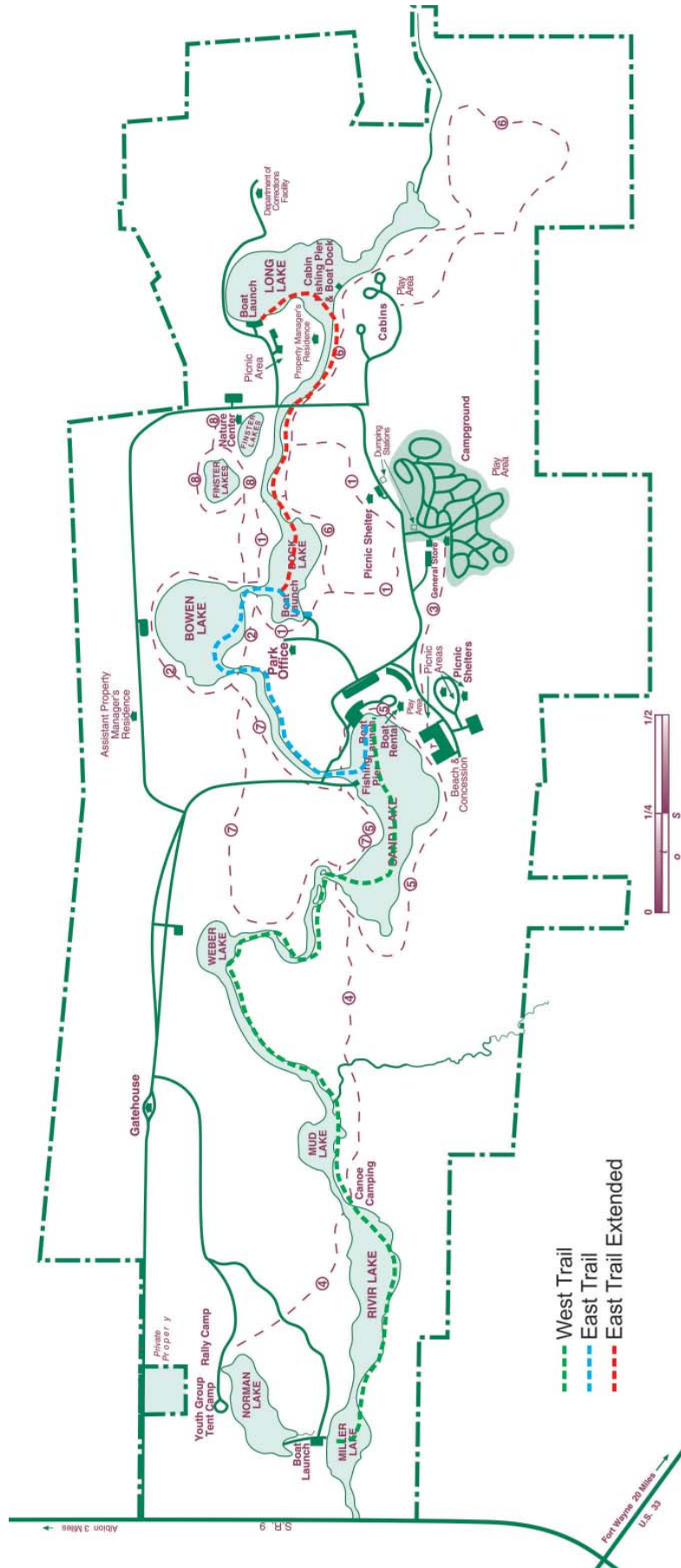
I lost my mother about that time and quit teaching from home. I am gratified to know that my pupils of that day have all become useful citizens. Some of the boys are prosperous and intelligent farmers. One is the elder in the Methodist Church. One has been recorder in our county; and not one, to my knowledge, has ever been a saloon keeper.

I would like to add this much. We traveled in those days on horseback. We would go from Augusta to Lisbon to attend parties, meetings, etc. There was no Kendallville then - that was the Mitchell farm. We would take an Indian trail through the openings which led us right through here where Albion is now located. That was long ago and I think I am the only one left of that day to tell the story.

Read at Old Settlers meeting in Albion, June 3, 1897



Appendix F: Proposed Canoe Trails



# Appendix G: Proposed Hiking Trails

