

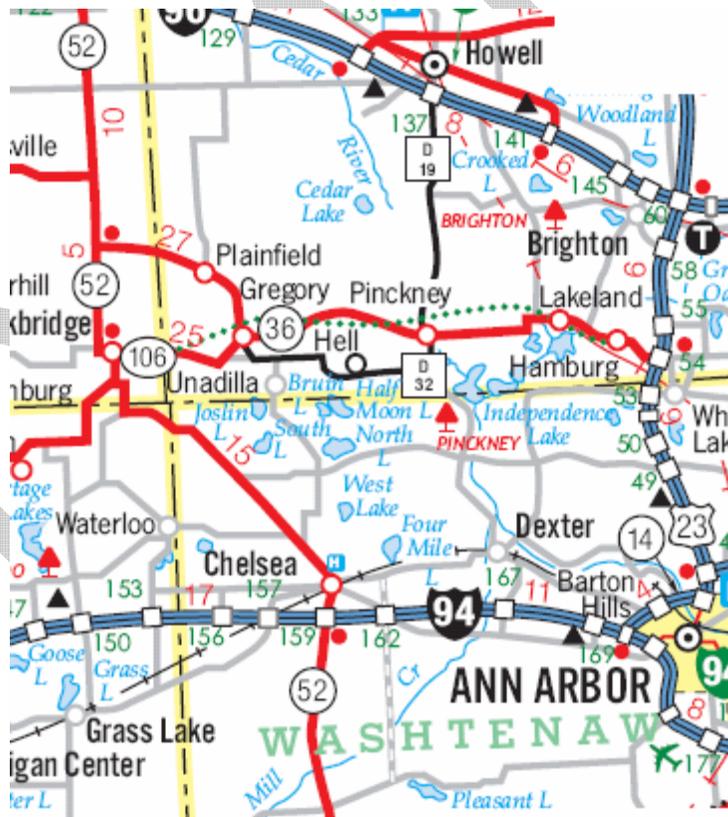
SUPPORTING ANALYSIS

Pinckney Recreation Area

Park Setting

LOCATION AND SURROUNDING COMMUNITY Pinckney Recreation Area is located in the northwestern corner of Washtenaw County, and the southwestern corner of Livingston County. It is approximately at latitude 42° 42", longitude 84° 04". Pinckney RA spans three townships in Washtenaw County; the majority of Pinckney's area lies within Lyndon and Dexter Townships, while a small piece is in Sylvan Township. In Livingston County, Pinckney RA is a part of two townships; Unadilla and Putnam.

The Recreation Area is confined on the north by 36. Roepke Road designates the limits of the parks western area. From the intersection of Roepke Road and M-52, the western boundary extends south along M-52 until Werkner Road. At this point the boundary line follows Werkner Road northeast. Territorial Road is the southern boundary for the east side of Pinckney. Cedar Lake Road and Toma Road are the parks eastern boundaries.



Pinckney Recreation Area is easily accessed from the north and south by way of M-52, and on the east and west via I-94, exits 162 and 167.

Demographics

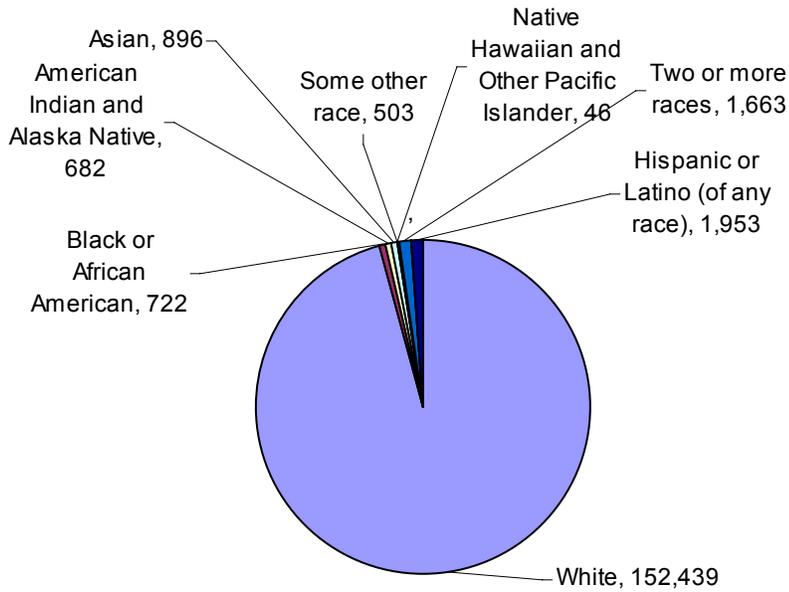
Washtenaw County reported a population of 322,895 in the 2000 census, a 14.1% increase since 1990. Livingston County had a population of 156,951, a 35.7% increase since the 1990 census. The population densities are 454.8 and 271.1 people per square mile in Washtenaw and Livingston Counties, respectively. Both county populations exceed the state average of 175 people per square mile.

Economic Figures for Livingston and Washtenaw Counties (2000 Census)

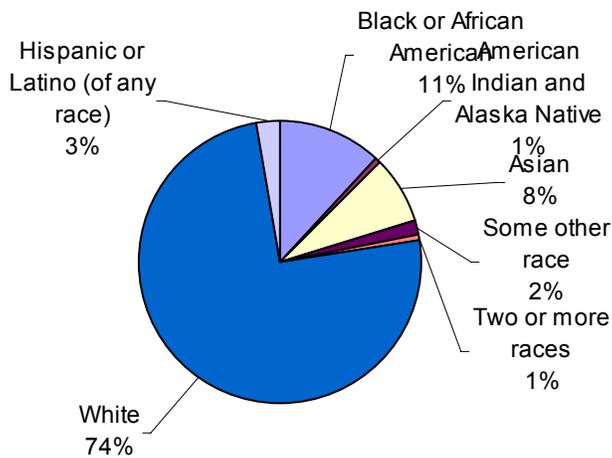
Livingston County	Number	Percentage
EMPLOYMENT STATUS		
Population 16 years and over	116,890	100
In labor force	83,868	71.7
Civilian labor force	83,831	71.7
Employed	81,087	69.4
Unemployed	2,744	2.3
Percent of civilian labor force	3.3	(X)
Armed Forces	37	0
Not in labor force	33,022	28.3
OCCUPATION		
Management, professional, and related occupations	29,816	36.8
Service occupations	9,589	11.8
Sales and office occupations	21,103	26
Farming, fishing, and forestry occupations	141	0.2
Construction, extraction, and maintenance occupations	9,202	11.3
Production, transportation, and material moving occupations	11,236	13.9
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	519	0.6
Construction	7,349	9.1
Manufacturing	18,965	23.4
Wholesale trade	3,219	4
Retail trade	9,907	12.2
Transportation and warehousing, and utilities	2,496	3.1
Information	1,805	2.2
Finance, insurance, real estate, and rental and leasing	5,017	6.2
Professional, scientific, management, administrative, and waste management services	6,609	8.2
Educational, health and social services	14,756	18.2
Arts, entertainment, recreation, accommodation and food services	4,769	5.9
Other services (except public administration)	3,321	4.1
Public administration	2,355	2.9
CLASS OF WORKER		
Private wage and salary workers	68,586	84.6
Government workers	7,898	9.7
Self-employed workers in own not incorporated business	4,373	5.4
Unpaid family workers	230	0.3
INCOME IN 1999		
Households	55,331	100
Less than \$10,000	1,564	2.8
\$10,000 to \$14,999	1,514	2.7
\$15,000 to \$24,999	3,394	6.1
\$25,000 to \$34,999	4,483	8.1
\$35,000 to \$49,999	7,263	13.1
\$50,000 to \$74,999	12,925	23.4

\$75,000 to \$99,999	10,083	18.2
\$100,000 to \$149,999	9,838	17.8
\$150,000 to \$199,999	2,361	4.3
\$200,000 or more	1,906	3.4
Median household income (dollars)	67,400	(X)
Washtenaw County		
EMPLOYMENT STATUS		
Population 16 years and over	259,162	100
In labor force	179,279	69.2
Civilian labor force	179,189	69.1
Employed	172,373	66.5
Unemployed	6,816	2.6
Percent of civilian labor force	3.8	(X)
Armed Forces	90	0
Not in labor force	79,883	30.8
OCCUPATION		
Management, professional, and related occupations	83,275	48.3
Service occupations	23,115	13.4
Sales and office occupations	38,976	22.6
Farming, fishing, and forestry occupations	507	0.3
Construction, extraction, and maintenance occupations	9,702	5.6
Production, transportation, and material moving occupations	16,798	9.7
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	1,047	0.6
Construction	6,762	3.9
Manufacturing	26,637	15.5
Wholesale trade	3,361	1.9
Retail trade	17,284	10
Transportation and warehousing, and utilities	5,834	3.4
Information	5,385	3.1
Finance, insurance, real estate, and rental and leasing	7,682	4.5
Professional, scientific, management, administrative, and waste management services	18,707	10.9
Educational, health and social services	56,181	32.6
Arts, entertainment, recreation, accommodation and food services	13,276	7.7
Other services (except public administration)	5,833	3.4
Public administration	4,384	2.5
CLASS OF WORKER		
Private wage and salary workers	132,125	76.7
Government workers	30,995	18
Self-employed workers in own not incorporated business	8,772	5.1
Unpaid family workers	481	0.3
INCOME IN 1999		
Households	125,465	100
Less than \$10,000	9,960	7.9
\$10,000 to \$14,999	5,715	4.6
\$15,000 to \$24,999	12,388	9.9
\$25,000 to \$34,999	13,577	10.8
\$35,000 to \$49,999	18,493	14.7
\$50,000 to \$74,999	24,139	19.2
\$75,000 to \$99,999	16,365	13
\$100,000 to \$149,999	15,960	12.7
\$150,000 to \$199,999	4,467	3.6
\$200,000 or more	4,401	3.5
Median household income (dollars)	51,990	(X)
* (X) denotes less than 1%		

2000 Census Race Population Estimates, Livingston County



2000 Census Race Population Estimates, Washtenaw County



History of Pinckney RA

Hell, Michigan, like many areas in the state, was initially inhabited by Indians. The Potawatamis were the major tribe living in this region. Modern use of Hell was as a pit stop along the trail from Lansing to Dexter. By the 1830's a New York Farmer named George Reeves had developed a mill, general store, and distillery. By the 1840's a school opened with a capacity of 70 students. Today, Hell's population remains near the population in the 1940's, somewhere around 260.

The village of Pinckney was first settled in 1827, by New York resident William Kirkland and his brother-in-law James Stansbury. They bought their land from the Sanford Marble Company. Kirkland, along with Stansbury as his business manager, began the William Kirkland Company, which organized the village of Pinckney. Kirkland decided to name the community after his brother, Charles Pinckney Kirkland. The village was platted and recorded in 1837. It was eventually incorporated as a village in 1883.

Pinckney RA officially became a State Park in the mid- 1940's. The property was obtained piece by piece, not in one large tract. Over time Pinckney RA has grown as a function of popular use, meaning that often public use of an area has preceded its development. Most development of Pinckney RA took place in the 1940's and 1950's.

Land Ownership Issues

Fund Sources

The following funding sources have been used for acquisition of land in Pinckney Recreation Area:

Gift

Michigan Natural Resource Trust Fund (MNRTF)

The MNRTF has provided financial assistance to protect natural resources and open space, purchase lands for outdoor recreation, and acquire land for its environmental importance or scenic beauty. The Fund's Board of Trustees and the Grants Administration Division of the DNR administer the program. Only state and local governments may apply to the fund to acquire property. Annual revenue from oil, gas, and mineral leasing supports the fund.

There are eleven evaluation criteria for grant funding: the protection and use of significant natural resources, use of inland waters, population served, economic benefits, hunting, fishing and other wildlife-related values, need for proposal, capability of applicant, site and project quality, special initiatives of the Fund board, financial need of the applicant, and local match contribution. Development projects have a minimum grant amount of \$15,000 and a maximum of \$500,000. There is neither a minimum nor a maximum amount on land acquisition grants. Since 1976, the Fund has purchased more than 135,000 acres of land in Michigan.

*Information obtained from *The Trust for Public Land* (www.tpl.org/)

Pittman-Robertson

The Federal Aid in Wildlife Restoration Act, popularly known as the Pittman-Robertson Act, was approved by Congress on September 2, 1937.

The purpose of this Act was to provide funding for the selection, restoration, rehabilitation and improvement of wildlife habitat and wildlife management research. Funds are derived from an 11 percent Federal excise tax on sporting arms, ammunition, and archery equipment, and a 10 percent tax on handguns. Each state's apportionment of funds is determined by a formula which considers the total area of the state and the number of licensed hunters in the state.

*Information obtained from U.S. Fish and Wildlife Service, Wildlife and Sport Fish Restoration Programs Division of Federal Assistance (federalasst.fws.gov)

Below is a portion of the agreement between PRD and Wildlife concerning the management of Pittman – Robertson Lands. For the complete agreement and interoffice communications on this issue, please consult appendix **XX**.

This agreement is an update revision of the original agreement document dated on August 26, 1957, between Parks and Recreation Division and Game Division and recognizes certain changes which have occurred. Since the Parks Division is responsible for the administration of the southern Michigan recreation areas, and since the Wildlife Division is responsible for the planning and supervision of wildlife interests on these state lands, this agreement will define the responsibilities of each.

PARKS DIVISION AGREES:

1. To furnish up to date maps designating areas of intensive use or other dedicated uses which are not compatible with a wildlife management program.
2. Review the maps at least every five years and make any changes necessary.
3. Maps will be furnished to Wildlife Division, Regional Parks and Wildlife supervisors, District Wildlife Supervisor and local Parks Manager of recreation area involved.
4. On areas, other than those designated as not compatible with the wildlife management program. Parks Division will confer with Wildlife Division before undertaking any activity which will damage wildlife habitat improvements or interfere with the wildlife program.
5. To cooperate with Wildlife Division to prevent destruction or developments made under this agreement by fire or other adverse land uses.

WILDLIFE DIVISION AGREES:

1. To prepare plans and maintain records for wildlife development projects and to provide same to Parks Division upon request.
2. To provide nursery stock, lime, fertilizers, seeds, gates, fencing, or other barricades as may be needed to complete developments and protect the lands.
3. To supervise and do the wildlife habitat development work, including arrangements for labor supply, furnishing equipment, or negotiating contracts for privately owned equipment, negotiating sharecrop agreements, and supervision of field operations.
4. To keep the Park Manager informed of work currently being done in the recreation area for which he is responsible.

5. To provide the Park Manager three months in advance with a proposed work plan for projects to be done in the following fiscal year.
6. All work will be carried out according to approved plans.

Special Legislation

Public Act 27, 1944, appropriated \$5,000,000.00 for acquisition of land for recreation facilities. \$1,500,000.00 was dedicated to purchasing lands in southeastern Michigan.

Public Act 50, 1944, appropriated \$632,500.00 for the purposes of purchasing land, construction of state parks, and repairing/remodeling the State Capitol and office buildings. Of the \$632,500.00, \$450,000.00 went to the Department of Conservation.

State Game Fund

Revenue from this fund is raised through a \$1.50 tax on deer hunting licenses.

Other sources available for land acquisition include:

Dingell Johnson

The Federal Aid in Sport Fish Restoration Act, commonly referred to as the Dingell-Johnson act, was passed on August 9, 1950. It was modeled after the Pittman-Robertson Act to create a parallel program for management, conservation and restoration of fishery resources.

*Information obtained from U.S. Fish and Wildlife Service (federalassst.fws.gov)

Game and Fish Fund

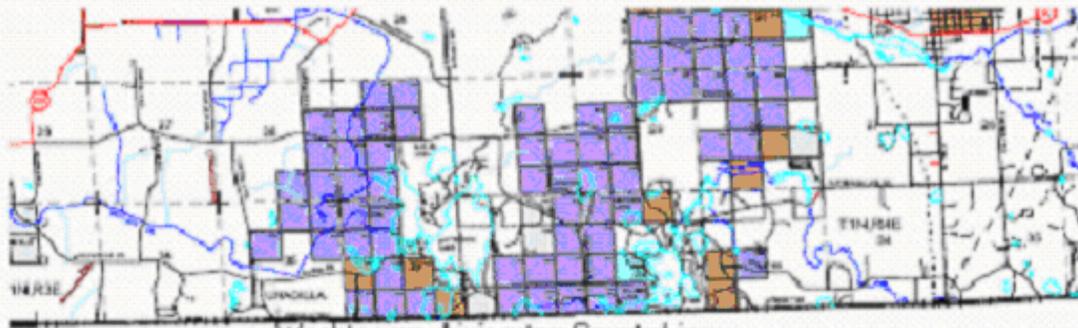
The Game and Fish Protection Fund provides revenues for the operation of the Fish, Wildlife, and Law Enforcement programs. Management, research, enforcement of fishing and hunting laws and acquisition of lands to be used for hunting and fishing purposes are examples of uses of this fund.

*Information obtained from (www.michigan.gov/dnr/0,1607,7-153-10366_10871-44016--,00.html)

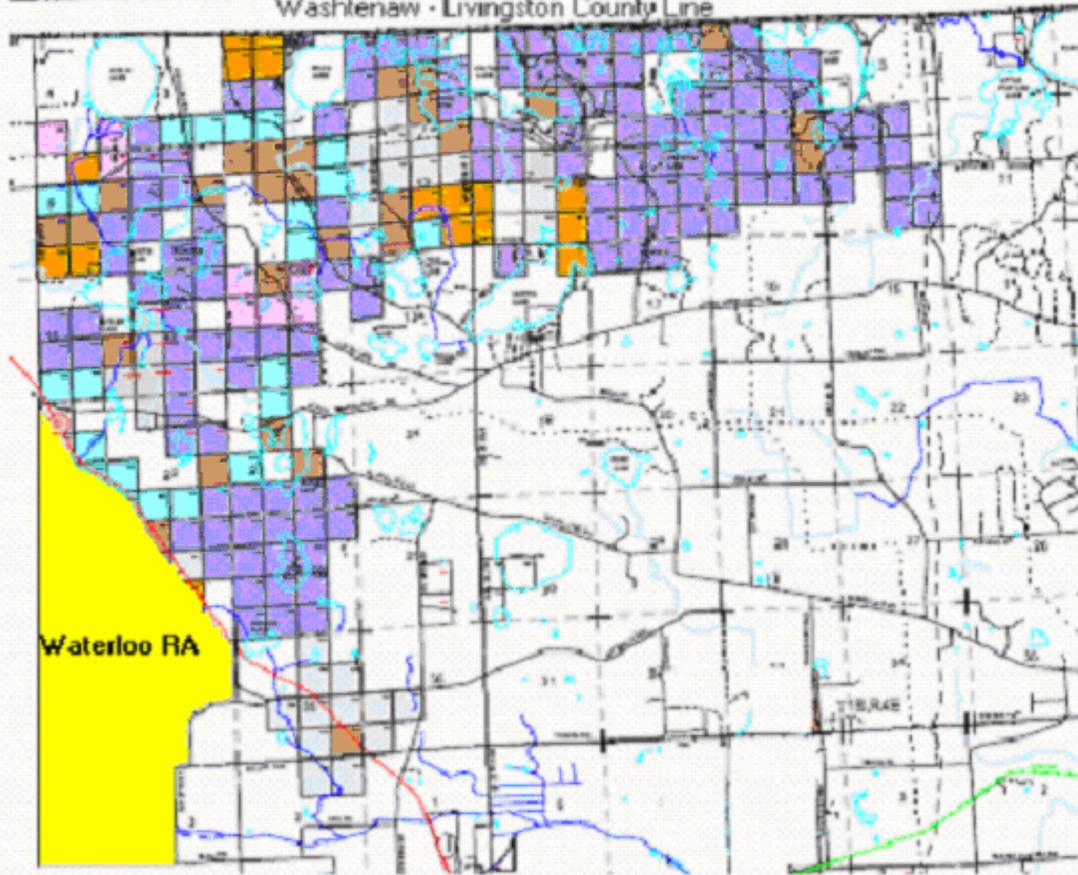
Other Funds

Land purchased with any of the following: Recreation Bond, Waterways, LEFF, Harbor Development Fund, Environmental Settlement Fund, General Fund, and Swamp Tax Fund

Pinckney Land Acquisition Map



Washtenaw · Livingston County Line



Waterloo RA

FUND CATEGORY

-  Gift
-  MNRTF
-  Pittman Robertson
-  Special Legislation
-  State Game Fund
-  **Game and Fish Fund**
-  Multiple Funds

Relationship Of Pinckney RA To Other Park Resources

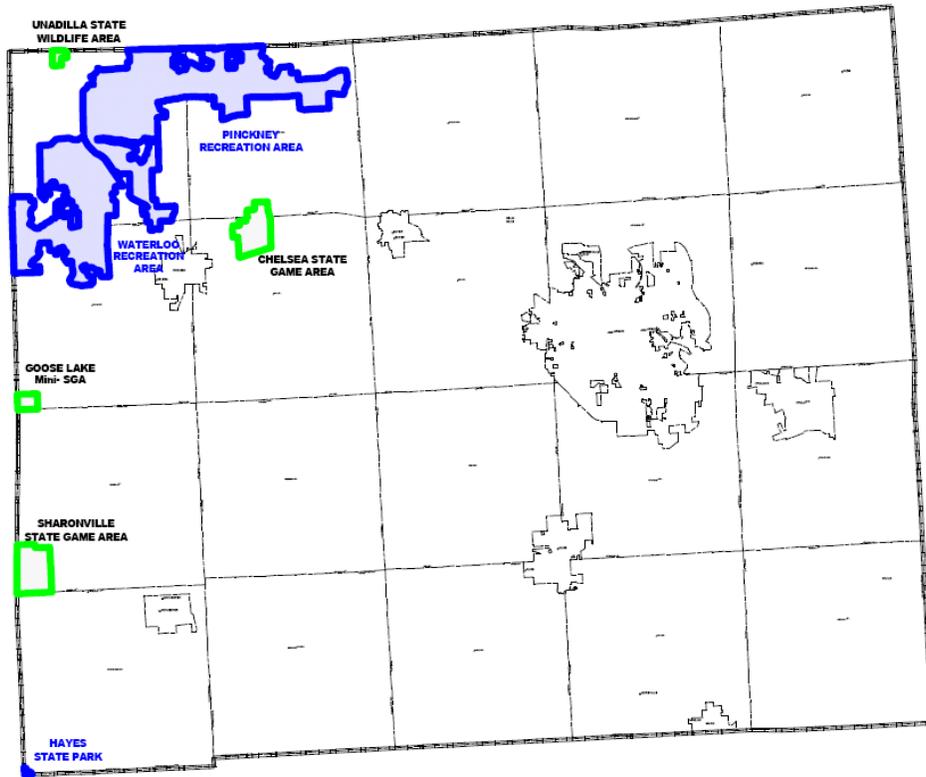
Washtenaw County

State Owned Resources in Washtenaw County

State recreational resources in Washtenaw County include four State Game Areas, Waterloo RA, and a portion Hayes State Park, in addition to Pinckney RA.

Waterloo Recreation Area is closely tied to Pinckney Recreation Area, due to the fact that the parks are adjacent to one another. The main trail system, known as the Waterloo-Pinckney Hiking Trail, is common to both Recreation Areas and spans 29 miles through both parks. Similar activities are common to both Recreation Areas, such as camping, hiking, biking, horse riding, camping, fishing, and hunting.

The State Game Areas in Washtenaw County are Unadilla, half a mile to the north; Chelsea State Game Area, half a mile to the east; Goose Lake, two miles south; and Sharonville State Game Area, six miles south.



County Owned Resources in Washtenaw County:

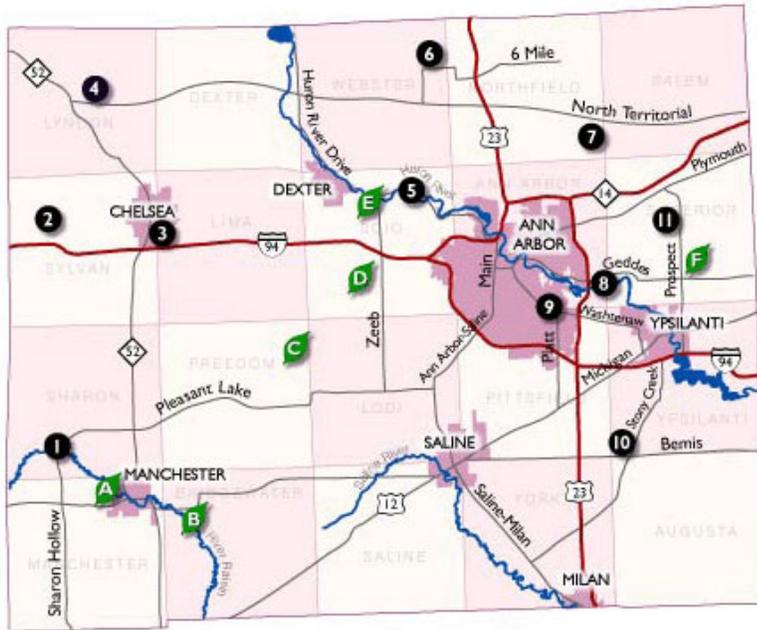
Partially due to the high population density of Washtenaw, County owned resources are in competition with State owned resources. Although county parks are relatively small, they outnumber state owned resources in Washtenaw County with 12 parks and 6 nature preserves. Pinckney can offer a relatively large contiguous piece of land compared to County parks. Many parks share

similar activities such as swimming, hiking, fishing, and picnicking. Both State and County have historical resources within their parks. Two County owned facilities offer water parks. Camping is one staple of State owned resources that the County cannot compete with. Hunting is also a standout feature of Pinckney when compared to county parks.

County Parks and their significant features:

- Sharon Mills Park (1): Sharon Mill is a historic building built in 1835, formerly owned by Henry Ford in the 1930's
- Cavanaugh Lake Park (2): lakeside picnic area, no swimming
- Pierce Lake Golf Course and Park (3): 18 holes, with pro shop and picnic pavilion
- Park Lyndon (4): trail system that ties into the Waterloo-Pinckney Trail
- Osborne Mill Park (5): maintained as a natural area, no services
- Independence Lake Park (6): a feature similar to a water park called a "Spray Zone", boat rental, and swimming beach.
- Northfield Park (7): roadside park with restroom and playground
- Parker Mill Park (8): Parker Mill was is a historical building built in 1873, scenic fishing setting where Fleming Creek joins the Huron River
- County Farm Park (9): community garden
- Meri Lou Murray County Recreation Center (9): swimming pool, gymnasium, workout facilities
- Rolling Hills Park and Water Park (10): water park, trail system, sledding, 18 hole disc golf, fishing
- Superior Center (11): 1 acre, picnic pavilion

There are also six county nature preserves, which are similar to Primitive Zones in Pinckney RA. These are: Leonard Preserve (A), Ervin-Stucki Preserve (B), Brauer Preserve (C), DeVine Preserve (D), Burns-Stokes Preserve (E), and LeFurge Woods Preserve (F).



* Map obtained from eWashtenaw (www.ewashtenaw.org)

Livingston County

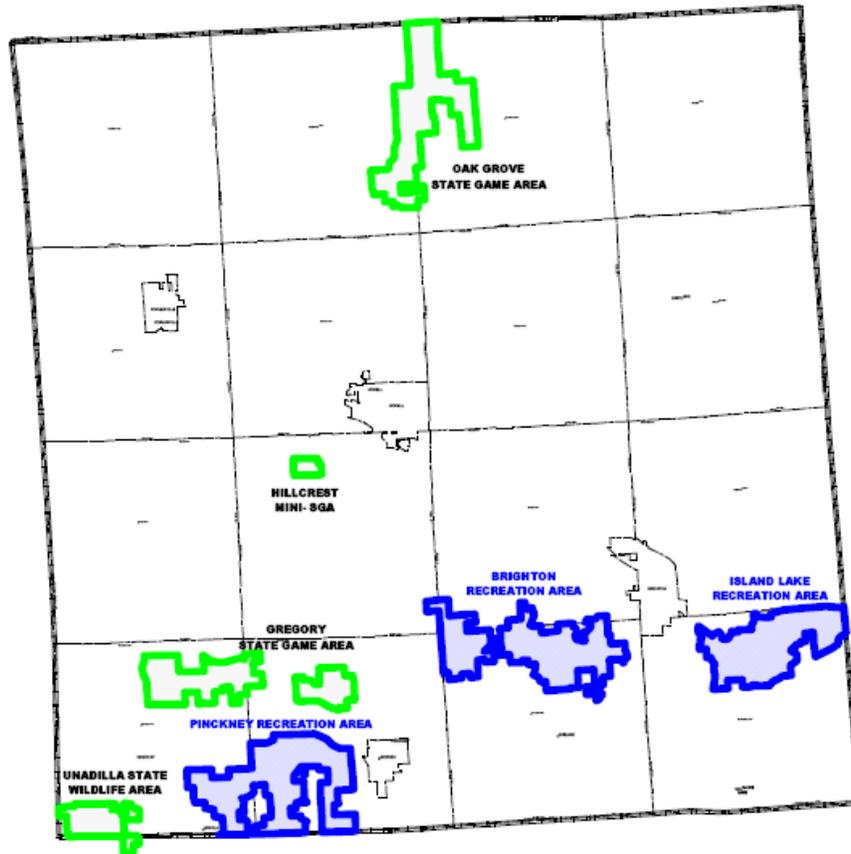
State Owned Resources in Livingston County

There are three Recreation Areas, three State Game Areas, and a Wildlife Area within Livingston County.

Brighton RA is located to the northeast of Pinckney RA. With almost 5,000 acres its recreational activities are similar to those found at Pinckney. There are a number of lakes within Brighton RA. Brighton RA also offers trails for horseback riding, hiking, and mountain biking. Hunting and fishing are allowed.

Island Lake RA is northeast of Pinckney and Brighton. It contains 4,000 acres of wilderness. Recreational activities include hunting, fishing, hiking, biking, and canoeing on the Huron River. There are two campsites that can be accessed from the river. Hunting and fishing are allowed.

Oak Grove State Game Area is at the northern edge of Livingston County in Cohoctah and Deerfield Townships. Hillcrest mini State Game area is centrally located in Livingston County in Marion Township. Gregory State Game Area is just north of Pinckney in Unadilla and Putnam Townships. Unadilla Wildlife Area is west of Pinckney in Unadilla Township and partially extends into Washtenaw County, Lyndon Township.



County Owned Resources in Livingston County

- Howell City Park – activities include a playground, a boat launch, a swimming area, fishing, softball, and volleyball. Daily vehicle permit required, \$1 for residents, \$3 for non-residents.
- Meijer Park, “Recreation on Wheels” Skate Park – includes a hockey rink, a half mile skating trail, and a skate park.
- Huron Meadows Metro Park – 1,500 acres containing an 18 hole golf course, walking trails, fishing area, baseball diamond, and volleyball court.
- Mill Pond Area – located in downtown Brighton, with a wooden playground and the “Mill Pond Walkway.” Free concerts are held on Sundays in July and August.
- Kensington Metro Park – includes an 18 hole golf course, softball diamonds, disc golf course, volleyball courts, playgrounds, trails for hiking, biking, and horseback riding, fishing, swimming, boating, and boat rentals. In the winter sledding, cross country skiing, ice skating, and tobogganing are available.

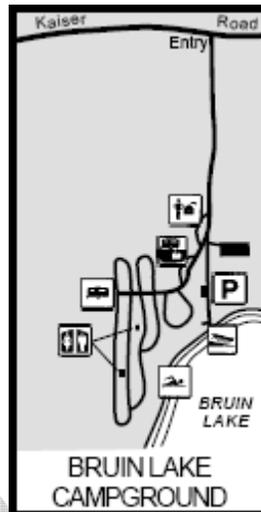
Note: Hell Creek Ranch is a private riding stable located on Cedar Lake Road. It offers one or two hour horseback tours through Pinckney RA’s equestrian trails.

Current Land Use

Pinckney Recreation Area is a multi-use park with a variety of outdoor recreational opportunities including camping, day-use areas, hunting, fishing, and

use of the trail system. One of the most important features of Pinckney is its untarnished natural state in a region that is swiftly being developed into urban communities. Thus, development has been restricted and concentrated into a few areas of the park. The three most developed areas within the park are Bruin Lake Campground, Silver Lake day use area, and Halfmoon Lake day use area.

Bruin Lake Campground – A modern campground featuring 186 campsites and two restroom facilities, multiple access sites for potable water, a sanitation station, and a campground office. Recreational resources include horseshoe pits and volleyball courts, plus access to Bruin Lake for swimming and boat launching.



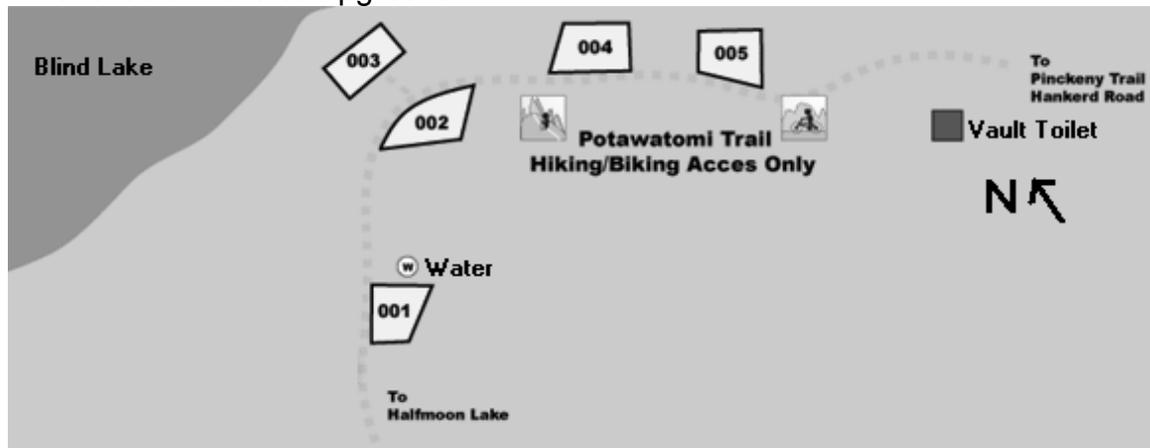
Silver Lake Day Use Area – Recreational resources include concessions, access to the trail system, a playground, volleyball courts, horseshoe pits and a fishing pier. There are seasonal modern toilet facilities. From Memorial Day to Labor Day boats, kayaks, and canoes can be rented at the concession store.

Halfmoon Lake Day Use Area - A boat launch, two picnic shelters, trail access, volleyball court, horseshoe pits, and playground are available at Halfmoon Lake Day Use Area.

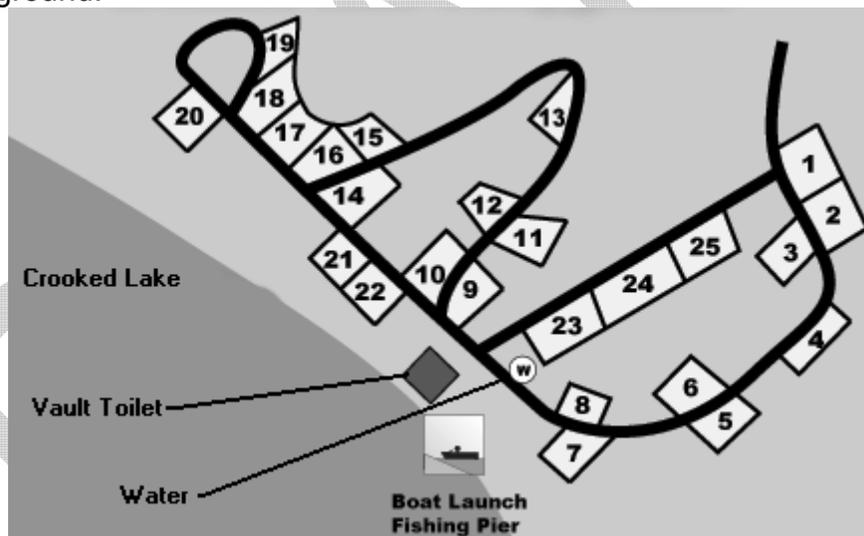


These other parts of Pinckney RA have also undergone development: Blind Lake Campground and Crooked Lake Campground, as well as access to lakes and the trail system.

Blind Lake Campground – Blind Lake is a rustic campground with five campsites. It is located along the Pinckney-Waterloo Trail, and serves as an excellent pit stop for anyone hiking the entire trail. A vault toilet and potable water are available in the campground.



Crooked Lake Campground – Crooked Lake Campground is rustic with 25 sites and a boat launch. A vault toilet and potable water are available in the campground.



Pickerel Lake –This site was completely re-constructed and opened to the public in 2005. Use of the site is primarily for swimming, with carry-down launching and retrieval of boats allowed. There is a special land use order that prohibits the launching of any boat with a gasoline motor from the shores of Pickerel Lake, although gasoline motor boats can access Pickerel Lake from Crooked Lake through a connecting channel. Fisheries Division used to plant trout in Pickerel Lake, but no longer does. A fishing pier that used to be located here was removed because of safety concerns.

Boat Launches - There are developed boat launches on Bruin, Halfmoon, South, North, Joslin and Portage lakes. Unimproved ramps are located on, Crooked, Gosling, and Hiland Lakes. There are hand-carry access sites onto Sullivan Lake and Pickerel Lake. The chain of seven lakes can be accessed from Bruin Lake and Halfmoon Lake.

Trail Resources

Pinckney RA has miles of multi-use trails. For a map and description of the trails refer to "[Recreational Resources](#)."

Projected Land Cover (1980 – 2040)

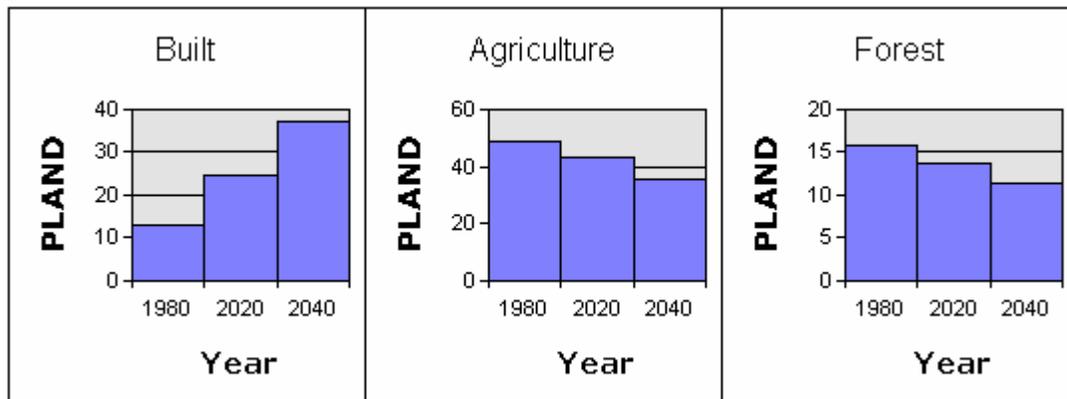
Both Jackson and Livingston counties will be experiencing rapid urban development over the next 40 years. As such, agricultural and forested land will be quickly developed as urban areas, concentrated around the Ann Arbor and Detroit Metro areas.

Currently forest cover makes up about 20% of land cover in Livingston and County, and less than that in Jackson County. Agricultural land covers about 45% of land in Washtenaw County and about 36% in Livingston County. Urban built environment covers approximately 10% of all land.

It is projected that by the year 2040 the built environment in Jackson and Livingston Counties will triple or more. As a result forests and agricultural lands will decline greatly.

For this reason it is important to maintain state parks in areas where they may be the only natural landscape available for recreational purposes.

Washtenaw County: Built Environment, Agriculture, and Forest as a Percentage of Total Land Use



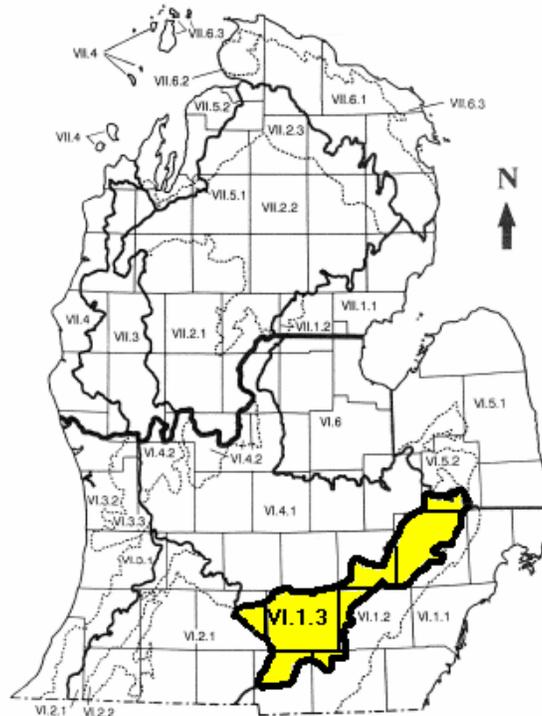
* Graphs found may be found at <http://www.cevl.msu.edu/pages/lulc/peopleland.htm>

Livingston County: Built Environment, Agriculture, and Forest as a Percentage of Total Land Use

Natural Resources of Section VI.1.3

Information contained in the “Natural Resources of Section VI.1.3” component comes from:

Regional Landscape of Michigan and Wisconsin, A Working Map and Classification. Dennis Albert. September 20, 1995.



Map excerpted from Michigan Natural Features Inventory (MNFI) Report, page 22

Pinckney Recreation Area is located in section 6, subsection 1.3, known as the Jackson Interlobate; coarse textured end moraine, outwash, and ice contact topography; oak savannah and oak-hickory forest, hardwood swamps, prairie fens, and bogs.

Water Resources

Many kettle lakes and ponds can be found on the outwash, end moraines, and ice contact areas. Extensive wetlands surround many of the lakes and occupy entire ice-block depressions. Both marl and peat deposits were extensively mined in the past. The headwaters of many major rivers originate in the extensive wetlands. These are the Huron, Grand, Kalamazoo, and St. Joseph Rivers.

Climate

Growing season is 140 to 150 days. Danger of late spring frosts is great due to numerous lowland depressions, including outwash and kettle lakes. Average snowfall is 40 to 50 inches. Annual precipitation is 30 to 32 inches. Extreme minimum temperatures range from -22° F to -28° F.

Geology and Topography

The underlying Mississippian and Pennsylvanian bedrock, primarily sandstone, is locally exposed at the surface in the southwestern end of the subsection. Drift thickness is generally less than 100 feet. In the northeastern part bedrock is overlain by 250 to 300 feet of glacial drift.

There are broad expanses of outwash sands that surround sandy and gravelly end moraines and ground moraines. End and ground moraines remain as island-like hills surrounded by flat outwash. Larger linear segments of end moraine, broken by only narrow outwash channels are typically located along the margins of the subsection.

The Jackson Interlobate region includes areas of ice contact topography. Kettle lakes, kames, eskers, and segments of outwash channels are predominant features of the ice contact areas. At the west edge the topography is more gentle; broad coarse textured ridges are surrounded by deposits of outwash land.

Soils found in the moraine areas of the park are either well drained or excessively drained. In the outwash regions drainage ranges from excessively well drained to poorly drained. Ice contact areas are excessively well drained on upland kames and eskers, and are poorly drained in the kettles and outwash channels. Sandy loam is the most prevalent soil type in the moraine ridges, while sand is most prevalent on the outwash plains. The glacial drift that forms the moraine ridges is made up of local limestone bedrock. Illuviation is responsible for the clay rich horizon in many of the soils on the moraines, providing a good water holding capacity. Ice contact areas contain sand and gravel.

Natural Resources of Pinckney Recreation Area

Climate

LIVINGSTON COUNTY CLIMATE		
MONTH	AVG. MIN TEMP	AVG. MAX TEMP.
January	14F./-10C.	28F./-2C.
July	60F./16C.	81F./27C
PRECIPITATION	RAINFALL	SNOWFALL
Average Annual	32in./81cm.	45in./114cm.
GROWING SEASON	DAYS ABOVE 90F/32C	DAYS BELOW 0F/-18C
158	7	11

WASHTENAW COUNTY CLIMATE		
MONTH	AVG. MIN TEMP	AVG. MAX TEMP.
January	17F/-8C	31F/-1C
July	52F/17C	84F/29C
PRECIPITATION	RAINFALL	SNOWFALL
Average Annual	30in./76cm	36in./91cm.
GROWING SEASON	DAYS ABOVE 90F/32C	DAYS BELOW 0F/-18C
174	11	6

Source: NOAA Climate Summary, 1995

Note: Due to Pinckney Recreation Area's southern location in the Jackson Interlobate Region, the climate data for the Livingston/Washtenaw County will vary slightly from the averages recorded for region VI.1.3.

Water Resources

Pinckney is a part of two major watersheds, the Grand and the Huron. The Huron is represented by the unique "chain of lakes" which forms the downstream headwaters for Portage drainage system (the Portage River is a major tributary of the Huron River).

Pinckney RA contains more than twenty major lakes, ranging in size from a few acres to over two hundred acres. Most of the lakes are primarily spring fed. The depth of the lakes ranges from two to eighty feet. Due to the irregular glacial topography of the terrain, lakes in this region are also irregularly shaped. The bottoms of the lakes are generally made up of sand, gravel, marl, or muck. Shores are sometimes marshy, with pond lily, arrowhead, cat tails, reeds, marsh grasses, and shrubs such as dogwood, elderberry, buttonbush and willows. Occasionally, tamarack is found in the flat swamps which make up former lakebeds.

Major Lakes in Pinckney RA

- Crooked Lake: 113 acres, maximum depth 20 feet, natural lake.
- Bruin Lake: 145 acres, maximum depth 48 feet, natural lake with an outlet.
- Joslin Lake: 180 acres, maximum depth 20 feet. Natural lake with an inlet to the lake on the southern shore and an outlet on the northeastern shore, flowing into Portage Creek.
- South Lake: 193 acres, maximum depth 70 feet. Natural lake, inlet at the southern shore and an outlet at the western shore that flows into Joslin Lake.
- Sullivan Lake: 18.5 acres, maximum depth 22 feet. Natural lake with an outlet on the northern shore,
- Canfield Lake: 3.5 acres, maximum depth 24 feet. Natural lake with an inlet and an outlet.

- Clarke Lake: 15 acres, maximum depth 19 feet. Inlet and outlet.
- Patterson Lake: 15 acres, maximum depth 19 feet. Inlet and outlet.
- Bass Lake: 67 acres, maximum depth 26 feet. Inlet and outlet.
- Mud Lake: 33 acres, maximum depth unknown.
- Hi-Land Lake: 123 acres, maximum depth unknown. Artificial lake with an inlet and an outlet.
- Blind Lake: 68 acres, maximum depth 80 feet. Natural lake with an outlet.
- Silver Lake: 175 acres, maximum depth 47 feet. Natural lake with a dam, inlet, and outlet.
- Gosling Lake: 12.2 acres, maximum depth unknown. Inlet.
- Beaver Lake: 9.4 acres, maximum depth unknown. Natural lake with an outlet.
- Pickerel Lake: 23.7 acres, maximum depth 56 feet. Natural lake with an inlet and an outlet.
- Losee Lake: 13 acres, maximum depth unknown. Inlet.
- Gorman Lake: 52 acres, maximum depth 31 feet. Natural lake.
- Island Lake: 100 acres, maximum depth unknown. Natural lake with a dam.
- Snyder Lake: 12 acres, maximum depth unknown. Natural lake with an inlet and an outlet.
- Watson Lake: 30 acres, maximum depth unknown. Natural lake with an inlet and an outlet.

There are also many smaller lakes in Pinckney Recreation Area with no supporting information available.

Information on water resources was obtained from "State of Michigan Environmental Assessment – Pinckney RA"

Topography and Soils

The highest point in Pinckney is Stofer Hill at 1,150 feet. Other high points are Shanahan Hill (1050 feet) and Prospect Hill (1053 feet). The Fort Wayne branch of the Erie Lobe of moraines runs diagonally from the southwest to the northeast across Pinckney RA.

Within Pinckney RA there are several soil types. Usually each soil boundary encloses an association of soils rather than one definite soil. The association is made up of one dominant soil. Information on the soil make up was obtained from "State of Michigan Environmental Assessment – Pinckney RA"

Bellefontaine: This soils system consists of well drained soils with loamy surface layer over sandy clay loam or clay loam. Runoff is slow in the nearly level areas and rapid in the more sloping areas.

Coloma: Well drained soils with a sandy surface layer over alternate layers of sand and loamy sand or light sandy loam, over sand. Low dunes, lake plains, and moraines. Droughty and susceptible to erosion.

Miami: The Miami Senes consist of light cooler, well drained soil formed in highly calcareous glacial till made up of loam to light clay loam.

Kerston: The Kerston soils consist of alternate layers of black muck and alluvial sands and silts. The layers of mineral material are generally thinner than the layers of muck. The soils are poorly drained and have a high water table, which causes frequent flooding.

Rifle: The Rifle series consists of organic soils mainly formed from slightly decomposed woody plants including tamarack, red maple, elm, and white birch. The soils are similar to Carlisle and Houghton soils, but the surface layer on the surface layer of the Carlisle soils consist of much more decomposed muck and the Houghton soils have formed mainly from fibrous plant remains.

Houghton: The Houghton series consists of organic soils that have formed from fibrous plant remains deposited in wet depressions. In the uppermost few inches, the sedges and grasses from which these soils formed are partly or completely decomposed. They are successively less decomposed at increasing depths. These soils occur mainly in marshy areas, some of which are bordered by lakes. They differ from Carlisle muck, which has formed mainly from woody plants rather than from fibrous materials. The thickness of organic deposits ranges from five to twenty feet. The degree of decomposition varies; in a few areas the surface is somewhat woody.

Carlisle: The Carlisle series consists of black to very dark brown, well decomposed organic soils. The soils have form in mixed woody and fibrous materials under a swamp-timber type of vegetation. The organic soil materials are generally more than 42 inches thick. The Carlisle soils occur in old lakebeds and in drainage ways, but the most extensive areas are in closed depression in the uplands. A few areas occur in bottom lands, outwash plains, and in old glacial valleys.

Flora – Presettlement

Prior to European settlement, mixed oak forests dominated the hilly upland areas of ice contact. Soils of these forests were dry and supported a dominance of white oak and black oak but also contained significant amounts of pignut hickory, black cherry, and sassafras. Black oak was an especially important component of dry and dry-mesic southern forests in this region of the state. Wetland communities surrounded many lakes and ponds, in some cases occupying the smaller ice block depressions in their entirety. Wet prairie, mixed conifer swamp, and mixed hardwood swamp were most common, but emergent marsh – shrub swamp also occurred. Conifer swamps were dominated by tamarack in southern Michigan, and southern hardwood swamps contained elms, ashes, and maples. Emergent marsh – shrub swamp was found along lake margins and included areas of emergent sedges that graded into dogwood, willow, and buttonbush shrub swamp. The northern boundary of Pinckney RA extends slightly into outwash plain, where large areas of wet prairie occurred prior to settlement. In fact, all of Woodburn Lake was once wet prairie. Most of what was documented as wet prairie included wet prairie, wet meadow, emergent marsh, shrub swamp, and prairie fen. Prairie fens are globally rare and in Michigan they are known almost exclusively from the Interlobate region.

*Information on pre-settlement flora was obtained from: "Inventory and Management Recommendations for Pinckney and Waterloo State Recreation Areas' Natural Communities, Rare Plants, and Rare Wildlife." Prepared by: Jeffrey L. Cooper, Phyllis J. Higman, Jodi Spieles, Michael R. Penskar, David L. Cuthrell, Yu Man Lee, Dennis A. Albert, and Lori Peltz-Lewis

Flora – Current Land Cover

The forested sections of Pinckney RA are confined to many small woodlots, the largest of which would not exceed 100 acres in size. Stands are irregular in outline and mostly in areas where the topography is too sloped for agricultural use. The woodlots are composed of unevenly aged, deciduous stands of trees.

Much of the level upland is old agricultural land that is now open fields. Many of these fields contain a dominance of non-native plants including spotted knapweed, white sweet clover, timothy grass, Kentucky bluegrass, and quack grass. However, native plants also common to these openings include tall goldenrod, hairy aster, black-eyed susan, common cinquefoil, and wild strawberry. Non-native, autumn olive is a dominant component along the edges and spreading into most of these open fields. On uplands where steep slopes occur, there is second growth dry or dry-mesic southern forest. Dry southern forests are dominated by white oak and black oak, and dry-mesic southern forests are dominated by white oak, black oak, red oak, and hickory.

Non native plants, including garlic mustard and multiflora rose, are common in most of these forests. Patches of the non-native black locust are scattered throughout upland areas, mostly on edges of oak forests. There are many different types of wetlands in Pinckney RA. Kettle depressions most often contain inundated shrub swamp or a ring of emergent marsh surrounding relict conifer (tamarack) swamp. Southern wet meadow, cat-tail marshes and southern shrub swamp are also common in kettle depressions. In lowlands around lakes and drainage streams, emergent marsh, southern shrub swamp, relict conifer swamp, southern wet meadow, and prairie fen occur. A notable change is the significant amount of shrub swamp at present that was not evident in pre-settlement times. It is clear that some of the present day shrub swamp has resulted from succession due to fire suppression. Several areas of prairie fen degraded by the encroachment of woody shrubs were identified during surveys. Prairie fens are rare. Pinckney RA is providing conservation for several of these communities. Pinckney RA also contains small areas of wet mesic and mesic sand prairie, globally rare natural communities.

*Information on flora – current landcover was obtained from: "Inventory and Management Recommendations for Pinckney and Waterloo State Recreation Areas' Natural Communities, Rare Plants, and Rare Wildlife." Prepared by: Jeffrey L. Cooper, Phyllis J. Higman, Jodi Spieles, Michael R. Penskar, David L. Cuthrell, Yu Man Lee, Dennis A. Albert, and Lori Peltz-Lewis

Special Concern, State Threatened, or State Endangered Species

Hairy angelica (*Angelica venenosa*)
Dwarf hackberry (*Celtis occidentalis*)
Horsetail spike-rush (*Eleocharis equisetoides*)
Umbrella-grass (*Fuirena squarosa*)
Dwarf-bulrush (*Hemicarpha micrantha*)
Bald-rush (*Psilocarya scirpoides*)
Rose-pink (*Sabatia angularis*)
Prairie dropseed (*Sporobolus heterolepis*)
White lady's-slipper (*Cypripedium candidum*)
English sundew (*Drosera Xanglica*)
Mat muhly (*Muhlenbergia richardsonis*)
Bog bluegrass (*Poa paludigena*)
Clinton's bulrush (*Scirpus clintonii*)
Tall nut-rush (*Scleria triglomerata*)

*list taken from Inventory and Management Recommendations for Pinckney and Waterloo State Recreation Areas' Natural Communities, Rare Plants, and Rare Wildlife

Fauna

Common Fauna

Animal populations in Pinckney RA are typical of the region. Common animals include: deer, rabbit, fox, raccoon, opossum, squirrels, and coyotes. Avian species include swans, snow and blue geese, Canada geese, mallards, black ducks, blue wing teal, wood ducks, bitterns, great blue herons, black terns, coot, egrets, pheasant, quail, ravens, crows, red winged blackbirds, and a number of songbird species. One bird of note is the sandhill crane, which attracts bird watchers from all across the nation to Pinckney RA. Unfortunately, many domestic animals, such as dogs and cats, have been abandoned in the park and are now part of the habitat.

Special Concern, State Threatened, State Endangered and Federally Endangered Species

Blanding's turtle (*Emydoidea blandingii*)
Blazing star borer (*Papaipema beeriana*)
Cerulean warbler (*Dendroica cerulean*)
Eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*)
Hooded warbler (*Wilsonia citrine*)
Poweshiek skipper (*Oarisma powesheik*)
Red-legged spittlebug (*Prosapia ignipectus*)
Spotted turtle (*Clemmys guttata*)
Tamarack tree cricket (*Oecanthus laricis*)
Woodland vole (*Microtus pinetorum*)

*list taken from Inventory and Management Recommendations for Pinckney and Waterloo State Recreation Areas' Natural Communities, Rare Plants, and Rare Wildlife

Historic/Cultural Resources

Education and Interpretation

State park explorer programs are offered to campers and day visitors at Pinckney RA. State park explorer guides lead informal programs and hikes that feature natural, cultural, and historic resources. Program topics include forests, insects, night hikes, pond studies, and other topics covering the variety of plants, animals, and natural features found within Pinckney RA. These programs are designed for children and adults, often in a family setting.

Recreational Resources

Pinckney Recreation Area offers a diverse array of recreational opportunities with both day-use activities and camping. Following are the recreational features of this park:

Hunting: The majority of Pinckney RA is open to hunting during the normal season for each species. There are seasonal restrictions on shooting from April 1 to September 14. Hunting is prohibited in "Hunting Safety Zones," located around developed day use areas, camp grounds, and park offices. Target shooting is prohibited.

Swimming: Developed swimming areas are available at Half Moon Lake, Bruin Lake, Pickerel Lake, and Silver Lake. Bruin Lake beach is open only to campers.

Fishing: Pier fishing is available at Silver Lake and Crooked Lake. All accessible lakes within Pinckney can be fished.

Picnic Area at Silver Lake: Located near the beach at Silver Lake, this picnic area has picnic tables, grills, fire pits, and seasonal modern toilet facilities. Recreational opportunities include access to the trail system, a playground, volleyball courts, horseshoe pits, and a fishing pier. From Memorial Day to Labor Day row boats, canoes, kayaks, paddle boats, and your-motor-on boats can be rented. A concession building is located at Silver Lake Picnic Area as well. Alcohol is prohibited from April 1 through September 30 without the written authorization of the park manager at Silver Lake.

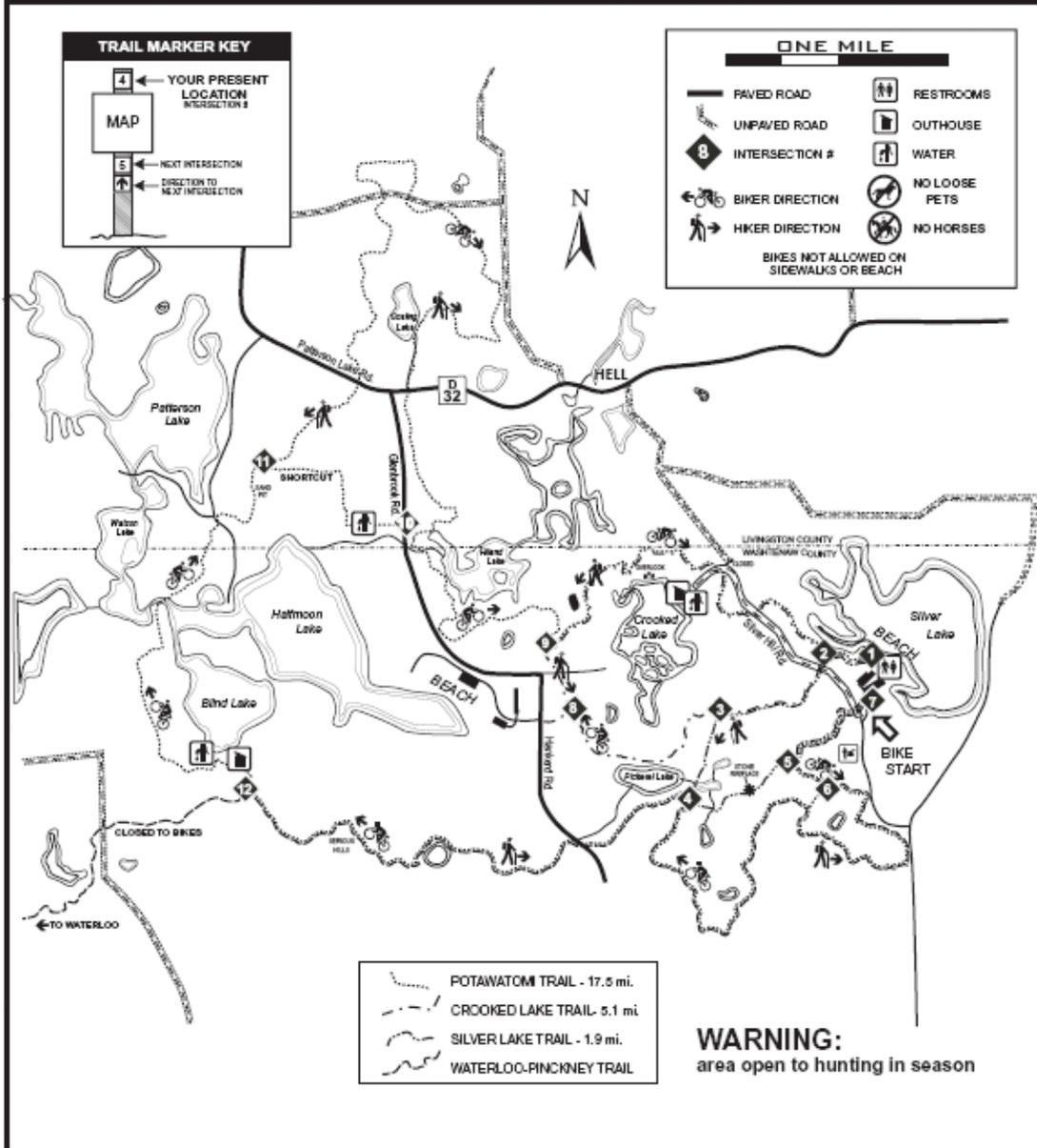
Picnic Area at Halfmoon Lake: The picnic area at Half Moon Lake includes a boat launch, access to the Potowatami Trail, a volleyball court, horse shoe pits, and a playground. There are two picnic shelters which can be reserved. Alcohol is prohibited from April 1 through September 30 without the written authorization of the park manager at Halfmoon Lake.

Trail System: Hiking, mountain biking, equestrian, and cross country ski trails criss-cross the entire park. Hikers and mountain bikers will have access to the extensive trail system that begins at Silver Lake Beach. Trailside camping is allowed within designated campgrounds. Equestrian trails are located in the northern section of Pinckney RA. Snowmobiling in designated areas is allowed if 4 inches of snow are on the ground. Hiking trails are closed to snowmobiling.



BIKING and HIKING TRAILS

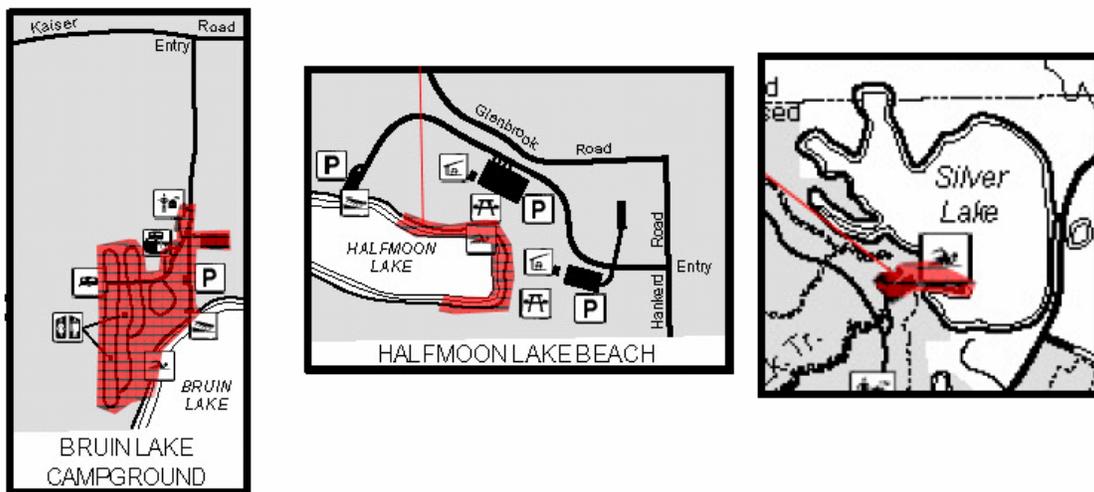
PINCKNEY STATE RECREATION AREA



Pinckney-Silver Lake trail: 2 miles. Hiking, mountain biking, cross country ski
Pinckney-Crooked Lake trail: 5 miles. Hiking, mountain biking, cross country ski
Pinckney-Potawatomi trail: 17 miles. Hiking, mountain biking, cross country ski
Pinckney - Waterloo trail: 29 miles. Hiking, cross country ski
Pinckney equestrian trails: 8 miles. Equestrian
Pinckney - Losee lake trail: 3.3 miles. Hiking

Boat Access/Launch Site: Improved boat launches can be found at Bruin Lake, Half Moon Lake, South Lake, North Lake, Joslin Lake, and Portage Lake. Unimproved boat ramps are located on Crooked Lake, Gosling Lake, and Hiland Lake. There are hand carry access site into Sullivan Lake, and Pickerel Lake. The chain of seven lakes can be accessed through Bruin Lake and Half Moon Lake.

Metal Detecting: Any items found must be checked with the park staff and may be held for further investigation. Areas open to metal detecting are Halfmoon Lake Beach, Bruin Lake Campground, and Silver Lake Beach. Note: only the un-vegetated area of Halfmoon Lake Beach is open to metal detecting. Check the map before using a metal detector to find the specific locations at which metal detecting is allowed.



Park Use Statistics and Economic Impacts

Economic Impacts: Michigan State University (Dr. Dan Stynes) developed an economic analysis model known as "MGM2". This model is an update of the MGM model developed by Dr. Ken Hornback for the National Park System in 1995. The purpose of the updated MGM2 model is to estimate the impact of park visitor spending on the local economy. These economic impacts are reflected in terms of sales, income, employment, and value added.

This analysis tool relies on three primary factors in the common equation:

Economic Impact of Tourism Spending = Number of Tourists (x) Average Spending per Visitor (x) Multiplier (to estimate extended effects of direct spending).

For our purposes of conducting a very basic review of impacts, we have utilized the "MGM2-Short Form" version of the program, which simplifies the extent of analysis required for input, and utilizes more generalized multipliers for

spending outputs. For the non economist, this provides an excellent tool for establishing a baseline assessment of the economic impacts of our parks.

Following are the relative economic impacts (based on 2003 data) of Pinckney RA to the economy of Livingston/Washtenaw County: ("[MGM2-Short Form](#)" for Algonac)

DIRECT ECONOMIC EFFECTS TO THE COMMUNITY

- Direct spending attributable to Pinckney RA visitors totaled \$7,842,000, of which \$5,977,320 came from Day-Use, and \$1,844,680 from Camping.
- Jobs totaled 246, with 188 related to Day-Use activity and 58 to Camping. (Note...jobs are not full-time equivalent. They include part-time and seasonal positions.)
- Personal Income total is \$2,660,140, with \$2,032,790 associated with Day-Use of the park and \$627,35 associated with Camping.
- Value added (total income plus business taxes) totaled \$4,016,110. Day-Use accounted for \$3,068,980 and Camping accounted for \$947,130.

TOTAL ECONOMIC EFFECTS TO THE COMMUNITY (NOTE...this reflects 'Direct Effects' plus the 'Secondary Effects' of visitor spending on the local economy. Secondary Effects (sometimes called 'Multiplier Effects') capture economic activity that results from the re-circulation of money spent by the park visitors in the community.

- Total spending = \$10,340,760 (31.86% over direct spending)
- Jobs = 287.51 (16.87% over direct job impacts)
- Personal Income = \$3,499,170 (31.54% over direct spending)
- Value added = \$5,568,310 (38.95% over direct value added)

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

Stakeholders

University of Michigan

U of M owns two tracts of land adjacent to Pinckney RA. The northern tract is encompassed by a 12' fence in order to contain and study white tail deer. The eastern tract is known as "Stinchfield Woods." This 770 acre piece of land used to be owned by

the DNR, and would be a good addition to the trail system if we ever get it back. The trails tie into connect Hudson Mills Park.

DRAFT