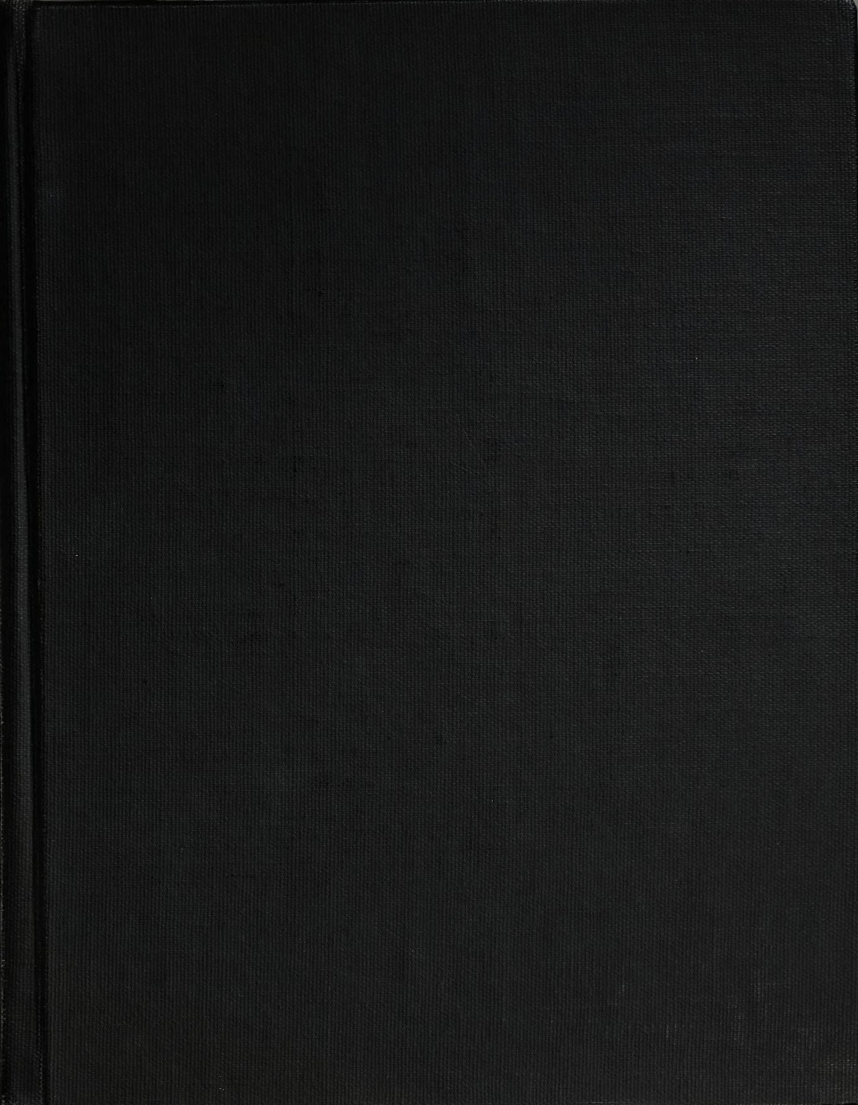








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NATURE PRESERVES IN MICHIGAN, 1920-1979

By

Susan Rae Crispin

A THESIS

Submitted to

Michigan State University

in partial fulfillment of the requirements  
for the degree of

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1980



ABSTRACT

NATURE PRESERVES IN MICHIGAN, 1920-1979

By

Susan Rae Crispin

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Nature preserves are herein defined as areas explicitly set aside solely for the preservation of natural ecosystems or unique natural features. Numerous organizations and government agencies hold nature preserve properties in Michigan; this inventory attempts to summarize the activities and accomplishments of these various groups and to assess the present adequacy of natural area protection in the state. Each of the 156 preserves is listed with its acreage, location, form and date of protection, ownership, administration, developments, management, general character, references and an address for further information. In addition, preserves are indexed according to county, ownership/administration and plant community types.

## ACKNOWLEDGEMENTS

A great number of persons provided assistance and encouragement throughout this project. In particular, I would like to thank my parents and friends who travelled with me throughout Michigan to visit nature preserves, and Dr. John Beaman, my major professor, who helped develop the project and offered continuous support. As members of my graduate committee, Dr. Harold Winters, Dr. Sylvia Taylor and Dr. Stephen Stephenson provided assistance on a variety of problems encountered. And finally, I am especially grateful to my husband, Donald Hielkema, who spent innumerable hours typing and proofing this manuscript.

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## INTRODUCTION

"Nature preserves...are not just for rocks and rills, birds, bees and trees. Primarily, they are for people. As cultural assets, they are at least as meaningful as zoos and botanical gardens, aquaria and planetaria. They differ in that, once destroyed, they cannot be replaced within a reasonable span of time, if at all. Everyone, whether aware of it or not, will continue to benefit from them at least indirectly. The mere existence of a system of small outstanding areas set apart from commercial exploitation tells something about the sensitivity of our society and its culture. They show that the richest country in the world can afford to recognize that man does not live by economics alone." (A. A. Lindsey, et. al., 1969)

Within the past decade, the importance of natural area preservation has gained national recognition. It is no longer considered a narrow cause, supported only by a handful of professional nature-lovers, but rather is recognized as a vital need by national politicians, eminent biologists, state administrators and professional and amateur naturalists. It has also emerged from the "anti-progress" image often associated with preservation in general, to constitute a rational, reasonable philosophy of natural heritage preservation, which, as Lindsey states, is ultimately a preservation for people.

The specific values of nature preservation have been enumerated by many authors (Leopold, 1966; Lindsey, et. al., 1969; Ohio and The Nature

Conservancy, 1977; Gunter, 1978; Reveal and Broome, 1979). Presented below is a synopsis of these values.

Rationales for nature preservation have been divided into two categories: ecocentric and anthropocentric. Perhaps the only truly ecocentric argument is that every living species has an inherent natural value and a right to compete for survival without human interference; and that we, as the dominant species, are responsible for protecting others from unnecessary or inadvertent destruction.

Rationales which are wholly or partly anthropocentric include the following:

Preservation of species in their habitats--

- for their genetic value as potential food, drug, fuel and chemical producers;
- to discover and study natural survival mechanisms, including forms of communication, underwater breathing, water economy, etc.;
- to discover and study organisms which can monitor environmental pollution.

Preservation of ecosystems--

- as baseline systems from which to monitor the effects of human manipulation on natural systems;
- for the study of natural ecosystem dynamics to help us design efficient, effective artificial systems;
- for the study of natural ecosystem dynamics to help us maintain the balance of nature and avoid self-destruction;
- to discover and study natural biological control mechanisms;
- for the understanding and appreciation by future generations of natural features and the intricate beauty of natural ecosystems;



to preserve for future generations our nation's outstanding natural diversity;  
to provide a necessary diversity of human environment for ourselves and our children.

Clearly, from a relatively small sacrifice on our parts--the setting aside from "development" of exemplary natural features--we stand to gain considerable benefit.

Presented herein is an inventory of areas in Michigan which have been set aside in this way, explicitly for the long-term protection of the natural features therein. The intended uses of this inventory are twofold. First, it should provide a basis upon which we can assess the adequacy of our preservation efforts thus far--i.e., which natural features and ecosystems have yet to be protected? Secondly, it should be a working document whereby potential investigators may locate outstanding outdoor laboratories for studies which, in turn, will form a basis for the long-term observation of natural processes in ecosystems free from human alteration.

## II.

### DEFINITION OF NATURE PRESERVE

For the purposes of this study, a "nature preserve" is defined as an area set aside by its owner solely to preserve the natural ecosystem, or unique features thereof, indefinitely in a natural state, for scientific study and/or as a public monument. Areas intended primarily for outdoor education (without special natural area dedication), and those open to manipulative research which manifestly alters the natural ecosystem are excluded from this definition.

Two categories of nature preserves are recognized herein:

- 1) Natural Area Preserve: The natural ecosystem is allowed to maintain itself without human interference. Developments exist only to provide public access and interpretation, and to protect fragile features from visitor damage.
- 2) Managed Preserve: Management is allowed in order to protect and maintain an unusual species, group of species, or biotic community that would not otherwise persist under natural conditions. This does not include areas managed primarily to maintain unnaturally large populations of game animals; i.e., natural features must be preserved for their inherent natural value and not for economic or recreational value.

The difference between a natural area and a nature preserve must be clearly understood at this point. A natural area has been defined as an area "containing an aquatic or terrestrial ecosystem that has essentially retained, or recovered, its primitive conditions, or is a least disturbed known or available example of a type of natural ecosystem" (Natural Areas

Association, 1979). This definition functions as a criterion for the selection of areas to be preserved. The present study, however, is concerned only with areas which are already afforded protection. It has therefore been unnecessary to determine whether each would qualify under the definition of a natural area; those decisions, right or wrong, have already been made.

One of the major requirements, then, for a nature preserve is that its protection be reasonably assured for the indefinite future. For areas included in the present study, this has been accomplished in one of the following ways:

- 1) Ownership (or long-term lease) by an organization dedicated to nature preservation;
- 2) deed restriction or similar legally-binding agreement with the owner; or,
- 3) formal dedication through administrative or legislative process.

Organizations whose mere ownership confers nature preserve status include The Nature Conservancy, Michigan Audubon Society, Michigan Nature Association and Long Lake Preservation Association. These groups have as a basic (usually primary) philosophy the preservation of nature for scientific study and for inherent natural values. Protection of preserve properties owned by these organizations need not be specifically documented, since organizational charters ensure that all efforts will be directed toward nature study and preservation.

Deed restrictions must be explicit, and generally include reverter clauses which activate if conditions are not met. Another legal means of ensuring preservation by legal agreement is the dedication of private property according to state law, i.e., the Wilderness and Natural Areas

Act. In such a case, the management requirements for dedicated areas are legally binding upon the owner. (While no cases of such dedication presently exist, the Act does provide for it as a legitimate means of legal preservation.)

The concept of legal obligation is of primary importance here, since Federal and state governments often designate privately-owned natural areas or landmarks for the purpose of simply recognizing natural values and encouraging preservation. These types of areas--which include National Natural Landmarks, Wild and Scenic Rivers, etc.--are not assured of preservation unless they are owned by the government which so designates them, as there is no legal or administrative recourse, should the private owner fail to comply with suggested use restrictions.

Legislative or administrative dedication of nature preserves includes the broadest variety of preservation mechanisms. Dedications under state and Federal laws, such as Michigan's Wilderness and Natural Areas Act or the Federal Wilderness Act, comprise the bulk of these preserves. (National Parks, while they include some truly extraordinary examples of natural ecosystems, exist primarily for public recreation, and are developed for such as the Park Service deems necessary.) Additionally, both state and Federal governments designate preserves administratively, as will be detailed in the following chapter. Other administrative units, such as universities, local governments and nature centers, may also resolve to create preserve property.

In some cases, although a property may be managed as a preserve, no formal statement of intent has been made by the owner or managing agency. This may reflect a desire to maintain other use options or merely a satisfaction with the status quo, which may seem to provide sufficient

protection. In either case, the importance of ensuring preservation for the indefinite future is clearly not emphasized by the owner, and these areas should not be recognized as preserves. (Many such areas encountered in this study are included in Appendix F.)

As with most definitions, the one presented herein is subject to a degree of interpretation, and is therefore not foolproof. For example, nature centers are not considered to be nature preserves (unless specifically designated and managed as such by the owner), since their primary purpose is outdoor education. However, Seven Ponds Nature Center, owned and operated by the Michigan Audubon Society, is not only a nature education facility, but moreover, an Audubon Sanctuary. I have therefore made the somewhat subjective decision to include it as a nature preserve.

In order that no areas which deserve inclusion under another's judgement be wholly neglected, I have included an annotated list of areas with ambiguous status in Appendix F. Also included in that listing are areas with partial or informal protection which need work to assure their long-term preservation.

### III.

#### PRESERVATION ORGANIZATIONS

A number of organizations and government agencies have helped establish Michigan's nature preserves. Although they share many goals, the different methods and accomplishments of each merit individual attention.

##### Michigan Natural Areas Council

The Michigan Natural Areas Council stands apart from all other state preservation organizations in that it does not hold any land. Its activities are rather directed toward the discovery and evaluation of natural areas as potential nature preserves. The Council may ultimately recommend that a landowner "dedicate" his or her property.

The Council originated in 1949 as a committee of the Michigan Botanical Club and became an independent organization in 1951 (Thompson, 1976). It was (and still is) composed of professional scientists, knowledgeable amateurs and avid conservationists. Early work focused on state lands, and dedications resulting from the Council's recommendations included portions of Wilderness State Park, Highland Recreation Area, Tahquamenon Falls State Park and the Porcupine Mountains.

Several categories of nature preserves have been designated. Natural Area Preserves are to receive maximum protection, with only simple foot trails for access. The construction of interpretive aids is allowed in Nature Study Areas. Scenic sites are intended to protect features of scenic beauty for public enjoyment. Lastly, any or all of the above may be incorporated into a Nature Reservation, together with buffer zones

and maintenance facilities. Two additional classes include the Nature Research Area--intended primarily for scientific research and not generally open to the public--and the Managed Tract. The latter was created to allow for environmental manipulations necessary to maintain successional plant communities or unusual wildlife species (Thompson, 1976).

Through the Council's efforts, numerous dedications, totalling nearly 100,000 acres, have been made in each category on both public and private lands. Among them are 17,700 acres in the Huron Mountains, 46,246 acres in the Porcupines, 17,184 acres in Tahquamenon Falls State Park, 2029 acres on Bois Blanc Island and 179 acres in Warren Woods, Berrien County.

Since the enactment of state nature preserve legislation in 1972 (discussed below), the Council's influence on dedication of state lands has been substantially diminished. Dedication is now a lengthy administrative process in which the Council has no special input, with much of its former influence relegated to the Wilderness and Natural Areas Advisory Board. Nonetheless, it continues as an independent scientific advisor and frequently recommends state-owned land for preservation, much of which is eventually dedicated.

#### State of Michigan

Natural area preservation by Michigan's Department of Natural Resources (DNR) has been strongly influenced by the Michigan Natural Areas Council. In 1950, Percy J. Hoffmaster, then director of the Department of Conservation, called for the assistance of a citizen organization to survey state lands and recommend for possible dedication those areas possessing unusual natural features or scenic sites (Thompson, 1976). The subsequently-

formed Council responded with reports on some very choice natural areas. As a consequence of this teamwork between the DNR and the Council, approximately 70,000 acres were dedicated by 1955 in four major state parks (Wilderness, Highland, Tahquamenon and Porcupine Mountains). Numerous smaller dedications followed, so that in 1970, a total of 18 state-owned areas had received nature preserve status by resolution of the Conservation Commission.

In 1972, the scene of nature preservation in Michigan changed significantly with the passage of the Wilderness and Natural Areas Act (Act 241, P.A. 1972). The statute provides for the formal, legal dedication of nature preserves by the state. Under the Act, a Wilderness and Natural Areas Advisory Board, composed of seven citizens of varying backgrounds, recommends to the DNR a potential Wilderness or Natural Area. The DNR then reviews the proposal, after which it is submitted to legislative committee for approval. Finally, the Natural Resources Commission, following a public hearing, makes a final ruling to dedicate the proposed area. Proposals for dedication may also be submitted to the Natural Resources Commission by private citizens. The Act provides for the dedication of both state and private lands. Dedication under this statute represents the strongest legal protection available for nature preserves in Michigan.

The Act defines three preserve categories. Wilderness Areas must be largely undisturbed tracts of at least 3000 acres; Natural Areas must have a natural character or features of special natural value, but need not be undisturbed. Wild Areas are similar to Wilderness Areas but cover fewer than 3000 acres. The Wilderness and Natural Areas Advisory Board has also designated three subtypes within the category of Natural Area;



these are Scenic Sites, Nature Study Areas and Research Natural Areas, adopted from the Michigan Natural Areas Council definitions.

Since the passage of the Act, twelve of those areas previously dedicated by the Natural Resources Commission have been formally rededicated, and three additional sites have been newly dedicated. Of the six tracts not yet rededicated, three are in process and one has been incorporated into Sleeping Bear National Lakeshore. The remaining two (Algonac State Park and Tobico Marsh) require management to maintain important natural features, and although the Act requires that a dedicated area "be maintained or restored so as to preserve its natural values", this has not yet been construed to allow management aimed at perpetuating successional ecosystems or wildlife habitat.

The state is presently initiating a Natural Heritage Program in cooperation with The Nature Conservancy. This will be discussed in more detail later.

#### The Nature Conservancy

The Nature Conservancy is a national organization committed to the preservation of natural diversity. Its earliest involvement in nature preservation in Michigan was through the Michigan Natural Areas Council, which then served as the official representative of The Nature Conservancy in the state.

More recently, the Conservancy has developed an independent program through field representatives assigned to Michigan. One of its primary functions has been to assist other conservation organizations in land acquisition projects. Not all such acquisitions have become nature preserves, but approximately ten have been accorded protective status, and

one has been recommended for Federal Wilderness designation. The Conservancy also maintains its own system of preserves, presently consisting of twelve tracts acquired through purchase and donation. In addition, six prairie sites adjacent to AMTRAK railroad lines are being leased by the Conservancy to protect and maintain the plant communities therein.

As previously noted, the Conservancy and the DNR are together initiating a Natural Heritage Program which will be discussed later.

### U.S. Government

The nature preservation activities of the Federal government have been described in detail by The Nature Conservancy in Volume I of Preserving Our Natural Heritage (1977). Presented below is a synopsis of the three primary means by which the U.S. government has created nature preserves in Michigan.

#### National Wildlife Refuges

National Wildlife Refuges represent the Federal government's earliest involvement in nature preservation in the state, with the establishment of Lake St. Clair National Wildlife Refuge in 1934, followed by the 95,455-acre Seney Refuge in 1935. Later designations included Shiawassee, Huron Islands, Michigan Islands and Wyandotte National Wildlife Refuges.

Although intensive management is carried on in the two major refuges--Seney and Shiawassee--the overriding goal is the preservation of natural diversity, particularly for birds and mammals. In the 1970 Wildlife Refuge Handbook #4, the priority objectives of the Refuge System are stated as follows:

- Objective #1: To assure the survival in a natural state of each of this Nation's plant and animal species;
- Objective #2: To assure the continued availability of habitat capable of supporting migratory bird populations at desired levels;
- Objective #3: To demonstrate both optimizing and maximizing practices of wildlife and wildlands management, including demonstrations of reconciling wildlife needs with human modifications of traditional habitat;
- Objective #4: To expand understanding and appreciation of wildlife, wildlands ecology, and man's role in his environment (U.S. Department of Interior, 1970).

These goals, though certainly desirable, are also extremely diverse, and pose a challenge to successful management. For this reason, numerous studies have been conducted within the last decade to assess the effectiveness of the National Wildlife Refuge System in meeting its goals and to periodically redefine and augment those goals. The most recent of these studies appeared in April, 1979, and is presently being implemented by the Fish and Wildlife Service.

Although management for economic benefit does occur in National Wildlife Refuges, it is allowed only when "demonstrably compatible with Service objectives to preserve, protect and enhance wildlife habitat." Similarly, although wildlife production is a stated goal of many refuges, the Service states that "refuges will not be managed primarily to produce game species, but that sound, scientific wildlife management will produce populations normally able to sustain reasonable consumptive use" (National Wildlife Refuge Study Task Force, 1979).

### Natural Area Designations

Since 1927, Federal land management agencies from the National Park Service to the Air Force have cooperated to develop a system of Research Natural Areas. The two primary goals of the program have been "to preserve a representative array of all significant natural ecosystems and their inherent processes as baseline areas; and to obtain through scientific education and research, information about natural system components, inherent processes, and comparisons with representative manipulated systems" (Federal Committee on Ecological Reserves, 1977).

Informal coordination of these agencies' activities was initiated in 1966 by the Federal Committee on Research Natural Areas. This effort was formalized in 1974 by the National Science Foundation and the Council on Environmental Quality, which formed the Federal Committee on Ecological Reserves. With a membership of seventeen Federal agencies, the Committee has promulgated a charter stating objectives and management policies for Research Natural Areas (Federal Committee on Ecological Reserves, 1977).

In Michigan, eight tracts, comprising 5981 acres, have been designated as Federal Research Natural Areas. (McCormick RNA, covering 3675 acres in Marquette County, is the largest Research Natural Area in the eastern United States.) These areas lie in Ottawa National Forest, Seney National Wildlife Refuge and Isle Royale National Park, and are managed to preserve the natural ecosystems without human interference. Environmental manipulation is allowed only to simulate natural processes (e.g., fire). No permanent improvements such as roads and buildings are allowed, and public use is discouraged (Federal Committee on Ecological Reserves, 1977).

In addition to Research Natural Areas, the Fish and Wildlife Service also designates Public Use Natural Areas. Selection criteria are similar

to those for research areas, but the former must be able to sustain limited public use without endangering the natural ecosystem (Department of Interior, 1970). Two such areas have been designated within Seney National Wildlife Refuge.

### Wilderness Designations

In 1964, Congress passed the Federal Wilderness Act to preserve large tracts of land in their natural states for the non-consumptive use and enjoyment of the American people. Since the law's enactment, over 100 tracts in the United States have received Wilderness designations, including four in Michigan.

To qualify for such designation, an area must be over 5000 acres (or an island), in Federal ownership, and "retaining its primeval character and influence, without permanent improvements or human habitation" (16 U.S.C. 1131). Once an area has received Wilderness designation (by an Act of Congress), the managing agency is responsible for maintaining it in a wilderness condition. No roads, structures, motorized vehicles or commercial enterprises are allowed, except where absolutely necessary to administer an area.

The development of the National Wilderness Preservation System, as mandated by the Wilderness Act, is an ongoing project, with new areas being added yearly. One of the most recent large-scale efforts to evaluate Federal lands for potential Wilderness is the RARE II (Roadless Area Review and Evaluation) program. In Michigan, eight areas, totalling 56,495 acres, were recommended for Wilderness designation by the U.S. Forest Service as a result of RARE II. This effort will be discussed in greater detail under "Ongoing and Prospective Programs".

In addition to the three primary means of establishing nature preserves on Federal lands (as cited above), special protective designations are occasionally included in management plans to effectively create preserves. Two examples of this exist in Michigan. One, the Botanical Zone in Syl-  
vania Recreation Area (Ottawa National Forest), was designated for "pre-  
servation and maintenance of the natural environmental values for the  
purpose of scientific study, public education and inspiration" (U.S.  
Department of Agriculture, 1968). Accordingly, manipulation and removal  
of vegetation is not permitted, and development is limited to foot trails.  
Another similarly designated Federal area is the Nawaygo Prairie Ecologi-  
cal Study Area, in which a tract of remnant dry prairie had been preserved  
in Manistee National Forest.

The Federal government has also designated seven National Natural Land-  
marks in Michigan. These are Dukes Research Natural Area, Haven Hill Natural  
Area, Newton Woods, Strangmoor Bog, Tobico Marsh, Toumey Woodlot and Waterloo  
Black Spruce Bog. Although it must be remembered that registration as a  
National Natural Landmark bestows no inherent protection, the nationally-  
recognized importance of these areas merits notation here.

#### Michigan Nature Association

To this date the Michigan Nature Association (MNA) is the only wholly  
in-state citizen group (i.e., without national affiliation) which owns  
and maintains a system of nature preserves. The MNA emerged in the early  
1950's from a bird-study group in Macomb County. Its initial activities  
were local and primarily educational in character. In 1958, the organiza-  
tion redirected its goals toward preserving natural areas in southeastern  
Michigan, and after unsuccessfully seeking the help of other state

conservation groups, the Association embarked on a program to independently acquire and protect natural areas, first in southeastern Michigan and later throughout the entire state. Its primary stated purposes in this endeavor have been "to preserve examples of Michigan's native plants and wildlife" through acquisition and maintenance of preserves, "and to carry on a program of natural history study and conservation education" (Michigan Nature Association, 1977).

The Michigan Nature Association established its first preserve, Red Wing Acres, in 1960 and has since accumulated over 55 preserves (more than any other single organization in Michigan), comprising some 2900 acres. Recent activities have been particularly geared toward preserving (through acquisition) habitats of endangered, threatened and rare plant species in Michigan.

#### Michigan Audubon Society

The Michigan Audubon Society was the first citizen organization in the state to own and administer nature preserve property. Bernard W. Baker of Marne, Michigan donated nearly 500 acres to the Society in 1941, to be used primarily as a Sandhill Crane refuge (Thompson, 1973). The Society now holds seven sanctuaries, totalling 2140 acres, acquired largely through donation. An eighth area, Whitefish Point Bird Observatory, is leased by Audubon from the U.S. Coast Guard.

All sanctuaries are managed as nature preserves with occasional manipulation for wildlife habitat and varying degrees of development for public access and education. Seven Ponds Nature Center features an educational building and prairie reconstruction, but the remainder of its 243 acres remains undeveloped except for foot trails.



Various public and private organizations hold nature preserve property in relatively small quantities. A number of universities, for instance, have designated ecological preserves or nature research areas to be preserved in their natural states. In fact, the first formally-designated nature preserve in Michigan (now known as the Harvey N. Ott Preserve) was established by Battle Creek College in 1926.

County, township and municipal governments represent another category of nature preserve property-holders. Not only are such local units of government often selected to assume ownership and administration of areas acquired by conservation organizations (e.g., The Nature Conservancy), but these agencies also frequently acquire valuable, locally-known areas on behalf of the public. A notable example of this is the Grass River Natural Area, an 830-acre parcel containing unusual riparian habitats, which has been acquired piecemeal by Antrim County to assure its preservation.

Local citizen groups are also sometimes active in natural area preservation. (The very influential Michigan Nature Association began as just such a group.) Several local citizen conservancies of recent origin include the Independence Land Conservancy, Little Traverse Conservancy and the Long Lake Preservation Association. Such organizations can be highly effective within a small area, winning considerable local support for preservation of scientific as well as educational and scenic values.

A fine example of this is the Long Lake Preservation Association, which has declared its primary purposes to be "1) Natural history study and conservation education; and 2) Acquisition, maintenance, and protection of nature sanctuaries, natural areas, plant and animal reserves and



other environmentally critical areas situated in and about Long Lake and elsewhere in Long Lake and Green Lake Townships, Grand Traverse County..." (Long Lake Preservation Assoc., undated). Upon these principles, the Association has successfully completed its first project--the acquisition of a thirteen-acre island in Long Lake with very high "development" value.

Of the few privately-owned nature preserves in Michigan, the Huron Mountain Club Nature Research Area is by far the largest. It covers 17,700 acres in northern Marquette County, and was formally set aside by the Huron Mountain Club in the early 1960's (although the property has been owned and left largely undisturbed by the Club since the early 1900's).

Note: There has been no attempt to include nature preserves owned by public school systems, which, although probably numerous, are scattered throughout the state and usually receive only informal protection.

## DESCRIPTIONS OF PRESERVES

## Sources of Information

Of the 156 preserves listed herein, I was able to visit approximately half. Since it was not feasible to visit all, however--or to gather all necessary information in one visit--I have relied heavily on a number of sources judged reliable.

Michigan Natural Areas Council reports furnished a wealth of information about the topography and vegetation of many areas. Department of Natural Resources records were consulted for specifics on state preserves--e.g., names, dates, acreages and locations. The Michigan Nature Association Sanctuary Guide provided diverse, though patchy, information about MNA's preserves. The Nature Conservancy records were also useful for the many preserves which TNC has helped to acquire, and the master plans which exist for most preserves administered by the Conservancy served as excellent references.

In addition, numerous miscellaneous publications and previous inventory attempts were helpful in many cases. However, since no written sources offered the entire spectrum of information needed for an inventory of this scope, it was necessary to contact many individuals on a personal basis through phone calls, letters and visits. (Many personal contacts and miscellaneous publications not cited in the descriptions are listed in Appendix G.)

An attempt was made to systematically inventory university-owned nature preserves through distribution of letters and questionnaires to nearly ninety colleges and universities throughout Michigan. However, since only sixteen replies were received, this method did not contribute

substantially to the overall project.

### Explanation of Descriptions

In the subsequent section, each nature preserve is systematically described. The information included in these descriptions represents basic facts about each preserve and details thought useful to potential visitors and investigators. Each category of information presented is explained below.

**DESIGNATION:** The official name of the preserve, as designated by the owner, is given. Other commonly used names or previous names are listed in parentheses. (For cross references to closely associated preserves, see Appendix A.)

**TYPE:** Two nature preserve types were designated for this study--natural area preserves and managed preserves--and have been defined previously under "Definition of Nature Preserve". Several preserves include both natural and managed portions; in such cases, both designations are listed.

**ACREAGE:** Present size is given to the nearest acre. For areas of less than ten acres, tenths are included, if known. (Acres have been chosen over hectares because acres are still the standard legal unit of land measurement in Michigan.)

**LOCATION:** No effort has been made to give directions to any preserves; proper authorities should be contacted for access permission and directions (see ADDRESS below). Location is given by section, township and county if ten or fewer sections are involved, and by township and county only, for preserves covering more than ten sections. If a preserve is

part of a larger designated administrative unit, for instance, a state park or national forest, the name of that unit is given.

**PROTECTION:** This indicates the form of protection given a preserve. Protection must fall into one of the three categories listed earlier under "Definition of Nature Preserve". Actual documents of protection were frequently not obtainable for first-hand inspection; in such cases, the form of protection listed is that reported by the owner or administrator.

**DATE OF PROTECTION:** This indicates the date at which the recognized form of protection was implemented. The day and month are given, if known; a year is cited in all cases, though in a few, it may be noted as approximate. In some instances, enlargement or reduction of the originally-dedicated parcel may have occurred. No attempt has been made to recount such alterations.

**OWNERSHIP:** The owner listed is the party which holds title to the property.

**ADMINISTRATION:** The administrator of a preserve is the party which makes policy decisions and therefore controls its use and management.

**DEVELOPMENTS:** Types of developments listed include foot trails, structures, service roads and other relatively permanent modifications to the environment. In a very few preserves, camping and/or picnic facilities are noted. Although, strictly speaking, these would fall outside the actual preserve boundaries (by definition of a nature preserve), they may be geographically within a preserve and included for administrative purposes.

**MANAGEMENT:** Included under this designation are ongoing environmental alterations with relatively short-term visible effects. All are intended

to benefit an important species, group of species or biotic community. Examples of management practices recognized include burning, mowing, cutting and planting for wildlife, and water level control.

GENERAL CHARACTER: I have attempted to summarize the physical and biological features of each preserve. However, because such information is often of limited availability, these summaries differ considerably in specificity. Also, some of the information was necessarily extrapolated from maps (floristic and geomorphic), sketchy descriptions and brief visits, and therefore represents approximation rather than established fact.

Each characterization follows roughly the same form. First, a brief summary is given of geomorphology, including dominant landforms and special features. Next, major plant communities are listed, and important species cited for each. Unusual floristic features are also noted, but threatened and endangered species are intentionally omitted. Since wildlife of preserves is often poorly reported and not generally observable in a short visit, it is most difficult to summarize. Where information is available, I have listed a representation of species present, omitting those of very wide distribution (e.g., rabbits, chipmunks, bluejays, etc.). If no information was found, it is so noted.

REFERENCES: This is not intended as a complete list of references, to account for all facts presented. References listed are only those which provide a more detailed account of physical and/or biological character.

ADDRESS: The party listed here should be contacted for specific locality information, access permission and answers to specific questions. Access permission should always be sought, unless a preserve is clearly open to

the general public. In any case, the managing agency should be consulted before scientific studies are initiated. This assures that use restrictions will be understood and followed, and that the owner is aware of and has access to any findings.

DESIGNATION: [illegible]

TYPE: [illegible]

# DESCRIPTIONS





DESIGNATION: Algonac State Park Sites

TYPE: natural area preserve/managed preserve

ACREAGE: 62

LOCATION: Sects. 27, 34 & 35, T3N, R16E, St. Clair Co.

PROTECTION: dedicated under administrative authority of Natural  
Resources Commission

DATE OF PROTECTION: 1970, March 12

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: none

MANAGEMENT: periodic mowing of prairie sites

GENERAL CHARACTER: These tracts lie on a low, sandy glacial lake plain of little relief. Four of the sites support mesic to wet prairie communities which include Andropogon gerardii (big bluestem), Andropogon scoparius (little bluestem), Liatris spp. (blazing-star) and Solidago spp. (goldenrod). The two remaining sites lie atop sandy ridges in the Park's western portion and are forested with Quercus spp. (oak), Prunus serotina (black cherry) and Carya ovata (shagbark hickory).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909

DESIGNATION: Allegan State Game Area Special Habitats

TYPE: natural area preserve/managed preserve

ACREAGE: 608

LOCATION: Sects. 26, 27, 34, 35 & 36, T3N, R15W, Allegan Co.

Allegan State Game Area

PROTECTION: special designation by Wildlife Division, Michigan DNR

DATE OF PROTECTION: 1974

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Wildlife Division

DEVELOPMENTS: none

MANAGEMENT: periodic burning of oak savannah

GENERAL CHARACTER: The preserve acreage consists of three separate tracts in the northwest portion of the State Game Area. One tract includes the south edge of Miner's Lake and surrounding marshland, which is dominated by Carex spp. (sedge), Calamagrostis canadensis (bluejoint) and Cladium mariscoides (twig rush). The adjacent forests are composed of Quercus spp. (oak) on the east, Larix laricina (tamarack) bog on the south and Acer rubrum (red maple) swamp on the west.

A second tract lies in the Kalamazoo River valley and supports a Thuja occidentalis (white cedar) swamp forest. Tsuga canadensis (hemlock), Pinus strobus (white pine), Larix laricina (tamarack), Fraxinus nigra (black ash) and Betula allegheniensis (yellow birch) are also common, with Lindera benzoin (spicebush) abundant in the understory.

Oak savannah (often misleadingly called "pine plains") dominates the third protected tract. Carex pensylvanica (sedge), Koeleria macrantha (junegrass) and Danthonia spp. (oatgrass) dominate an open



landscape with scattered individuals of Quercus velutina (black oak).

Common forbs include Lupinus perennis (lupine), Claytonia virginica (spring beauty), Lithospermum caroliniense (puccoon), Coreopsis lanceolata (coreopsis), Asclepias tuberosa (butterfly weed) and Liatris cylindracea (blazing star).

In addition to the wildlife species typical of these habitats, one finds wild turkey in the savannah (re-established), Canada warbler in the cedar swamp and spotted turtle in the marsh.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Wildlife Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Alta Warren Parsons Memorial Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sect. 2, T17N, R5W, Clare Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1976, December 17

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The Sanctuary includes frontage on Ferguson Lake, from which the land rises to the north. Springs in the lowland feed a stream which flows to the lake.

The upland is wooded with Populus grandidentata (bigtooth aspen), Quercus spp. (oak), Prunus serotina (black cherry) and Pinus strobus (white pine). The lowland supports a cedar swamp, and immediately bordering the northeast side of the lake is a floating bog mat of Carex spp. (sedge), Vaccinium macrocarpon (cranberry), Menyanthes trifoliata (bog buckbean) and Andromeda glaucophylla (bog rosemary).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Alton D. McGaw Memorial Plant Preserve

TYPE: natural area preserve

ACREAGE: 4.2

LOCATION: Sect. 13, T7N, R15E, St. Clair Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1976, December 27

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: This small preserve lies largely in a marshy ravine fed by springs in the adjacent slopes. Tsuga canadensis (hemlock) dominates the hillside, while the wettest area supports Caltha palustris (marsh marigold).

Wildlife of the preserve has not been reported.

REFERENCES:

Daubendiek, B.A. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Ann Arbor Wet Prairie

TYPE: managed preserve

ACREAGE: 5

LOCATION: Sect. 27, T2S, R6E, Washtenaw Co.

City of Ann Arbor

PROTECTION: resolution by Ann Arbor Parks and Recreation Commission

DATE OF PROTECTION: 1969

OWNERSHIP: City of Ann Arbor

ADMINISTRATION: Ann Arbor Department of Parks

DEVELOPMENTS: foot trail along railroad

MANAGEMENT: periodic burning

GENERAL CHARACTER: The property lies on the floodplain of the Huron River and is bisected by a small tributary. The Penn-Central Railroad grade forms its western boundary, of which the easternmost 17 feet are leased as part of the preserve.

A wet prairie community which occupies the low-lying floodplain consists of over 150 vascular plant species, including Silphium terebinthinaceum (prairie dock), Ratibida pinnata (yellow coneflower), Vernonia missurica (ironweed), Saxifraga pennsylvanica (swamp saxifrage) and Spartina pectinata (cordgrass). The upland railroad terrace supports a more typically mesic prairie flora in which Andropogon gerardii (big bluestem) and Sorghastrum nutans (Indian grass) dominate. Allium cernuum (nodding onion), Aureolaria flava (smooth foxglove), Liatris asper (blazing star) and Coreopsis tripteris (tall coreopsis) are among the other common species.

Wildlife of the preserve has not been reported.





## REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

Thompson, Paul W. 1970. A wet prairie community in Ann Arbor, Michigan. Mich. Acad. 2: 87-94.

ADDRESS: Ann Arbor Dept. of Parks  
P.O. Box 8647  
100 N. 5th. Ave.  
Ann Arbor, MI 48107



DESIGNATION: Anna Wilcox Memorial Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 45

LOCATION: Sect. 2, T3N, R12E, Macomb Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1975

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail system

MANAGEMENT: none

GENERAL CHARACTER: The Sanctuary is included in a clayey glacial lake plain of low relief. A stream crosses the southwestern corner of the property.

The preserve's southern 27 acres support a mixed hardwood forest. Liriodendron tulipifera (tuliptree) is an important component of this community, as are Quercus bicolor (swamp white oak), Fagus grandifolia (beech), Acer rubrum (red maple), Tilia americana (basswood) and Fraxinus americana (white ash). The northern 18 acres consist primarily of old-field associations. A marshy area supports such species as Thelypteris palustris (marsh fern), Lobelia kalmii (Kalm's lobelia) and Gentiana sp. (gentian).

Wildlife of the area has not been reported.

#### REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Bakertown Fen

TYPE: managed preserve

ACREAGE: 6.1

LOCATION: Sect. 34, T7S, R18W, Berrien Co.

PROTECTION: lease to The Nature Conservancy

DATE OF PROTECTION: 1978, December

OWNERSHIP: AMTRAK

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: periodic burning and brush removal

GENERAL CHARACTER: Bakertown Fen occupies a railroad right-of-way and includes considerable diversity, with communities ranging from mesic and wet prairie to fen. Dominants in the former are Andropogon gerardii (big bluestem), Sorghastrum nutans (Indian grass) and Carex stricta (sedge). Other common forbs include Phlox pilosa (downy phlox), Zigadenus glaucus (white camas) and Silphium terebinthinaceum (prairie dock).

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Barry State Game Area Special Habitat

TYPE: managed preserve

ACREAGE: 45

LOCATION: Sects. 10 & 15, T3N, R10W, Barry Co.

PROTECTION: special designation by Wildlife Division, Michigan DNR

DATE OF PROTECTION: ca. 1974

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Wildlife Division

DEVELOPMENTS: none

MANAGEMENT: periodic burning

GENERAL CHARACTER: A shallow "bowl" of sandy glacial outwash dominates the topography of this preserve. Two streams flow through the tract. Old-field and sand barren communities border the bowl, whose margin supports mesic prairie of Andropogon gerardii (big bluestem), Coreopsis tripteris (coreopsis), Ratibida pinnata (yellow coneflower) and Solidago spp. (goldenrod). In the more central wet prairie-fen, Spartina pectinata (prairie cordgrass), Calamagrostis canadensis (bluejoint) and Potentilla fruticosa (shrubby cinquefoil) dominate.

Among wildlife species of special interest are Henslow's and grass-hopper sparrows.

REFERENCES:

Schaddelee, L. Benton Harbor (personal communication).

ADDRESS: Michigan Dept. of Natural Resources  
Wildlife Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: Beaver Dam Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 40

LOCATION: Sect. 27, T42N, R1W, Mackinac Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1970, December 28

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Swamp and beaver ponds dominate this preserve, which lies on a glacial till plain. Components of the swamp forest include Populus spp. (aspen), Larix laricina (tamarack) and Abies balsamea (balsam fir). Alnus sp. (alder), Spiraea tomentosa (spiraea), Cornus stolonifera (red-osier dogwood), Myrica gale (sweet gale) and Salix spp. (willow) dominate the understory and thickets.

This preserve provides habitat for several uncommon bird species, including Wilson's snipe, hooded merganser, red-breasted nuthatch and olive-sided flycatcher. A number of mammals also inhabit the area, among them weasel, mink, otter and, of course, beaver.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Bernard W. Baker Sanctuary

TYPE: natural area preserve/managed preserve

ACREAGE: 897

LOCATION: Sects. 10, 14, 15 & 16, T1S, R6W, Calhoun Co.

PROTECTION: ownership by Michigan Audubon Society

DATE OF PROTECTION: 1941

OWNERSHIP: Michigan Audubon Society

ADMINISTRATION: Michigan Audubon Society

DEVELOPMENTS: foot trails, small lodge, 200-acre wildlife flooding

MANAGEMENT: maintenance of flooding water level, 20 acres planted for  
wildlife food, 50 acres mowed to maintain open habitat

GENERAL CHARACTER: The Sanctuary is situated on a low-lying till plain,  
with much of its acreage below the water table. Artificial water level  
control maintains Big Marsh Lake, a 200-acre impoundment averaging  
around 2 feet in depth.

Upland plant communities consist primarily of old fields and oak  
woodland. Two forest associations occur in the Sanctuary's lowland--  
Larix laricina (tamarack) swamp and hardwood forest. The latter is  
composed of Ulmus sp. (elm), Tilia americana (basswood), Fraxinus spp.  
(ash), Quercus spp. (oak), Acer spp. (maple) and Populus deltoides  
(cottonwood). The remaining lowland acreage is shared by shrub carr,  
open marsh and cultivated or mowed fields.

Deer, mink, muskrat, fox and raccoon inhabit the preserve.  
Among the many birds reported from the area are the Sandhill crane,  
yellow-billed cuckoo and ruffed grouse.

REFERENCES:

Reed, D. Michigan Audubon Society (personal communication).



ADDRESS: Michigan Audubon Society  
7000 N. Westnedge Ave.  
Kalamazoo, MI 49001



DESIGNATION: Besser Natural Area

TYPE: natural area preserve

ACREAGE: 134

LOCATION: Sects. 13 & 24, T33N, R8E, Presque Isle Co.

Alpena State Forest

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1966, January 14

OWNERSHIP: State of Michigan

ADMINISTRATION: Department of Natural Resources, Forestry Division

DEVELOPMENTS: foot trail, remnants of abandoned logging settlement

MANAGEMENT: none

GENERAL CHARACTER: The property's most outstanding geomorphic feature is its 4125 feet of frontage on Lake Huron, composed primarily of lime-stone gravel shore. About 500 feet of sandy shore and low dunes lie near the southern boundary, bordering a lagoon-type pond of nearly 2.5 acres.

The dominant vegetation on the tract is a forest of virgin Pinus strobus (white pine) and Pinus resinosa (red pine) intermixed with Thuja occidentalis (white cedar), Picea sp. (spruce), Abies balsamea (balsam fir), Populus spp. (poplar) and Betula papyrifera (paper birch).

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Michigan Dept. of Natural Resources  
Forestry Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: Betsy Lake Research Natural Area

TYPE: natural area preserve

ACREAGE: 14,919

LOCATION: T49N, R8W, Luce Co.; T49N, R7W, Chippewa Co.

Tahquamenon Falls State Park

PROTECTION: pending under Michigan's Wilderness and Natural Areas Act  
(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1954, August 13

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trail system south of Clark and Betsy Lakes

MANAGEMENT: none

GENERAL CHARACTER: The lowland portion of this preserve occupies the former bed of glacial Lake Algonquin, which is veneered with sand and clay. Fossil dunes and sandy beach ridges, oriented east-west, rise above this plain to heights of 10-40 feet. With drainage to the north-east slowed by differential post-glacial uplift and locally blocked by the scattered ridges, a patterned marshland or string bog has developed. The Munising moraine, a complex of knolls and depressions partly covered with eolian sand, arises immediately south of Clark Lake. At certain elevations on the moraine are beach terraces formed by the recession of Lake Algonquin.

Vegetation of the open marshland resembles that of typical bog-lakes. On a bed of sphagnum are commonly found Carex spp. (sedge), Rhynchospora spp. (beak-rush), Drosera rotundifolia (sundew), Eriophorum spp. (cotton grass), Sarracenia purpurea (pitcher plant) and



Calopogon tuberosus (grass pink), with scattered shrubs of Ledum groenlandicum (labrador tea), Chamaedaphne calyculata (leatherleaf) and Kalmia polifolia (swamp laurel) and stunted individuals of Larix laricina (tamarack). Riparian swamp communities of Ulmus sp. (elm), Fraxinus nigra (black ash), Salix spp. (willow) and Alnus rugosa (alder) occur along streams. The scattered fossil dunes and beach ridges are dominated by Pinus resinosa (red pine) and Betula papyrifera (paper birch). Bordering these ridges lie bog forests of Thuja occidentalis (white cedar), Larix laricina (tamarack) and Picea mariana (black spruce).

The morainal complex to the south is covered on its lower northernmost portion by a Pinus resinosa (red pine)-Betula papyrifera (paper birch) association on the knolls and bog or bog-forest communities in the intervening depressions. Farther south on the higher portion of the moraine, as the eolian sand veneer thins and drainage improves, the upland forest develops into a Tsuga canadensis (hemlock)-Betula allegheniensis (yellow birch)-Fagus grandifolia (beech)-Acer saccharum (sugar maple) association. The lowland forests in this area often consists of Tsuga canadensis (hemlock), Thuja occidentalis (white cedar) and Acer rubrum (red maple) on a bed of Sphagnum spp.

Wildlife of the area was not reported in the references consulted.

#### REFERENCES:

- Bergquist, S.G. 1930. Surface Geology of Luce County, Michigan. Mich. Acad. Sci. Pap. 14:437-452.
- Bergquist, S.G. 1936. The Pleistocene history of the Tahquamenon and Manistique drainage region of the Northern Peninsula of Michigan. Mich. Geol. Surv. Publ. #40.
- Braun, E.L. 1950. Deciduous forests of Eastern North America.



Hafner Press, N.Y.

Leverett, F. 1928. Moraines and shorelines of the Lake Superior basin.  
U.S. Geol. Surv. Prof. Paper #154.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Big Hand Road Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 5.4

LOCATION: Sect. 27, T5N, R15E, St. Clair Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1967, March 22

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: This preserve lies on the clayey former bed of glacial Lake Maumee, now shallowly dissected by stream action.

Covering the upland is an oak-dominated forest of Quercus rubra (red oak), Quercus alba (white oak), Prunus serotina (black cherry) and Pinus strobus (white pine). In lower, moister spots, Acer saccharum (sugar maple), Fagus grandifolia (beech) and Acer nigrum (black maple) predominate. Swamp forest occupies the lowest areas, and includes Tilia americana (basswood), Fraxinus americana (white ash), Acer rubrum (red maple) and Betula allegheniensis (yellow birch).

Wildlife of the area has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Big Stone-Cecil Bay Nature Study Preserve

TYPE: natural area preserve

ACREAGE: 1360

LOCATION: Sects. 25-27, 35 & 36, T39N, R5W, Emmet Co.

Wilderness State Park

PROTECTION: dedicated under administrative authority of Natural  
Resources Commission

DATE OF PROTECTION: 1951, April 19

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails, dirt road, cabin, trailside shelter

MANAGEMENT: none

GENERAL CHARACTER: The tract is topographically diverse, with high fossil dunes bordering glacial lake plain lowlands. Big Stone Creek flows through a portion of the area and is dammed to create a pond on its western extreme.

The lowland portion supports swamps of Thuja occidentalis (white cedar), Picea mariana (black spruce) and Larix laricina (tamarack). Mixed hardwood-conifer forests of varying composition and maturity occupy the dune ridges. These range from Populus spp. (aspen), Pinus spp. (pines) and Betula papyrifera (paper birch) to Fagus grandifolia (beech), Acer spp. (maple) and Tsuga canadensis (hemlock).

A number of uncommon bird and mammal species were reported in 1950, including magnolia warbler, Wilson's snipe, parula warbler, northern flying squirrel and water shrew.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other



reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Bird Island Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 2

LOCATION: Sect. 22, T29N, R9E, Alpena Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1976, April 2

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: This small limestone cobble island is sparsely vegetated, with Fraxinus pensylvanica (red ash) nearly the only tree species. Ring-billed gulls utilize the island heavily for nesting. Canada geese also frequent the island.

REFERENCES:

Holzman, R.W. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Briggs Memorial Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 40

LOCATION: Sect. 15, T17N, R2E, Gladwin Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, December

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Glacial lakebed sediments form the gentle topography of this preserve. A small stream passes through the tract. Much of the preserve is upland and supports a successional forest of Populus grandidentata (large-toothed aspen) and Betula papyrifera (paper birch). In lower areas, Ulmus americana (elm) and Fraxinus sp. (ash) become important.

Common birds of the preserve include wood thrush, several warblers, veery and ovenbird.

REFERENCES:

Daubendiek, B.A. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Brockway Mountain Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 78

LOCATION: Sect. 31, T59N, R28W, Keweenaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, October 29

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies very near the "nose" of Brockway Mountain, on its extreme eastern end. Here, the panoramic Middle Conglomerate gives way in a steep slope dropping 300 feet to the valley containing US-41.

Stunted Acer saccharum (sugar maple) and Populus tremuloides (quaking aspen) and numerous shrubs, including Rubus parviflorus (thimbleberry) and Shepherdia canadensis (sheepberry) dominate the upland and slope, while the valley supports mixed hardwoods and conifer swamp.

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1979. Brockway Mountain Nature Sanctuary. Mich. Nat. Assoc. Mount Clemens (leaflet).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Bullock Creek Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sect. 16, T13N, R1E, Midland Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, October 20

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: On this tract of former glacial lake plain, sandy ridges trend east-west through a marshy lowland. These ridges, along with the preserve's western upland portion, support open, patchy woods of Quercus rubra (red oak) and Pinus spp. (pine). Flanking these sandy ridges to the east are lowland Fraxinus (ash)-Quercus (oak) and Acer (maple)-Betula (birch) associations and marshes dominated by Vaccinium sp. (blueberry) and Carex spp. (sedge). An old-field community lies near the tract's southeastern corner.

Wildlife of the preserve has not been reported.

REFERENCES:

Daubendiek, B.A. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Calla C. Burr Memorial Plant Preserve

TYPE: natural area preserve

ACREAGE: 5

LOCATION: Sect. 12, T4N, R7E, Oakland Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1970

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve occupies a low triangle of land, the wetter portion of which supports a marsh of Carex stricta (sedge) and Typha angustifolia (cattail). On better-drained soil, wet prairie and fen elements comprise a community dominated by Sorghastrum nutans (Indian grass) and Andropogon gerardii (big bluestem).

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Cedar River Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sect. 36, T30N, R7W, Antrim Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1971, January 6

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve borders on the Cedar River and supports, adjacent to the river, a swamp of Thuja occidentalis (white cedar), Larix laricina (tamarack) and Betula allegheniensis (yellow birch). On higher ground, farther from the river, this gives way to a mosaic of Picea mariana (black spruce), Acer rubrum (red maple) and Betula papyrifera (paper birch).

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Cranbrook Nature Sanctuary

TYPE: natural area preserve/managed preserve

ACREAGE: 50

LOCATION: Sect. 15, T2N, R9E, Oakland Co.

PROTECTION: resolution by Cranbrook Board of Governors

DATE OF PROTECTION: 1969, December 11

OWNERSHIP: Cranbrook Institute of Science

ADMINISTRATION: Cranbrook Nature Center

DEVELOPMENTS: foot trails and shelter

MANAGEMENT: periodic burning of 6-acre prairie reconstruction

GENERAL CHARACTER: The preserve lies on a rolling interlobate moraine and includes frontage on Orchard and Upper Straits Lakes. A virgin forest of Quercus spp. (oak) and Carya ovata (shagbark hickory) dominates 20 acres, and is thought by many to constitute the finest example of oak-hickory forest in southern Michigan. Individual trees in this stand often exceed 36 inches dbh and are over 200 years in age.

Two unwooded communities also occupy the preserve, one, an early-succession old field, and the other a marsh of Typha latifolia (cattail), Salix spp. (willow), Cephalanthus occidentalis (buttonbush) and Cornus stolonifera (red-osier dogwood).

Wildlife of the preserve has not been reported in detail.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Cranbrook Institute of Science  
500 Lone Pine Rd.  
Bloomfield Hills, MI 48013



DESIGNATION: Crane Island Natural Area Preserve

TYPE: natural area preserve

ACREAGE: 230

LOCATION: Sects. 15-17 & 20-22, T39N, R6W, Emmet Co.

Wilderness State Park

PROTECTION: dedicated under administrative authority of Natural  
Resources Commission

DATE OF PROTECTION: 1951, April 19

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Crane Island (and/or Waugoshance Island) is geomorphically contiguous with Waugoshance Point and has low, broad gravel shores to the south with narrow dunes and a sandy shore to the north.

On the wet gravel shores, Primula mistassinica (bird's-eye primrose), Selaginella spp., Castilleja coccinea (Indian paintbrush) and Senecio pauperculus (ragwort) abound. A characteristic sand flora occupies the low dunes and pools. The island's narrow interior supports mixed hardwood-conifer forests in upland areas, and Thuja occidentalis (white cedar)-Picea glauca (white spruce) associations in the wetpannes.

Bear, beaver and water shrew are reported from the Park in general. Birds known to nest on Waugoshance Point--e.g., Piping plover, American bittern, spotted sandpiper and kingbird--undoubtedly also inhabit the island.



## REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Dayton Wet Prairie

TYPE: managed preserve

ACREAGE: 20

LOCATION: Sect. 16, T8S, R18W, Berrien Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1978, December

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: periodic burning

GENERAL CHARACTER: This low-lying tract, founded upon glacial outwash, consists primarily of shrub carr in which Cornus racemosa (gray dogwood), Cornus stolonifera (red-osier dogwood), Salix spp. (willow) and Viburnum lentago (nannyberry) predominate. Wet prairie occurs in scattered patches throughout the preserve. Common dominants of the prairie communities include Carex spp. (sedge), Andropogon gerardii (big blue-stem) and Typha sp. (cattail).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1979. Dayton Prairie Reconnaissance Report. Ann Arbor (xerox).

ADDRESS: The Nature Conservancy  
Michigan Field Office  
531 N. Clippert  
Lansing, MI 48912

DESIGNATION: Donahey Woods

TYPE: natural area preserve

ACREAGE: 22

LOCATION: Sect. 1, T49N, R14W, Alger Co.

PROTECTION: deed restriction

DATE OF PROTECTION: 1976, March 15

OWNERSHIP: Burnt Township

ADMINISTRATION: Burnt Township

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: Fronting on Lake Superior, the property consists of rolling, forested dunes bisected by a small stream.

The forest is a mature hemlock-northern hardwoods association dominated by Fagus grandifolia (beech), Acer saccharum (sugar maple), Betula allegheniensis (yellow birch) and Tsuga canadensis (hemlock), with a scattering of Betula papyrifera (paper birch), Picea glauca (white spruce) and Abies balsamea (balsam fir). A broad, sandy beach supports only a sparse growth of beach grasses, due to heavy use by campers from the adjacent township park.

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Burnt Township Supervisor  
Grand Marais, MI 49839



DESIGNATION: Dukes Research Natural Area (Northern Hardwood Research  
Natural Area)

TYPE: natural area preserve

ACREAGE: 233

LOCATION: Sect. 23, T46N, R23W, Marquette Co.

Hiawatha National Forest

PROTECTION: designation as Research Natural Area by U.S. Forest Service

DATE OF PROTECTION: 1974

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Forest Service, Hiawatha National Forest

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Situated on a glacial till plain, the tract possesses a gently-rolling topography. A small stream flows northward from the center of the property.

Vegetation consists largely of northern hardwoods, intermixed, in spots, with Tsuga canadensis (hemlock) and Pinus strobus (white pine). Several small stands of pure hemlock occur in the preserve's south-western portion. Old-growth swamps of Thuja occidentalis (white cedar) and Picea sp. (spruce) occupy some 47 acres and constitute a major feature of the preserve's vegetation.

Wildlife of the preserve has not been reported.

#### REFERENCES:

Federal Committee on Ecological Reserves. 1977. A directory of research natural areas on federal lands of the United States of America. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: North Central Forest Experiment Station  
1030 Wright St.  
Marquette, MI 49855



DESIGNATION: Erie Marsh Preserve

TYPE: natural area preserve/managed preserve

ACREAGE: 2168

LOCATION: T8S, R8E, Monroe Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1978, December 22

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: approximately 50% diked; several residences on south-west end

MANAGEMENT: planting of waterfowl food plants and water level control only in diked portion

GENERAL CHARACTER: This tract lies on the marshy edge of Lake Erie.

Artificial dikes are widely scattered through the area and rise above the natural topography which lies at or below the water table most of the time.

Salix spp. (willow) and Populus sp. (poplar) dominate the dikes; otherwise few trees are to be found. Important marsh species include Typha spp. (cattail), Polygonum sagittatum (buchwheat), Carex spp. (sedge) and Scirpus cyperinus (wool grass).

Bird life of the preserve is especially diverse. In addition to large numbers of migrating birds, waterfowl and shore birds are plentiful and include great blue heron and black-crowned night heron, with occasional bald eagle and snowy egret. The eastern fox snake is also present, in addition to common mammals such as fox, muskrat, deer and raccoon.



## REFERENCES:

The Nature Conservancy, Michigan Field Office. 1979. Erie Marsh  
Preserve master plan. Lansing (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Estivant Pines Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 200

LOCATION: Sect. 8, T58N, R28W, Keweenaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1973, August 17

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: Located on a formation of Lower Keweenawan volcanics, this tract supports a climax northern hardwood stand which has undergone very little lumbering. Acer saccharum (sugar maple) dominates the forest, but its most outstanding feature is a scattering of large Pinus strobus (white pine), reaching up to 150 ft. in height and 200 years of age. Other common tree species include Betula papyrifera (paper birch), Abies balsamea (balsam fir), Acer rubrum (red maple) and Quercus rubra (red oak). A low, swampy area on the southern portion of the tract supports a growth of Thuja occidentalis (white cedar), Picea mariana (black spruce) and Acer spicatum (mountain maple).

Mammals known from the area include bear and coyote, and pileated woodpecker, barred owl, snowy owl, northern wood warbler and goshawk are among the birds sighted there.

#### REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Fernwood Nature Study Area

TYPE: natural area preserve

ACREAGE: 18

LOCATION: Sect. 13, T7S, R18W, Berrien Co.

PROTECTION: public dedication by Fernwood, Inc.

DATE OF PROTECTION: 1968, October 6

OWNERSHIP: Fernwood, Inc.

ADMINISTRATION: Fernwood, Inc.

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: Fernwood's preserve property lies along the St.

Joseph River, where the latter bisects the Valparaiso Moraine. The Nature Study Area extends from atop the moraine to the flood plain of the river.

The entire area is wooded, with the upland forest dominated by Quercus spp. (oak) and Carya spp. (hickory), with some Sassafras albidum (sassafras). On the rather steep slope bordering the morainal upland, Fagus grandifolia (beech), Acer saccharum (sugar maple) and Prunus serotina (black cherry) appear as important species. The lower, gentler slopes and floodplain are wooded with Ulmus americana (elm), Fraxinus americana (white ash), Liriodendron tulipifera (tuliptree), Tilia americana (basswood), Platanus occidentalis (sycamore) and Salix spp. (willow).

Wildlife of the preserve has not been reported in any detail.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site, and other reports. Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Fernwood, Inc.  
1720 Range Line Rd.  
Niles, MI 49120



DESIGNATION: Fish Lake Bog Plant Preserve

TYPE: natural area preserve

ACREAGE: 15

LOCATION: Sect. 16, T3S, R6W, Calhoun Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1967, March 25

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on the south side of Fish Lake where a wooded upland gives way to a floating bog mat. The large open portion of the mat is dominated by Carex spp. (sedge), Chamaedaphne calyculata (leatherleaf) and Vaccinium macrocarpon (cranberry). Bordering the open mat is a zone of Larix laricina (tamarack) and Toxicodendron vernix (poison sumac).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Five Lakes Muskegon Plant Preserve

TYPE: natural area preserve

ACREAGE: 20

LOCATION: Sect. 12, T10N, R15W, Muskegon Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1977, May 12

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Shallow lakes with widely fluctuating water levels occupy this area of sandy former glacial lake bottom.

Backed by Quercus spp. (oak) forest, the sandy-mucky shores harbor a number of coastal plain disjunct species which appear as the lake dries during the summer. A few common species include Agalinis purpurea (gerardia), Fimbristylis autumnalis and Carex spp. (sedge).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Flowerfield Creek Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 20

LOCATION: Sect. 20, T4S, R12W, Kalamazoo Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, June 5

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Low, level glacial outwash forms the topography of this preserve. The area is entirely forested, supporting mostly Ulmus americana (elm) and Acer rubrum (red maple) swamp forest, with a central "island" of Fagus grandifolia (beech) and Acer saccharum (sugar maple).

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Flowering Dogwood Plant Preserve

TYPE: natural area preserve

ACREAGE: 10

LOCATION: Sect. 34, T3S, R6W, Calhoun Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1970, November 13

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: A flat, rich lowland here supports a diverse forest of mesic hardwoods. Cornus florida (flowering dogwood) is very common in the understory.

REFERENCES:

Holzman, R.W. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Grand Beach Prairie

TYPE: managed preserve

ACREAGE: 3.3

LOCATION: Sects. 17, 18 & 19, T8S, R21W, Berrien Co.

PROTECTION: lease to The Nature Conservancy

DATE OF PROTECTION: 1978, December

OWNERSHIP: AMTRAK

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: periodic burning and brush removal

GENERAL CHARACTER: This narrow strip of remnant prairie lies in a flat, sandy area bordered by Quercus spp. (oak) and Pinus sp. (pine) forests. Andropogon scoparius (little bluestem) dominates the tract, and is accompanied by Sorghastrum nutans (Indian grass), Lespedeza capitata (bush clover), Panicum depauperatum (starved panic grass) and Asclepias tuberosa (butterflyweed).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1978. AMTRAK prairie remnant reconnaissance report. Ann Arbor (xerox).

ADDRESS: The Nature Conservancy  
Michigan Field Office  
531 N. Clippert  
Lansing, MI 48912





DESIGNATION: Grand Island Research Natural Area

TYPE: natural area preserve

ACREAGE: 59

LOCATION: Sect. 15, T48N, R19W, Alger Co.

Hiawatha National Forest

PROTECTION: designation as Research Natural Area by U.S. Forest Service

DATE OF PROTECTION: 1977, January 12

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Forest Service, Hiawatha National Forest

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: This preserve is located on the north shore of Grand Island where the bedrock, Jacobsville sandstone, is buried by the sandy deposits of glacial Lake Nipissing. The only major bedrock outcrop is a 100-foot cliff bordering Lake Superior in the Tract's eastern portion.

A mature northern hardwood association dominates most of the preserve. The importance of Fagus grandifolia (beech) is notable, since it occurs here very near the northwestern limit of its range. Other important species include Acer saccharum (sugar maple), Acer rubrum (red maple), Tsuga canadensis (hemlock) and Betula allegheniensis (yellow birch). Two additional forest types present are a Tsuga canadensis (hemlock)-Thuja occidentalis (white cedar)-Abies balsamea (balsam fir) association along Echo Lake Creek, and a thin-soil community of northern hardwoods, Sorbus decora (mountain ash), Betula papyrifera (paper birch), Acer spicatum (mountain maple) and Pinus spp. (pine) on

the sandstone outcropping.

Wildlife of the preserve has not been reported in detail.

REFERENCES:

U.S. Dept. of Agriculture, Forest Service. 1974. Establishment report for Grand Island Research Natural Area within the Hiawatha National Forest. North Central Forest Experiment Station. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: North Central Forest Experiment Station  
1030 Wright St.  
Marquette, MI 49855

DESIGNATION: Grand Mere Nature Study Preserve

TYPE: natural area preserve

ACREAGE: 22

LOCATION: Sect. 31, T5S, R19W, Berrien Co.

PROTECTION: designation by Kalamazoo Nature Center

DATE OF PROTECTION: ca. 1969

OWNERSHIP: Kalamazoo Nature Center

ADMINISTRATION: Kalamazoo Nature Center

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on Nipissing dunes which formed atop a barrier beach in the mouth of the Grand Mere Embayment. The dunes are now wooded with a mature forest of Quercus velutina (black oak), Fagus grandifolia (beech) and Acer saccharum (sugar maple), with Tsuga canadensis (hemlock) on north-facing slopes.

Birds of the preserve include yellow-billed and black-billed cuckoo, great horned owl and hairy, downy and red-bellied woodpecker.

REFERENCES:

Tague, G.C. 1947. The post-glacial geology of the Grand Marais Embayment in Berrien County, Michigan. Mich. Geol. Surv. Publ. No. 45.

Grand Mere Association. 1973. Grand Mere. Kalamazoo Nature Center. Kalamazoo.

ADDRESS: Grand Mere Association  
Box 140  
Stevensville, MI 49127

DESIGNATION: Grass Island Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 3.3

LOCATION: Sect. 34, T31N, R8E, Alpena Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1977, June 17

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve consists of limestone rubble (Traverse Group) which supports a forest dominated by Fraxinus pensylvanica (red ash). Gulls utilize the weedy shores for nesting and various other water and shore birds frequent the island.

REFERENCES:

Holzman, R.W. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Grass River Natural Area

TYPE: natural area preserve

ACREAGE: 830

LOCATION: Sect. 1 & 2, T29N, R8W; Sect. 7, T29N, R7W, Antrim Co.

PROTECTION: deed restriction

DATE OF PROTECTION: 1971, September 2

OWNERSHIP: Antrim County

ADMINISTRATION: Antrim County Board of Commissioners

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: As its name implies, the preserve lies along the Grass River, which flows from Lake Bellaire into Clam Lake. The area was inundated post-glacially by Lake Algonquin and is veneered with sand deposited during that period.

Vegetating the river bottom are Vallisneria americana (eelgrass), Potamogeton spp. (pondweed), Anacharis canadensis (waterweed) and Ceratophyllum sp. (hornwort). A sphagnum-sedge mat immediately borders the stream, and supports such characteristic "bog" species as Sarracenia purpurea (pitcher plant), Drosera rotundifolia (sundew), Potentilla fruticosa (shrubby cinquefoil) and Decodon verticillata (swamp loose-strife). Backing this open area is a dense Thuja occidentalis (white cedar) swamp. An unusual expanse of sedge meadow occurs at the north end of the area as a peninsula extending into Lake Bellaire. Important species here include Carex aquatilis (sedge), Rhynchospora alba (beak-rush), Scirpus acutus (bulrush), Cladium mariscoides (twigrush) and Menyanthes trifoliata (bog buckbean).



The preserve also supports a diverse fauna, including otter, bear, osprey and bald eagle. Waterfowl which utilize the Grass River include whistling and mute swans, and a variety of ducks.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Soil Conservation Service  
1108 Grove St.  
Bellaire, MI 49615



DESIGNATION: Green River Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 40

LOCATION: Sect. 5, T30N, R6W, Antrim Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: ca. 1969

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The Green River flows through this preserve for approximately one-quarter mile. The adjacent land is low-lying and supports swamp forests of Thuja occidentalis (white cedar), Picea mariana (black spruce) and Tsuga canadensis (hemlock).

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Gull Island Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 12

LOCATION: Sect. 29, T31N, R10E, Alpena Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1969, January 18

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Gull Island is perched upon an outcropping of Alpena Limestone in Lake Huron. Vegetative diversity is limited--Fraxinus pensylvanica (red ash) and Thuja occidentalis (white cedar) account for most of the trees present. Much of the herbaceous flora consists of weedy species.

Of primary interest on this preserve is a herring gull colony of up to 2000 pairs which utilizes the gravelly shores for nesting. In addition, the great blue heron and black-crowned night heron occupy the island's central portion. Canada geese and ducks also utilize the island for nesting.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Harbor Island

TYPE: managed preserve

ACREAGE: 695

LOCATION: Sects. 1, 2, 11 & 12, T42N, R5E, Chippewa Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1979, November 9

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: one residence

MANAGEMENT: deer herd control to reduce browsing

GENERAL CHARACTER: Located just northeast of Drummond Island, Harbor Island is a horseshoe-shaped outcropping of the calcareous Niagaran cuesta. Marly marshes with occasional sandy beaches comprise the island's shoreline. Backing these shores are Abies balsamea (balsam fir)-Thuja occidentalis (white cedar) swamps, inland from which, the land rises about eighty feet to a high central backbone forested with Quercus rubra (red oak) and Acer saccharum (sugar maple).

Bald eagle, osprey and great blue heron have been known to nest on the island.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912

DESIGNATION: Harvey N. Ott Preserve

TYPE: natural area preserve

ACREAGE: 256

LOCATION: Sects. 3, 4, 9 & 10, T2S, R7W, Calhoun Co.

PROTECTION: resolution by County Board of Commissioners  
(originally dedicated by Battle Creek College)

DATE OF PROTECTION: 1926

OWNERSHIP: Calhoun County

ADMINISTRATION: Calhoun County Parks & Recreation Commission

DEVELOPMENTS: maintenance road, foot trails

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on pitted glacial drift and includes one lake and portions of two others. The area's most noteworthy geomorphic feature, an esker, extends for nearly one mile from the northeast to southwest corners, interrupted in only three places by stream action.

Old fields and upland hardwoods occupy the esker and the periphery of the property. Dominants of the latter community are Quercus spp. (oak) and Prunus serotina (black cherry). The large central portion of the preserve supports a lowland hardwood forest of Acer saccharum (sugar maple), Acer rubrum (red maple), Betula allegheniensis (yellow birch) and Ulmus americana (elm). Bog vegetation surrounds much of Brigham and Hall Lakes, with open sphagnum-sedge mats backed by Larix laricina (tamarack) swamp forest. Two open marshes support numerous grasses and sedges, as well as Utricularia sp. (bladderwort) and Potentilla palustris (marsh cinquefoil).

Wildlife of the preserve has not been reported.

## REFERENCES:

Catana, A.J. Jr. 1967. Forests of the Harvey N. Ott Preserve.  
Amer. Midl. Nat. 78:496-507.

Gilbert, W.J. 1954. The Harvey N. Ott Preserve of Albion College.  
Mich. Hist. Mag. 38:157-167.

Lindsey, A.A. and L.K. Escobar. 1976. Eastern deciduous forest Vol.  
2, Beech-maple region. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: Calhoun County Parks and Recreation Commission  
303 S. Grand  
Marshall, MI 49068

DESIGNATION: Haven Hill Natural Area

TYPE: natural area preserve

ACREAGE: 721

LOCATION: Sects. 19 & 24, T3N, R8E, Oakland Co.

Highland Recreation Area

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1954, August 13

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trail system

MANAGEMENT: none

GENERAL CHARACTER: An interlobate glacial moraine forms the hills of the tract, with glacial outwash lying to the south and east. Haven Hill Lake was created largely by a dam constructed at its outlet.

On the morainal upland, Quercus rubra (red oak), Quercus alba (white oak) and Carya spp. (hickory) predominate. On the low-lying outwash and in isolated, low, pitted areas of the moraine, a number of swamp forest types occur. Most extensive of these are hardwood swamps of Ulmus americana (elm), Fraxinus nigra (black ash) and Tilia americana (basswood). Conifer swamps include Thuja occidentalis (white cedar)-Betula allegheniensis (yellow birch) and Larix laricina (tamarack)-Toxicodendron vernix (poison sumac) associations. Several higher "islands" of Acer saccharum (sugar maple)-Fagus grandifolia (beech) forest are scattered on the outwash plain.

Mink, badger, red fox, opossum and a number of smaller mammals are

known from the preserve. Among the many birds reported are ruffed grouse, cerulean warbler, ovenbird, great horned owl, redpoll, snow bunting and turkey vulture. Haven Hill Lake is home to a sizeable flock of Canada geese.

REFERENCES:

Michigan Natural Areas Council, 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Helmerbrook Prairie Plant Preserve

TYPE: natural area preserve

ACREAGE: 10

LOCATION: Sect. 33, T1S, R8W, Calhoun Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: This tract lies on an extensive plain of glacial outwash. Locally, the property is bounded on the south by railroad tracks and slopes northward toward Helmer Brook which marks the opposite boundary.

A fen occupies the low ground near the stream. Dominants here include Cornus stolonifera (red-osier dogwood) and Solidago spp. (goldenrod). The tract's upland portion supports a mesic prairie in which Andropogon gerardii (big bluestem), Silphium terebinthinaceum (prairie dock) and Lespedeza sp. (bush clover) are common.

Wildlife of the preserve has not been reported.

#### REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Hemlock Research Natural Area

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sect. 2, T45N, R15W, Schoolcraft Co.

Seney National Wildlife Refuge

PROTECTION: designation as Research Natural Area by U.S. Fish &  
Wildlife Service

DATE OF PROTECTION: 1948, September 21

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney National Wildlife  
Refuge

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve's topography consists of sandy, gently-rolling glacial lakebed. Tsuga canadensis (hemlock) dominates most of the acreage and is joined in places by Betula allegheniensis (yellow birch).

Deer, bear and numerous small mammals and upland bird species are reported from the area.

REFERENCES:

Federal Committee on Ecological Reserves. 1977. A directory of research natural areas on federal lands of the United States of America. U.S. Govt. Printing Off. Washington D.C.

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883

DESIGNATION: Hoffmaster Natural Area

TYPE: natural area preserve

ACREAGE: 334

LOCATION: Sect. 36, T9N, R17W; Sect. 31, T9N, R16W, Muskegon Co.  
Sect. 1, T8N, R17W; Sect. 6, T8N, R16W, Ottawa Co.

PROTECTION: under Michigan's Wilderness and Natural Areas Act

DATE OF PROTECTION: 1979, December 13

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails, stairway to overlook

MANAGEMENT: none

GENERAL CHARACTER: The preserve is dominated by high, wooded stable dunes, incised with deep blowouts. A narrow strip of foredune borders the sandy Lake Michigan Shore. Forests of Acer saccharum (sugar maple), Fagus grandifolia (beech), Tsuga canadensis (hemlock) and Quercus spp. (oak) dominate the high dunes. On the foredune and blowouts, Calamovilfa longifolia (sand reed grass), Ammophila breviligulata (beach grass) and Prunus pumila (sand cherry) are common species.

Deer, red fox, skunk and woodchuck have been observed on the site.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Homer L. Hylton Memorial Plant Preserve

TYPE: natural area preserve

ACREAGE: 6

LOCATION: Sect. 27, T59N, R29W, Keweenaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, December 26

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: A companion property to the MNA's Keweenaw No. 2

Plant Preserve, this tract borders on Lake Superior with a rocky shore which supports the typical assemblage of boreal species, including Arctostaphylos uva-ursi (bearberry), Primula mistassinica (bird's-eye primrose) and Potentilla tridentata (cinquefoil). A shrub zone of Shepherdia canadensis (sheepberry), Juniperus communis (juniper) and Vaccinium spp. (blueberry) backs the open, rocky shore, and gives way to Abies balsamea (balsam fir), Picea glauca (white spruce) and Betula papyrifera (paper birch).

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Hoobler Natural Area (Pigeon River Preserve)

TYPE: natural area preserve

ACREAGE: 480

LOCATION: Sect. 1, T31N, R2W, Otsego Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1974, December 24

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: several dirt roads and foot trails

MANAGEMENT: none

GENERAL CHARACTER: A plain of sandy glacial outwash with low relief forms the topography of the preserve. The Pigeon River bisects the tract.

West of the river, conifer swamps of Thuja occidentalis (white cedar), Larix laricina (tamarack), Picea mariana (black spruce) and Abies balsamea (balsam fir) prevail. Locally unforested uplands occur centrally, while woodlands of pine and mixed hardwoods generally occupy the higher ground east of the river. Common dominants here include Pinus banksiana (jack pine), Pinus resinosa (red pine), Pinus strobus (white pine), Populus tremuloides (quaking aspen) and Betula papyrifera (paper birch).

Wildlife reported from the area include deer, beaver, bear, osprey, woodcock and partridge.

#### REFERENCES:

The Nature Conservancy, Michigan Field Office. 1978. Hoobler Natural Area master plan. Lansing (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Horner Woods

TYPE: natural area preserve

ACREAGE: 24

LOCATION: Sect. 12, T2S, R6E, Washtenaw Co.

PROTECTION: deed restriction

DATE OF PROTECTION: 1965, April 25

OWNERSHIP: University of Michigan

ADMINISTRATION: Matthaei Botanical Gardens

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The preserve occupies an upland portion of interlobate moraine with locally rolling topography. A mixed hardwood forest of Quercus alba (white oak), Quercus rubra (red oak), Carya spp. (hickory) and some Acer saccharum (sugar maple) dominates the tract. A shallowly-inundated depression is bordered by dead elms and a Cornus spp. (dogwood) thicket.

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Matthaei Botanical Gardens  
1800 N. Dixboro Road  
Ann Arbor, MI 48105



DESIGNATION: Huntington Memorial Plant Preserve

TYPE: natural area preserve

ACREAGE: 6

LOCATION: Sect. 7, T43N, R14W, Schoolcraft Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1969

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on a sloping upland near the Manistique River. Betula papyrifera (paper birch) and Acer spp. (maple) dominate the forest thereon.

Wildlife of the preserve has not been reported.

REFERENCES:

Holzman, R.W. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Huron Islands Wilderness (formerly Huron Islands National  
Wildlife Refuge)

TYPE: natural area preserve

ACREAGE: 147

LOCATION: T53N, R29W, Marquette Co.

PROTECTION: under Federal Wilderness Act

DATE OF PROTECTION: 1970, October 23

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney Nat. Wildlife Refuge

DEVELOPMENTS: inactive Coast Guard Station, lighthouse and boathouse

MANAGEMENT: none

GENERAL CHARACTER: The Huron Islands consist of thirty-one separate islands in Lake Superior and represent the fragmented remnants of a granitic cuesta of Precambrian age. Steep, 200-foot cliffs line the southern shores, while on the north, east and west, the dip of the rocks and glacial action have produced gentle slopes. Glacial striae are abundant on the exposed rock faces, and dikes lace the Precambrian granite.

Approximately two-thirds of the islands' area is forested; Abies balsamea (balsam fir), Thuja occidentalis (white cedar), Betula papyrifera (paper birch) and Pinus spp. (pine) are major forest constituents. Along the shores, only lichens, low shrubs and herbs can persist.

Herring gulls are abundant, with nesting concentrated on the sparsely-vegetated easternmost islands. Several other bird and small mammal species are present, including raven and snowshoe hare.

#### REFERENCES:

Bureau of Sport Fisheries and Wildlife. Undated. Huron Islands and



Seney Wilderness study areas. U.S. Govt. Printing Off.  
Washington, D.C.

Dutton, C.E. 1968. Summary report on the geology and mineral resources of the Huron, Seney, Michigan Islands, Green Bay and Gravel Island National Wildlife Refuges of Michigan and Wisconsin. U.S. Geol. Surv. Bull. No. 1260-I,J.

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883



DESIGNATION: Huron Mountain Club Nature Research Area

TYPE: natural area preserve

ACREAGE: 17,700

LOCATION: T51-52N, R27-29W, Marquette Co.

PROTECTION: dedication by Huron Mountain Club

DATE OF PROTECTION: 1961

OWNERSHIP: Huron Mountain Club

ADMINISTRATION: Huron Mountain Club

DEVELOPMENTS: dirt roads, logging trails, foot trails, scattered residences

MANAGEMENT: none

GENERAL CHARACTER: Along the shore of Lake Superior, a plateau of Jacobsville sandstone extends inland for about a mile. At this point, Precambrian granite emerges abruptly, and the relief increases to well over 1000 feet above Lake Superior. Steep slopes form a rugged topography, and a number of lakes occupy pockets between the hills, with the largest (Mountain Lake) covering 775 acres.

The forests of the Huron Mountains are largely undisturbed, most of the acreage having undergone early selective cutting only in accessible areas. Hemlock and northern hardwood associations predominate, varying only in the relative abundances of constituent species. Acer saccharum (sugar maple) commonly dominates the hardwood forests, and is often accompanied by Betula allegheniensis (yellow birch) and Tilia americana (basswood). Tsuga canadensis (hemlock) frequently forms pure stands on the mountain slopes. Pinus resinosa (red pine) thrives on the higher slopes and along the shores of mountain lakes.



The sandstone bluffs along Lake Superior support coniferous forests of Picea glauca (white spruce), Tsuga canadensis (hemlock), Abies balsamea (balsam fir) and Pinus strobus (white pine) with strong boreal affinities. Where dunes front on Lake Superior, they commonly support Pinus banksiana (jack pine) forests rich in lichens.

Successional forests of Acer spp. (maple), Populus spp. (aspen) and Betula papyrifera (paper birch) occupy cut-over areas, which comprise about one-quarter of the total preserve acreage. Old burn sites support forests of Betula papyrifera (white birch), Populus grandidentata (large-toothed aspen), Acer spp. (maple) and Tsuga canadensis (hemlock).

Bogs are of infrequent occurrence in the region. Two tracts of mature, forested bog--composed of Picea mariana (black spruce), Larix laricina (tamarack) and Thuja occidentalis (white cedar)--lie near Lake Superior, and a floating bog mat borders Pony Lake.

Among the animals present in the Huron Mountains, porcupine, flying squirrel, bear, beaver and otter are fairly common. The grey squirrel, cottontail and raccoon reach their northern distributional limits in the Hurons. Many common predator species were, however, eliminated in the club's early days, as were moose and caribou. Characteristically boreal birds, including the olive-sided flycatcher, Canada jay, spruce grouse, black-bearded woodpecker, raven and bald eagle also occupy the preserve.

#### REFERENCES:

- Braun, E.L. 1950. Deciduous forests of eastern North America. Hafner. New York.
- Hagenah, D.J. 1963. Pteridophytes of the Huron Mountains, Marquette County, Michigan. Mich. Bot. 2:78-93.





Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

Wells, J.R. and P.W. Thompson. 1976. Vegetation and flora of the Huron Mountains. Occ. Pap. Huron Mtn. Wild. Found. No. 3.

ADDRESS: Huron Mountain Wildlife Foundation  
Huron Mountain Club  
Big Bay, MI 49808



DESIGNATION: Isle Royale Wilderness

TYPE: natural area preserve

ACREAGE: 131,880

LOCATION: Isle Royale (Lake Superior), Keweenaw Co.

Isle Royale National Park

PROTECTION: under Federal Wilderness Act

DATE OF PROTECTION: 1976, October 20

OWNERSHIP: U.S. Government

ADMINISTRATION: National Park Service, Isle Royale National Park

DEVELOPMENTS: foot trails, campsite shelters

MANAGEMENT: none

GENERAL CHARACTER: Isle Royale, on the northern rim of the Lake Superior Syncline, is composed of Keweenaw lava flows alternating with thinner beds of sandstone and conglomerate, all dipping southeast into Lake Superior. The igneous beds form most of the cuestaform ridges running the length of the island, the highest of which (Greenstone Ridge) rises to 490 feet above Lake Superior. The many swamps, lakes and fiord-like harbors occupy narrow valleys underlain by weaker sedimentary strata. Such valleys are largely the result of glacial quarrying. Glacial drift, however, is primarily restricted to the island's southwestern end, where it forms an extensive mantle. Several morainal features, oriented north-south, lie to the west and south of Lake Desor. Crag-and-tail drumlins are scattered northwest of Siskiwit Bay and trend westerly. Beach terraces of glacial lakes Minong and Nipissing are evident in the drift on the island's west end.

At least half of the island's vegetation shows disturbance from



fire and/or logging. Although many communities are still successional, trends in vegetational development are clearly evident. Forests are primarily of two types--boreal coniferous and northern hardwood--each on the latitudinal fringe of its distribution. A linear vegetational zonation has developed, with hardwoods following the ridgetops and boreal forests lining the shores and valleys. On the island's periphery, where the cool, moist influence of the lake is greatest, the boreal spruce-fir forest is dense, stunted and draped with Usnea. Frequent windthrow of conifers allows Betula papyrifera (paper birch) to invade. Inland, and at higher elevations, Abies balsamea (balsam fir) increases in relative abundance and the forest is taller and less dense.

Atop many of the ridges, especially in the southwest where soils are deep, forests of Acer saccharum (sugar maple) and Betula allegheniensis (yellow birch) prevail. In young stands, Populus spp. (aspen) and Betula papyrifera (paper birch) are important. Also occurring intermittently on the high ridges are unforested areas or "balds", maintained by lightning fires, erosion and drought. Here, grasses share dominance with shrubs such as Vaccinium angustifolium (blueberry), Diervilla lonicera (bush honeysuckle), Amalanchier spp. (serviceberry) and Corylus cornuta (hazelnut), and scattered trees of Betula papyrifera (paper birch) and Populus spp. (aspen). Other communities of limited extent include Thuja occidentalis (white cedar) swamps, Pinus banksiana (jack pine) woods and floating bog mats.

In addition to the famous wolf and moose populations of Isle Royale, mink, red fox, beaver, muskrat and snowshoe hare are among the

common animals. Over 200 bird species are known from the island.

#### REFERENCES:

- Brown, C.A. 1937. Ferns and flowering plants of Isle Royale, Michigan. U.S. Govt. Printing Off. Washington, D.C.
- Cooper, W.S. 1913. The climax forest of Isle Royale, Lake Superior, and its development. Bot. Gaz. 55:1-44; 115-140; 189-235.
- Huber, N.K. 1973. Glacial and post-glacial history of Isle Royale National Park, Michigan. U.S. Geol. Surv. Prof. Paper No. 754-A.
- Shelton, N. 1975. The life of Isle Royale. Nat. Park Serv. Washington, D.C.

ADDRESS: Isle Royale National Park  
87 N. Ripley St.  
Houghton, MI 49931

DESIGNATION: James H. Klipfel Memorial Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 160

LOCATION: Sect. 35, T59N, R29W, Keweenaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, October 29

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Situated on the western end of Brockway Mountain, the preserve extends from the ridge-forming Middle Conglomerate, southward to the Lower Lake Shore Traps, spanning an elevation change of over 350 feet in less than one-half mile. Garden Brook flows through the tract's southern portion.

The upland part of the preserve is windswept and dominated largely by shrubs and small trees. Little vegetation manages to maintain itself on the steep southern slope of Brockway, but in the valley below, Quercus rubra (red oak), Tilia americana (basswood) and Betula allegheniensis (yellow birch) give way to a conifer swamp of Thuja occidentalis (white cedar), Picea glauca (white spruce) and Abies balsamea (balsam fir).

Brockway is frequented by migrating birds, especially in spring. Among those sighted are sharp-shin and broad-winged hawks, snowy owl, and bald and golden eagles.

#### REFERENCES:

Michigan Nature Association. 1979. James H. Klipfel Memorial Nature





Sanctuary. Mich. Nat. Assoc. Mount Clemens (leaflet).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Jonathon Woods

TYPE: natural area preserve

ACREAGE: 144

LOCATION: Sects. 30 & 31, T6N, R11E, Lapeer Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1978, July

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: foot trail system

MANAGEMENT: none

GENERAL CHARACTER: An interlobate moraine lends considerable relief to this preserve, with elevation varying up to 100 feet in its northern portion. A stream flows northward along the western boundary, cutting a valley deep into the glacial till.

Because of its habitat diversity, a relatively large number of communities exist within the preserve. The highest upland areas support a forest of mixed hardwoods in which Quercus rubra (red oak) and Quercus alba (white oak) predominate. On the lower uplands and in sheltered ravines, rich Fagus grandifolia (beech)-Acer saccharum (sugar maple) forests prevail. A sizeable stand of Populus sp. (aspen) lies on the tract's southern extreme, and old-field communities are occasional.

Of the three wetland communities present, one is a shrub-dominated kettle hole bog and two are swamp forests, dominated respectively by Betula allegheniensis (yellow birch) and Larix laricina (tamarack).

Wildlife of the preserve has not been reported.

## REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912

DESIGNATION: Julius C. and Marie Moran Peter Nature Sanctuary  
(Grass Lake Nature Sanctuary)

TYPE: natural area preserve

ACREAGE: 95

LOCATION: Sect. 4, T31N, R9E; Sect. 33, T32N, R9E, Alpena Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1969, December 29

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: dirt road into property

MANAGEMENT: none

GENERAL CHARACTER: The Sanctuary is situated on the south end of Grass Lake, where the latter borders on a broad, marly marsh. In the adjoining upland, soils are thin or locally absent on the underlying Devonian Alpena Limestone.

A forest of Thuja occidentalis (white cedar), Picea glauca (white spruce) and Abies balsamea (balsam fir) surrounds the lake. The marl marsh on the lake's periphery supports Potentilla fruticosa (shrubby cinquefoil), Triglochin maritimum (arrow grass), Sarracenia purpurea (pitcher plant), Utricularia cornuta (bladderwort) and Cladium mariscoides (twig rush).

Wildlife known from the preserve includes bear, bobcat, coyote, loon, American bittern, Wilson's snipe and pileated woodpecker.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Karl Chen Memorial Prairie Plant Preserve  
(Roy Road Prairie Plant Preserve)

TYPE: natural area preserve/managed preserve

ACREAGE: 30

LOCATION: Sect. 21, T8S, R12W, St. Joseph Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1976, October 19

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: limited burning of prairie

GENERAL CHARACTER: The preserve occupies a lowland area near the White Pigeon River. A small stream bisects the tract.

Most of the acreage supports a diversity of marsh and prairie species, including Silphium terebinthinaceum (prairie dock), Eupatorium spp. (joe-pye-weed), Veronicastrum virginicum (Culver's root) and Solidago spp. (goldenrod). An upland oak "opening" lies along the preserve's eastern boundary.

Birds reported from the tract include bob-white and red-headed woodpecker.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Kasey Hartz Natural Area

TYPE: natural area preserve

ACREAGE: 10

LOCATION: Sect. 15, T10N, R16W, Muskegon Co.

PROTECTION: resolution by Muskegon Community College Trustees

DATE OF PROTECTION: 1970, April 20

OWNERSHIP: Muskegon Community College

ADMINISTRATION: Life Science Department

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: A sandy plain of glacial outwash underlies the preserve. Four Mile Creek flows westward, cutting a valley through the property.

Quercus alba (white oak), Quercus velutina (black oak) and Pinus strobus (white pine) dominate the upland forest which covers most of the property. In the stream valley, a transitional Prunus pensylvanica (pin cherry)-Populus spp. (aspen) association gives way to Osmunda cinnamomea (cinnamon fern) and Lindera benzoin (spicebush) along the creek bed.

Mammals of the tract include raccoon, muskrat and squirrel.

Tufted titmouse, nuthatch and flicker are among the resident birds.

REFERENCES:

Michigan Natural Areas Council. 1979. Kasey Hartz Natural Area reconnaissance report. Ann Arbor (xerox).

ADDRESS: Life Sciences Department  
Muskegon Community College  
221 Quarterline Rd.  
Muskegon, MI 49442

DESIGNATION: Keweenaw Shore No. 1 Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 37

LOCATION: Sect. 36, T59N, R30W, Keweenaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1967, October 7

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Located on the Outer Conglomerate along the Lake

Superior shore, the preserve possesses a characteristic assemblage of shoreline species, including Campanula rotundifolia (bellflower), Artemesia caudata (wormwood), Potentilla tridentata (cinquefoil) and Primula mistassinica (bird's-eye primrose). The sparsely-vegetated rocks are backed by a shrub zone of Shepherdia canadensis (sheep-berry), Vaccinium angustifolium (blueberry), Alnus crispa (alder) and Juniperus communis (juniper) which in turn gives way to an Usnea-draped, stunted forest of Thuja occidentalis (white cedar), Abies balsamea (balsam fir), Amalanchier sp. (serviceberry) and Betula papyrifera (paper birch). Plant communities lying farther inland include Thuja occidentalis (white cedar) swamp and open marsh.

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Keweenaw Shore No. 2 Plant Preserve

TYPE: natural area preserve

ACREAGE: 6

LOCATION: Sect. 27, T59N, R29W, Keweenaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, November 27

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The dominant feature of this preserve is the rocky Lake Superior shoreline and its unique assemblage of plant species. On these lichen-encrusted rocks of the Outer Conglomerate formation are found Primula mistassinica (bird's-eye primrose), Campanula rotundifolia (bellflower), Lathyrus maritimus (beach pea), Potentilla tridentata (cinquefoil), Solidago spathulata (goldenrod) and, in moister rock hollows, Pinguicula vulgaris (butterwort). A shrub zone which backs the open shore consists of Alnus crispa (alder), Shepherdia canadensis (sheep-berry), Myrica gale (sweet gale) and Vaccinium angustifolium (blueberry).

Wildlife of the preserve has not been reported.

#### REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Kitchel Dunes (North Shore Dunes)

TYPE: natural area preserve

ACREAGE: 112

LOCATION: Sect. 20, T8N, R16W, Ottawa Co.

PROTECTION: ownership by The Nature Conservancy  
dedication by Central Michigan University

DATE OF PROTECTION: 1974, December 18

OWNERSHIP: The Nature Conservancy (52 acres)  
Central Michigan University (60 acres)

ADMINISTRATION: The Nature Conservancy  
Central Michigan University

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Composed largely of open, active dunes, the preserve supports a complex of sand ridges with intervening swales. The latter frequently hold dune pools, especially during high lake levels.

A limited area of upland dune is forested with Tsuga canadensis (hemlock), Acer saccharum (sugar maple) and Fagus grandifolia (beech). On the remaining upland acreage, Ammophila breviligulata (beach grass), Calamovilfa longifolia (sand reed grass) and Prunus pumila (sand cherry) dominate. The interdunal swales range in character from open water to localized marshes dominated by Scirpus americana (bulrush), Juncus balticus (rush), Carex spp. (sedge) and Eleocharis spp. (spike rush). Older swales support stands of Pinus banksiana (jack pine).

#### REFERENCES:

Urban and Environmental Studies Institute. 1977. Kitchel Dune Preserve feasibility study. Grand Valley State Colleges. Allendale.



ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912

Central Michigan University  
Mount Pleasant, MI 48859

DESIGNATION: Klumbis Road Prairie

TYPE: managed preserve

ACREAGE: 1.1

LOCATION: Sect. 22, T6S, R16W, Cass Co.

PROTECTION: lease to The Nature Conservancy

DATE OF PROTECTION: 1978, December

OWNERSHIP: AMTRAK

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: periodic burning and brush removal

GENERAL CHARACTER: A sandy, mesic prairie, the Klumbis Road site supports many components of both dry and mesic prairies, including Andropogon gerardii (big bluestem), Andropogon scoparius (little bluestem), Cacalia atriplicifolia (pale Indian plantain), Phlox pilosa (downy phlox), Ratibida pinnata (yellow coneflower) and Senecio plattensis (prairie ragwort).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1978. AMTRAK prairie remnant reconnaissance report. Ann Arbor (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912

DESIGNATION: Kope Kon Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 49

LOCATION: Sects. 16 & 21, T8S, R6W, Branch Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, October 25

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: short dirt road

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies adjacent to Lake George and includes an upland portion which slopes to lake level. The upland supports old fields, second growth hardwoods and an old growth Quercus spp. (oak) forest of very large stature. Nearer the lake, swamp hardwoods dominate, giving way to a Typha sp. (cattail) marsh on the lake's margin.

Wildlife of the preserve has not been reported.

REFERENCES:

Holzman, R.W. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Lake Huron Sand Dunes Plant Preserve

TYPE: natural area preserve

ACREAGE: 16

LOCATION: Sect. 9, T41N, R3E, Chippewa Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1976, January 26

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve consists primarily of low, open and forested dunes in a complex of Nipissing beach terraces. Inland from the oldest of these terraces lies a poorly-drained till plain veneered by glacio-lacustrine sediments. A stream which parallels the Lake Michigan shore bisects the property.

The open dunes are dominated by beach grasses, Arctostaphylos uva-ursi (bearberry), Juniperus communis (juniper) and scattered stands of Pinus strobus (white pine) and Pinus resinosa (red pine). Inland from the stream, the dune ridges are forested with Abies balsamea (balsam fir), Picea glauca (white spruce), Pinus spp. (pine) and Betula papyrifera (paper birch). Between these ridges lie swales of Thuja occidentalis (white cedar) swamp, and similar swamps dominate the low till plain to the north.

Wildlife of the preserve has not been reported in detail.

#### REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.



ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Lake St. Clair National Wildlife Refuge

TYPE: natural area preserve

ACREAGE: 4200

LOCATION: T2N, R15E, St. Clair Co.

PROTECTION: designation as National Wildlife Refuge

DATE OF PROTECTION: 1934, September 13

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Shiawassee Nat. Wildlife  
Refuge

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The Refuge consists largely of open water in the St. Clair River delta, marked only by buoys placed during duck hunting season. One permanent island dominated by Typha spp. (cattail), lies in the northern unit and others appear during low water years.

Established for waterfowl protection, the Refuge is used especially by migrating and overwintering ducks.

REFERENCES: none

ADDRESS: Shiawassee National Wildlife Refuge  
6975 Mower Rd., RR #1  
Saginaw, MI 48601



DESIGNATION: Lake Superior Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 369

LOCATION: Sects. 4 & 9, T50N, R7W, Chippewa Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION:

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The Sanctuary occupies an area shaped by the Nipissing Great Lakes; a parallel series of ancient beach ridges--running north-west to southeast--extend inland from the modern beach. The sandy ridge crests are forested with Acer saccharum (sugar maple) and Tsuga canadensis (hemlock), while the intervening swales support marshes and sphagnum bogs. A strip of open dune fronts on Lake Superior and supports Hudsonia tomentosa (beach heath), Lathyrus maritimus (beach pea), Ammophila breviligulata (beach grass) and Arctostaphylos uva-ursi (bearberry).

The preserve provides habitat for bear, coyote, snowshoe hare, bobcat and beaver. Birds sighted on the tract include barred owl, Sandhill crane, parula, pileated woodpecker and vireo.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Lakeville Swamp Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 66

LOCATION: Sect. 27, T5N, R11E, Oakland Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1963

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Situated near the edge of a rolling interlobate moraine in northeastern Oakland County, the tract is a low-lying area with little internal relief. A small stream crosses its boundary in two places.

Five basic plant communities lie within the perimeter of the property, which consists of three separate parcels. Covering the eastern section and much of the central section are diverse wet prairie communities supporting Andropogon gerardii (big bluestem), Sorghastrum nutans (Indian grass), Solidago spp. (goldenrod), Eupatorium spp. (joe-pye weed) and Cirsium muticum (swamp thistle). A Larix laricina (tamarack) fen is surrounded by open marsh, which gives way to Thuja occidentalis (white cedar) swamp. Two other communities of limited extent are Quercus spp. (oak)-Carya spp. (hickory) "island" forest, and Nemopanthus mucronatus (Michigan holly) swamp.

Wildlife of the preserve has not been reported.



## REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat.  
Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Lapland Buttercup Plant Preserve

TYPE: natural area preserve

ACREAGE: 20

LOCATION: Sect. 34, T43N, R2E, Chippewa Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, August 2

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on glacial lake sediments with very gently rolling topography. The highest areas of this rather low tract support rich Acer rubrum (red maple)-Fraxinus nigra (black ash) forests, while in the lower areas, coniferous swamps of Thuja occidentalis (white cedar) and Picea mariana (black spruce) predominate.

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Laughing Whitefish Falls Scenic Site

TYPE: natural area preserve

ACREAGE: 360

LOCATION: Sect. 16, T46N, R22W, Alger Co.

Laughing Whitefish Falls State Park

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1963, June 14

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The Laughing Whitefish River drops over a thick, resistant sandstone formation, then cascades over a dome of thinly-bedded sandstone. Surrounding the falls is a mature Tsuga canadensis (hemlock)-Pinus strobus (white pine)-northern hardwood association with numerous large Thuja occidentalis (white cedar) and Picea mariana (black spruce) bordering the river below the falls. Nearer the tract's perimeter are successional woodlands dominated by Acer spp. (maple).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Lawrence A. and Mary Bell Wade Memorial Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 72

LOCATION: Sect. 11, T3N, R16W, Allegan Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, November 3

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: two homes on property

MANAGEMENT: none

GENERAL CHARACTER: The preserve fronts on Silver Lake, and on a small inlet stream which occupies a deep ravine in the sandy sediments. The tract's upland supports a forest of which Fagus grandifolia (beech), Quercus spp. (oak), Tsuga canadensis (hemlock), Acer saccharum (sugar maple) and Pinus strobus (white pine) are constituents. Cornus florida (flowering dogwood) is a prominent understory species.

Wildlife of the preserve has not been reported.

REFERENCES:

Daubendiek, B.A. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Lawton Prairie

TYPE: managed preserve

ACREAGE: 2.2

LOCATION: Sect. 28, T3S, R13W, Van Buren Co.

PROTECTION: lease by The Nature Conservancy

DATE OF PROTECTION: 1978, December

OWNERSHIP: AMTRAK

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: periodic burning and brush removal

GENERAL CHARACTER: This site consists of mesic prairie on humusy sand and is dominated by Andropogon gerardii (big bluestem) and Sorghastrum nutans (Indian grass). Other species include Solidago rigida (stiff goldenrod), Lespedeza capitata (bush clover), Liatris spp. (blazing star), Stipa spartea (needle grass) and Viola sagittata (arrow-leaved violet).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1978. AMTRAK prairie remnant reconnaissance report. Ann Arbor (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Lefglen Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 175

LOCATION: Sects. 20, 21, 28 & 29, T3S, R2E, Jackson Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1970, December 28

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Founded upon pitted glacial outwash, the Sanctuary possesses a varied topography, including two lakes of 8.9 and 2.5 acres respectively.

Most upland portions of the preserve are recovering from cultivation and support very young forests. However, one old-field has been colonized by many dry prairie species, with Andropogon scoparius (little bluestem) dominant. Lowland communities include hardwood swamp, Larix laricina (tamarack) swamp and open marsh.

Veery, vireo, owl, bittern, Sandhill crane and woodcock are among the preserve's many bird species.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Lew Sarrett Wildlife Sanctuary

TYPE: natural area preserve

ACREAGE: 170

LOCATION: Sects. 34 & 35, T3S, R18W, Berrien Co.

PROTECTION: ownership by Michigan Audubon Society

DATE OF PROTECTION: 1964

OWNERSHIP: Michigan Audubon Society

ADMINISTRATION: Michigan Audubon Society

DEVELOPMENTS: interpretive center, wildlife ponds, foot trails, teaching  
stations, observation towers

MANAGEMENT: none

GENERAL CHARACTER: Much of the preserve lies on the flood plain of the  
Paw Paw River where it traverses sandy glacio-lacustrine sediments.

Topography is gently rolling.

The sole upland plant community is a mixed hardwoods forest dominated by Liriodendron tulipifera (tuliptree), Quercus rubra (red oak), Fagus grandifolia (beech) and Fraxinus americana (white ash). Of the lowland communities, only one is forested--a flood plain association of Fraxinus nigra (black ash), Acer rubrum (red maple) and Platanus occidentalis (sycamore). Unforested lowland communities include open marsh and shrub swamps.

Wildlife of the preserve has not been reported.

#### REFERENCES:

Lindsey, A.A. and L.K. Escobar. 1976. Eastern deciduous forest Vol. 2, Beech-maple region. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: Sarrett Nature Center  
2300 Benton Center Rd.  
Benton Harbor, MI 49022

DESIGNATION: Little Brevort Lake Scenic Site

TYPE: natural area preserve

ACREAGE: 540

LOCATION: Sects. 23, 24 & 25, T42N, R6W, Mackinac Co.

Mackinac State Forest

PROTECTION: under Michigan's Wilderness and Natural Areas Act

DATE OF PROTECTION: 1979, May 10

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Forestry Division

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Little Brevort Lake, itself covering 144 acres, lies on the Point Aux Chenes Formation atop a veneer of Pleistocene deposits. A low outwash plain north and east of the lake gives way on its south and west sides to high, rugged Nipissing dunes.

These dune ridges are wooded largely with forests of Pinus strobus (white pine), Tsuga canadensis (hemlock) and Fagus grandifolia (beech). Certain disturbed areas support stands of Betula papyrifera (paper birch) and Tsuga canadensis (hemlock). The low-lying outwash to the northeast is covered with swamp forest of Thuja occidentalis (white cedar), Tsuga canadensis (hemlock) and Betula allegheniensis (yellow birch).

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Michigan Dept. of Natural Resources  
Forestry Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909

DESIGNATION: Lost Lake Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sects. 13 & 24, T23N, R3E, Ogemaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1975, September 29

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on a till plain at the eastern edge of the Gladwin Moraine. Lost Lake, most of whose forty acres lie within the tract, is the most notable topographic feature. The north-east and south-central portions support upland forests of Populus sp. (aspen), Acer saccharum (sugar maple) and Pinus strobus (white pine). A cedar swamp occupies the center of the Sanctuary and surrounds Lost Lake, which is immediately bordered by an open marsh. Common marsh species include Sarracenia purpurea (pitcher plant), Carex spp. (sedge), Utricularia sp. (bladderwort) and Menyanthes trifoliata (bog buckbean).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: Lucia K. Tower Preserve

TYPE: natural area preserve

ACREAGE: 23

LOCATION: Sect. 21, T23N, R16W, Manistee Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1974, December 6

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Five hundred feet of sandy Lake Michigan shoreline are included in the preserve property. Low dunes prevail near the lake and a seven to eight acre blowout extends inland to "Old Baldy", a 230-foot dune hill.

A typical sand flora occupies the low dunes and blowout area.

Inland from the foredune area lies a mixed hardwood-conifer forest of Acer saccharum (sugar maple), Fagus grandifolia (beech), Tsuga canadensis (hemlock) and Pinus strobus (white pine).

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office (personal communication).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: MacCurdy Ecological Tract

TYPE: natural area preserve

ACREAGE: 170

LOCATION: Sect. 34, T12N, R5W, Montcalm Co.

PROTECTION: dedication by Alma College

DATE OF PROTECTION: ca. 1965

OWNERSHIP: Alma College

ADMINISTRATION: Dept. of Biology

DEVELOPMENTS: foot trails, observation tower, research building

MANAGEMENT: none

GENERAL CHARACTER: The tract lies on a recessional moraine of the Saginaw lobe and possesses a rolling upland topography. The most notable geomorphic feature is a kettle-hole lake located in the center of the area.

The nearly 70 acres of upland forest on the preserve support secondary associations of varying composition. Dominants include Populus sp. (aspen)-Quercus spp. (oak) and Acer spp. (maple)-Quercus rubra (red oak)-Fagus grandifolia (beech). Scattered old fields represent many stages of secondary succession. An open bog mat borders the lake and merges with a Picea mariana (black spruce)-Larix laricina (tamarack) bog forest, in which Acer rubrum (red maple) and Fraxinus spp. (ash) are also important.

The preserve is inhabited by fox and various small mammals.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Dept. of Biology  
Alma College  
Alma, MI 48801

DESIGNATION: Martha Mott Preserve

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sect. 36, T2S, R13W, Van Buren Co.

PROTECTION: ownership by Michigan Audubon Society

DATE OF PROTECTION: 1971

OWNERSHIP: Michigan Audubon Society

ADMINISTRATION: Michigan Audubon Society

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on glacial outwash which slopes uniformly to the south. Over one-third of the acreage is forested with Quercus velutina (black oak) and Quercus alba (white oak). Half the remaining area is open field, dominated by Bromus inermis (brome grass). A sandy ridge which bisects the northern portion was planted in the early 1960's with Pinus spp. (pines). A successional thicket of Acer negundo (boxelder), Acer saccharum (sugar maple), Sassafras albidum (sassafras) and Prunus serotina (black cherry) covers about twenty acres. The preserve also includes part of an extensive Typha sp. (cattail) marsh.

Numerous bird species nest in the preserve, including green heron, red-tailed hawk, yellow-billed cuckoo and great horned owl.

REFERENCES:

Good, D. 1977. Study of the breeding birds of the Martha Mott Sanctuary, Van Buren County. Jack Pine Warb. 55: 162-178.

ADDRESS: Michigan Audubon Society  
7000 N. Westnedge  
Kalamazoo, MI 49001



DESIGNATION: Mary Stallins Ray Memorial Plant Preserve

TYPE: natural area preserve

ACREAGE: 8

LOCATION: Sect. 28, T7N, R16E, St. Clair Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1971, December

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: A plain of glacial lake clays lends the preserve a nearly level topography. The area is partly inundated each spring, and supports a lowland forest of Acer rubrum (red maple), Liriodendron tulipifera (tuliptree), Quercus spp. (oak) and Tsuga canadensis (hemlock).

Birds reported from the area include whip-poor-will, ruffed grouse, woodcock and ovenbird.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

DESIGNATION: McCormick Research Natural Area

TYPE: natural area preserve

ACREAGE: 3675

LOCATION: T50N, R29W, Marquette Co.

Ottawa National Forest

PROTECTION: designation as Federal Research Natural Area by U.S.

Forest Service

DATE OF PROTECTION: 1971

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Forest Service, Hiawatha National Forest

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: A thin or spotty veneer of glacial till covers the Precambrian rocks underlying this area. The resultant topography is rolling to rugged, with elevations ranging from 1600 feet along the Yellow Dog River to over 1900 feet around Lake Margaret. Elevation changes of 200 feet in one-quarter mile are not uncommon. The Yellow Dog River flows northeasterly through the center of the tract and traverses two falls. A glacial moraine crosses the northern edge of the property.

The predominant forest types on the preserve are Acer saccharum (sugar maple)-Fagus grandifolia (beech)-Betula allegheniensis (yellow birch) associations, or disturbed or xeric variants thereof. Concentrations of Tsuga canadensis (hemlock) are scattered throughout the area, as are Pinus strobus (white pine), Betula papyrifera (paper birch) and Thuja occidentalis (white cedar). Bogs, marshes and alder swamps border the Yellow Dog River and surround small lakes and ponds. Other



communities of occasional occurrence are dominated respectively by Picea mariana (black spruce), Pinus resinosa (red pine) and Picea glauca (white spruce)-Abies balsamea (balsam fir)-Betula papyrifera (paper birch).

Black bear are common on the tract, as are a number of smaller mammals.

#### REFERENCES:

Federal Committee on Ecological Reserves. 1977. A directory of research natural areas on federal lands of the United States of America. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: North Central Forest Experiment Station  
1030 Wright St.  
Marquette, MI 49855

DESIGNATION: Michigan Islands Wilderness Area (formerly Michigan Islands  
National Wildlife Refuge)

TYPE: natural area preserve

ACREAGE: 251

LOCATION: Sect. 6 & 7, T38N, R8W; Sect. 17, T39N, R5W; Sect. 33, T40N,  
R4W, Charlevoix Co.  
Sect. 15, T29N, R9E, Alpena Co.

PROTECTION: under Federal Wilderness Act

DATE OF PROTECTION: 1970, October 23

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Shiawassee Nat. Wildlife  
Refuge

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The Refuge consists of four islands--three from the Beaver Island Archipelago in Lake Michigan and one in northern Lake Huron. Of the former group, Gull Island is the largest, covering about 239 acres. Its central portion is forested with Abies balsamea (balsam fir) and Thuja occidentalis (white cedar). The rocky southern shore is irregular in outline, with numerous bays, inlets and beach pools, but the remainder of the island is bordered by a sandy shore fronting a low dune area. As its name implies, the island is heavily utilized by nesting gulls. Few mammals inhabit the island, but numerous other shore birds nest there.

Shoe and Pismire Islands, also in the Beaver Island group, consist of Pleistocene sands and gravels perched upon the dolomitic Bois Blanc Formation. The islands differ in their elevation above Lake Michigan.





Shoe Island is submerged during high lake levels and supports only herbaceous vegetation, while part of Pismire is permanently emergent and supports a small forest community. The islands serve as nesting grounds for herring and ring-billed gulls, common and Caspian terns, and, on Pismire, mallards and red-breasted mergansers.

Scarecrow Island lies in Thunder Bay (Lake Huron) and is composed of Pleistocene deposits perched atop the Antrim shale formation. Beach pools litter the low, broad, gravel shore, while centrally, the island is forested. Many bird species nest here, including those present on Shoe and Pismire, as well as great blue heron and cormorant.

#### REFERENCES:

- Bureau of Sport Fisheries and Wildlife. Undated. Michigan Islands wilderness study area. U.S. Govt. Printing Off. Washington, D.C.
- Dutton, C.E. 1968. Summary report on the geology and mineral resources of the Huron, Seney, Michigan Islands, Green Bay and Gravel Island National Wildlife Refuges of Michigan and Wisconsin. U.S. Geol. Surv. Bull. No. 1260-I,J.

ADDRESS: Shiawassee National Wildlife Refuge  
6975 Mower Rd. RR #1  
Saginaw, MI 48601

DESIGNATION: Middle Belt Prairie

TYPE: managed preserve

ACREAGE: 11

LOCATION: Sect. 26, T4S, R9E, Wayne Co.

Lower Huron MetroPark

PROTECTION: administrative designation by Huron-Clinton Metropolitan  
Authority

DATE OF PROTECTION: 1969, February

OWNERSHIP: Huron-Clinton Metropolitan Authority

ADMINISTRATION: Huron-Clinton Metropolitan Authority

DEVELOPMENTS: none

MANAGEMENT: periodic mowing

GENERAL CHARACTER: The preserve lies upon fluvial sediments in the Huron Slough, an abandoned channel of the Huron River. An open woodland, dominated by Quercus rubra (red oak) and Quercus velutina (black oak), occupies the tract's eastern portion. To the west, the forest thins to a mesic savannah with a dense ground cover which includes Eupatorium spp. (joe-pye-weed), Vernonia missurica (ironweed), Rudbeckia spp. (brown-eyed susan) and Lespedeza spp. (bush clover). Also present on the property is an old field, invaded to a degree by prairie species.

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Huron-Clinton MetroParks  
3050 Penobscot Bldg.  
Detroit, MI 48226

DESIGNATION: Mixed Forest Nature Study Area

TYPE: natural area preserve

ACREAGE: 968

LOCATION: Sects, 6 & 7, T39N, R1W, Mackinac Co.

Black Lake State Forest

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1955, December 15

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Forestry Division

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Located on Bois Blanc Island, the preserve lies upon Bois Blanc dolomite and borders on Lake Huron with a sandy to gravelly beach. Betula papyrifera (paper birch) and Acer spp. (maple) dominate the secondary forests of the tract. These stands vary in age and some possess very large, mature birch. Vegetation of the shore area includes such species as Tofieldia glutinosa (false asphodel), Castilleja coccinea (Indian paintbrush), Triglochin maritimum (arrow grass) and Arceuthobium pusillum (dwarf mistletoe) on Picea glauca (white spruce).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Forestry Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909

DESIGNATION: Mosely-Bennett-Barlow Preserve

TYPE: natural area preserve

ACREAGE: 45

LOCATION: Sect. 19, T3S, R8E, Wayne Co.

Sect. 24, T3S, R7E, Washtenaw Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1975, December 27

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The Huron River flows through a former glacial lake bed of clay and silt in this preserve. Several old houses, cabins and farm buildings lie along Rawsonville Road, which bisects the property. Swamp and marsh flood plain vegetation borders the Huron River and is backed by old fields and, to the northwest, a Quercus (oak)-Carya (hickory) forest.

Wildlife of the preserve has not been reported in detail.

#### REFERENCES:

Mosely-Bennett-Barlow Stewardship Committee. 1979. Mosely-Bennett-Barlow Preserve master plan. The Nature Conservancy, Michigan Field Office. Lansing (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912

DESIGNATION: Mud Lake Bog Research Area

TYPE: natural area preserve

ACREAGE: 200

LOCATION: Sects. 1 & 12, T1S, R5E, Washtenaw Co.

PROTECTION: deed restriction

DATE OF PROTECTION: 1957

OWNERSHIP: University of Michigan

ADMINISTRATION: Matthaei Botanical Gardens

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The central topographic feature of this preserve is an ice-block depression containing a bog lake. In the surrounding upland, isolated patches of Quercus spp. (oak)-Carya spp. (hickory) forest are scattered through old-field communities dominated by Crataegus spp. (hawthorn) and Rhus typhina (staghorn sumac). Lowland communities cover most of the preserve's acreage, and consist largely of open marsh and hardwood swamp. Larix laricina (tamarack) swamp surrounds the lake, which is immediately bordered by an extensive floating sphagnum-sedge mat.

Wildlife of the preserve has not been reported.

REFERENCES:

Heatwole, H. and L.L. Getz. 1960. Studies on the amphibians and reptiles of Mud Lake Bog in southern Michigan. Jack Pine Warb. 38:107-112.

ADDRESS: Matthaei Botanical Gardens  
1800 N. Dixboro Road  
Ann Arbor, MI 48105

DESIGNATION: Newaygo Prairie Ecological Study Area

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sect. 35, T12N, R12W, Newaygo Co.

Manistee National Forest

PROTECTION: special designation by U.S. Forest Service

DATE OF PROTECTION: 1966, January

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Forest Service, Manistee National Forest

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on a level plain of sandy glacial outwash. Soil in the area consists of Sparta loamy sand, a common substrate of prairie sites in Newaygo County. Vegetation here is dominated by dry prairie species such as Andropogon scoparius (little bluestem), Carex pensylvanica (sedge) and Rubus sp. (blackberry). Other common species include Koeleria macrantha (junegrass), Aristida purpurascens (purple three-awn) and Rumex acetocella (sheep sorrel).

Wildlife of the preserve has not been reported.

REFERENCES:

Hauser, R.S. 1953. An ecological analysis of the isolated prairies of Newaygo County, Michigan. Ph.D. Thesis. Michigan State University.

ADDRESS: District Forester  
Manistee National Forest  
White Cloud, MI 49349

DESIGNATION: Newaygo Prairie Plant Preserve

TYPE: natural area preserve

ACREAGE: 110

LOCATION: Sects. 2 & 11, T12N, R12W, Newaygo Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1969, August 21

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on a glacial outwash plain at the northern edge of Michigan's "prairie peninsula". The tract occupies a broad, bowl-like depression which lends it limited relief. Soils are typically Sparta loamy sand.

Similar to other prairie tracts in Newaygo County, this land has reverted to its original prairie condition since abandonment as farmland in the late 1800's. Oak woods surround the open prairie, which is dominated by Andropogon scoparius (little bluestem), Carex pensylvanica (sedge) and Rubus sp. (dewberry). Other common species here include Opuntia compressa (prickly-pear), Tephrosia virginiana (goat-rue) and Artemesia caudata (wormwood).

Wildlife of the preserve has not been reported.

#### REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Newton Woods

TYPE: natural area preserve

ACREAGE: 40

LOCATION: Sect. 29, T5S, R14W, Cass Co.

PROTECTION: resolution by Department of Forestry, MSU

DATE OF PROTECTION: ca. 1976

OWNERSHIP: Michigan State University

ADMINISTRATION: Department of Forestry

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: The tract is situated on a plain of glacial outwash within the Kalamazoo Morainic complex. Dowagiac Creek flows through the property's southeast quarter.

A rich, old-growth hardwood forest covers the area. Dominants here are Acer saccharum (sugar maple) and Fagus grandifolia (beech), contrary to a report of Quercus alba (white oak) dominance by Lindsey and Escobar (1976). In addition, the forest includes some unusually large individuals of Liriodendron tulipifera (tuliptree), Quercus bicolor (swamp white oak) and Quercus velutina (black oak).

Wildlife of the preserve has not been reported.

REFERENCES:

Hollensen, K.A. Dept. of Botany, Mich. State Univ. (personal communication).

Lindsey, A.A. and L.K. Escobar. 1976. Eastern deciduous forest Vol. 2, Beech-maple region. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: Dept. of Forestry  
Michigan State University  
East Lansing, MI 48824

DESIGNATION: Northern Hardwoods Public Use Natural Area

TYPE: natural area preserve

ACREAGE: 68

LOCATION: Sect. 13, T44N, R14W, Schoolcraft Co.

Seney National Wildlife Refuge

PROTECTION: designation as Public Use Natural Area by U.S. Fish &  
Wildlife Service

DATE OF PROTECTION: 1977, March 16

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney Nat. Wildlife Refuge

DEVELOPMENTS: gravel road through northern portion

MANAGEMENT: none

GENERAL CHARACTER: Wind and wave action have shaped the glacial lake sands deposited here by Lake Algonquin into low, scattered ridges. An old-growth hardwood forest of Fagus grandifolia (beech) and Acer saccharum (sugar maple) dominates the tract. Betula allegheniensis (yellow birch), Betula papyrifera (paper birch) and Tsuga canadensis (hemlock) are common associates. Approximately sixteen acres support a Pinus resinosa (red pine) stand.

Wildlife species frequenting the area include pileated woodpecker, barred owl and flying squirrel.

REFERENCES: none

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883

DESIGNATION: Northern Hardwood Research Natural Area

TYPE: natural area preserve

ACREAGE: 550

LOCATION: Sects. 4 & 9, T44N, R17W, Schoolcraft Co.

Seney National Wildlife Refuge

PROTECTION: designation as Research Natural Area by U.S. Fish &  
Wildlife Service

DATE OF PROTECTION: 1948, September 21

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney Nat. Wildlife Refuge

DEVELOPMENTS: gravel road, goose pen impoundment

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on the sandy former bed of glacial Lake Algonquin and is characterized by flat upland and low dunes. The Manistique River bisects the area's southern portion. Acer saccharum (sugar maple), Fagus grandifolia (beech) and Betula allegheniensis (yellow birch) dominate the old-growth forest which covers most of the site.

Deer, bear and numerous small mammals are known from the preserve.

REFERENCES:

Federal Committee on Ecological Reserves. 1977. A directory of research natural areas on federal lands of the United States of America. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883

DESIGNATION: Northshore Research Natural Area

TYPE: natural area preserve

ACREAGE: 817

LOCATION: Sects. 5 & 6, T39N, R1W, Mackinac Co.

Black Lake State Forest

PROTECTION: under Michigan Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1955, December 9

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Forestry Division

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The peninsular portion of section 5 lies upon the Silurian dolomite of the St. Ignace Formation. To the south, the Bois Blanc Formation, which comprises the bulk of the island, consists of Devonian dolomite interbedded with chert. Glacial deposits are thin or insignificant.

The tract supports a well-developed forest partly dominated by Pinus strobus (white pine), with numerous individuals exceeding 20 in. in diameter. Also of importance are Pinus resinosa (red pine), Abies balsamea (balsam fir), Picea spp. (spruce) and Thuja occidentalis (white cedar). Among the characteristic plants of the gravelly shore are Iris lacustris (dwarf lake iris), Myrica gale (sweet gale), Castilleja coccinea (Indian paintbrush) and Potentilla fruticosa (shrubby cinquefoil).

Wildlife of the preserve has not been reported.



## REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Forestry Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: Osborne Mills Riverland

TYPE: natural area preserve

ACREAGE: 39

LOCATION: Sect. 11, T2S, R5E, Washtenaw Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1976, July

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The preserve borders an oxbow of the Huron River.

On its erosional bank, the river has cut deeply into an interlobate moraine to produce steep slopes with local seepage.

A well-developed Quercus (oak)-Carya (hickory) forest dominates the tract's upland. Wetland communities occupy the narrow floodplain along the oxbow's outer bank and the entire inner bank. A triangle of old field lies on the tract's northern end.

Opossum, woodchuck, muskrat, weasel and red fox inhabit the preserve, and birds sighted there include great blue heron, osprey, black-billed cuckoo and screech owl.

REFERENCES:

Washtenaw Land Conservancy. 1978. Washt. Land Conserv. News. 1: 1-4.

ADDRESS: The Nature Conservancy  
511 N. Clippert  
Lansing, MI 48912

DESIGNATION: Palmer-Wilcox-Gates Preserve

TYPE: natural area preserve

ACREAGE: 15

LOCATION: Sect. 9, T29N, R9W, Antrim Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1976, November 17

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The shoreline of this tract, located on the east side of Grand Traverse Bay, consists of a low foredune backed by fossil dunes of up to 35 feet in height. An interdunal swale enters the eastern border.

With the exception of the foredune, which supports typical open dune vegetation, the upland is forested with a northern mixed hardwoods association in which Fagus grandifolia (beech), Betula allegheniensis (yellow birch), Tsuga canadensis (hemlock), Acer saccharum (sugar maple) and Pinus spp. (pine) share dominance. The swale area consists of open marsh.

The spotted sandpiper, pileated woodpecker, veery, thrush and ovenbird have been sighted on the preserve. Gray squirrel, raccoon, skunk and red fox are also characteristic of the area.

#### REFERENCES:

The Nature Conservancy, Michigan Field Office. 1978. Palmer-Wilcox-Gates Preserve master plan. Lansing (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Passage Island Research Natural Area

TYPE: natural area preserve

ACREAGE: 104

LOCATION: Keweenaw Co.

Isle Royale National Park

PROTECTION: designation as Research Natural Area by National Park Service

DATE OF PROTECTION: 1966

OWNERSHIP: U.S. Government

ADMINISTRATION: National Park Service, Isle Royale National Park

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The island's geomorphic character is identical to that of Isle Royale (see Isle Royale Wilderness). Vegetation, however, differs significantly, largely due to the absence of moose and their browsing. Among the most obvious consequences are the presence of Taxus canadensis (yew) and absence of Rubus parviflorus (thimbleberry). As expected, the timber wolf is also absent from the island.

REFERENCES:

Federal Committee on Ecological Reserves. 1977. A directory of research natural areas on federal lands of the United States of America. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: Isle Royale National Park  
87 N. Ripley St.  
Houghton, MI 49931



DESIGNATION: Pennfield Bog Plant Preserve

TYPE: natural area preserve

ACREAGE: 29

LOCATION: Sect. 10, T1S, R7W, Calhoun Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1967, February 28

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve is located in an ice block depression on the Kalamazoo moraine and is surrounded by rolling upland. Nearly all the acreage lies in the water-filled depression of Little Goose Lake, which supports a floating bog mat. The advancing edge of the mat is dominated by Decodon verticillata (swamp loosestrife) which is backed by a community of Carex lasiocarpa (sedge), Vaccinium macrocarpon (cranberry), Thelypteris palustris (marsh fern) and Chamaedaphne calyculata (leatherleaf). A swamp forest of Larix laricina (tamarack) surrounds the open mat, and a low-lying Acer rubrum (red maple) forest occupies the rim of the depression.

Wildlife of the preserve have not been reported.

#### REFERENCES:

Crow, G. 1969. An ecological analysis of a southern Michigan bog. Mich. Bot. 8:11-27.

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Pepperidge Dunes Plant Preserve

TYPE: natural area preserve

ACREAGE: 20

LOCATION: Sect. 15, T7S, R20W, Berrien Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, June 25

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve derives its name partly from the fossil beach upon which it lies, producing a level upland. A forest of Acer rubrum (red maple) and associated species--including Nyssa sylvatica (pepperidge)--dominates the tract.

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Petersburg State Game Area Special Habitat

TYPE: managed preserve

ACREAGE: 10

LOCATION: Sect. 16, T7S, R6E, Monroe Co.

Petersburg State Game Area

PROTECTION: special designation by Wildlife Division, Michigan DNR

DATE OF PROTECTION: 1979

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Wildlife Division

DEVELOPMENTS: none

MANAGEMENT: periodic burning

GENERAL CHARACTER: The tract consists of sandy, mesic prairie strips on either side of Teal Road. Andropogon scoparius (little bluestem) and Andropogon gerardii (big bluestem) dominate and common forbs include Liatris spp. (blazing star), Desmodium canadense (tick trefoil) and Lespedeza capitata (bush clover).

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Michigan Dept. of Natural Resources  
Wildlife Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Phyllis Haehnle Memorial Sanctuary

TYPE: natural area preserve/managed preserve

ACREAGE: 687

LOCATION: Sects. 1, 2 & 3, T2S, R1E, Jackson Co.

PROTECTION: ownership by Michigan Audubon Society

DATE OF PROTECTION: 1955

OWNERSHIP: Michigan Audubon Society

ADMINISTRATION: Michigan Audubon Society

DEVELOPMENTS: crane observation area

MANAGEMENT: strip crops planted for wildlife food and cover

GENERAL CHARACTER: The preserve lies on a low, sandy glacial outwash plain, and much of the acreage is at or below the water table. Part of Eagle Lake lies within the tract's boundary. Forest associations are of three types; Quercus (oak)-Carya (hickory), Fagus grandifolia (beech)-Acer saccharum (sugar maple), and Populus spp. (aspen). Open marsh occupies extensive areas; dominants here are Typha latifolia (cattail) and Scirpus spp. (bulrush). Several old fields are planted with strip crops for wildlife food and cover.

Bird life of the Sanctuary is diverse. Among the nesting species are Canada goose, Sandhill crane, coot and American and least bittern. Migratory visitors include up to 700 Sandhill cranes, many ducks and geese and occasional whistling swans.

REFERENCES:

Whiting, Robert. Michigan Audubon Society (personal communication).

ADDRESS: Michigan Audubon Society  
7000 N. Westnedge  
Kalamazoo, MI 49001



DESIGNATION: Pine River Nature Sanctuary (Stephen M. Polovich Memorial)

TYPE: natural area preserve

ACREAGE: 18

LOCATION: Sect. 30, T7N, R16E, St. Clair Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1963

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The tract lies atop delta sediments from the post-glacial Black River, which have now been dissected by the modern river and its tributaries, creating a diverse topography of uplands and broad ravines. The forest occupying the site is one of transition between northern and southern associations. Dominants include Fagus grandifolia (beech), Betula allegheniensis (yellow birch), Acer saccharum (sugar maple) and Tsuga canadensis (hemlock).

Whip-poor-will and great horned owl are among the many birds known from the area.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Porcupine Mountains Wilderness Area

TYPE: natural area preserve

ACREAGE: 42,246

LOCATION: T50N, R45W, Gogebic Co.

T50N, R44W; T51N, R43, Ontonagon Co.

Porcupine Mountains Wilderness State Park

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1954, August 13

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trail system, cabins and trailside shelters

MANAGEMENT: none

GENERAL CHARACTER: The Porcupines lie on the southern edge of the Lake Superior Syncline and are formed of alternating beds of volcanics and conglomerates, dipping northwest into the Superior Basin. The resistant formations produce ridges which are flanked by valleys of weaker rock layers. This phenomenon is demonstrated most dramatically along the area's northern extreme, where the low Superior shoreline is backed by the Outer or Great Conglomerate, which rises 900 feet, then gives way in a 400-foot escarpment to the valley containing Lake of the Clouds and Carp Creek. To the south, this pattern is echoed twice more in subdued form, producing the "mountainous" topography of the Porcupines. Glacial drift is thin or absent on the hilltops, but occurs in varying thicknesses on the lower slopes and valleys.

The area is equally well known for its vegetation; it supports the most extensive virgin hardwood forest in eastern North America west





of the Adirondacks. The forest is dominated over most of its area by Acer saccharum (sugar maple), mingling with Tilia americana (basswood), Tsuga canadensis (hemlock) and Betula allegheniensis (yellow birch). On north-facing slopes, hemlock often moves into dominance and, in places, occurs in almost pure stands. Pinus strobus (white pine) is important on steep, rocky slopes. Pioneer communities of Arctostaphylos uva-ursi (bearberry), Vaccinium sp. (blueberry) and dwarfed Pinus spp. (pine) occur along the crest and cliffs of the front range, giving way to Quercus (oak)-Populus (aspen) forests. Swamps of Thuja occidentalis (white cedar), Larix laricina (tamarack), Picea glauca (white spruce) and Fraxinus nigra (black ash) occupy the flood plains of Carp Creek and other streams.

A forest of Populus spp. (aspen) and Betula papyrifera (paper birch) lies between Lake Superior and M-107, the result of fire within the last fifty years. Also scattered throughout the region are sprout forests of Acer saccharum (sugar maple), Tilia americana (basswood), Betula allegheniensis (yellow birch) and Quercus rubra (red oak), occupying areas once clear-cut.

Common mammals in the region include bear, beaver, deer and red squirrel.

#### REFERENCES:

- Braun, E.L. 1950. Deciduous forests of eastern North America. Hafner. New York.
- Darlington, H.T. 1931. Vegetation of the Porcupine Mountains, northern Michigan. Pap. Mich. Acad. Sci. 13:9-65; 22:33-68 (1936).
- Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.



ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Port Huron State Game Area Special Habitats

TYPE: natural area preserve

ACREAGE: 770

LOCATION: Sects. 5, 6, 15-17, 21, 22, 26 & 27, T7N, R16E, St. Clair Co.

Port Huron State Game Area

PROTECTION: special designation by Wildlife Division, Michigan DNR

DATE OF PROTECTION: 1977

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Wildlife Division

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Seven separate tracts are included in the Special Habitat designation. All lie on or near the Black River, which cuts a steep-sided ravine through sandy, glacio-lacustrine sediments. Three of the tracts include Tsuga canadensis (hemlock) stands and one supports a mixed conifer forest. Another tract contains deep, forested ravines, and the remaining sites include a rich swamp forest and a combination of old stream beds, flood plain and bluffs.

Fox, deer, mink, beaver and weasel are among the many mammal species present. Birds of the area include northern warblers, scarlet tanager and blue-gray gnatcatcher.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Wildlife Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Prairie Chicken Management Area

TYPE: managed preserve

ACREAGE: 1031

LOCATION: Sects. 2, 3, 10 & 14, T20N, R7W, Osceola Co.

PROTECTION: special designation by Natural Resources Commission

DATE OF PROTECTION: 1970

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Wildlife Division

DEVELOPMENTS: observation blind

MANAGEMENT: maintenance of nesting and brood cover, controlled burning,  
mowing, and planting of grasses and food patches

GENERAL CHARACTER: The preserve is maintained in an open, prairie-like condition, with trees and high brush largely eliminated. Food patches include corn, buckwheat, millet, oats and wheat. A small but fluctuating population of prairie chickens is currently being maintained.

REFERENCES:

Ammann, G.A. 1957. The prairie grouse of Michigan. Dept. of Conserv.  
Tech. Bull. Lansing.

ADDRESS: Michigan Dept. of Natural Resources  
Wildlife Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: Prairie Chicken Nature Sanctuary

TYPE: managed preserve

ACREAGE: 47

LOCATION: Sect. 3, T20N, R7W, Osceola Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1971, May 13

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: maintenance of nesting and brood cover, controlled burning,  
mowing and planting of grasses and food patches

GENERAL CHARACTER: The preserve occupies a flat, sandy plain with local depressions. Vegetation is mostly open and dominated by Danthonia spicata (poverty oatgrass) and Pteridium aquilinum (bracken). Betula papyrifera (paper birch) and Populus tremuloides (quaking aspen) occur in scattered clumps. Sedge marshes occupy the local depressions.

The area is contiguous with the DNR's Prairie Chicken Management Area, which supports a small population of prairie chickens. Other bird life of the MNA preserve includes American bittern, upland plover, northern yellow-throat and song sparrow.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Presque Isle River Scenic Site

TYPE: natural area preserve

ACREAGE: 1465

LOCATION: Sects 4 & 5, T49N, R45W; Sects. 19, 20, 29-32, T50N, R45W,  
Gogebic Co.

Porcupine Mountains Wilderness State Park

PROTECTION: under Michigan's Wilderness and Natural Areas Act  
(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1954, August 13

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: The Presque Isle River flows over the Nonesuch shale here in its lower reaches. Traversing a series of low falls and cascades, it then divides into two swifter and narrower channels, cut deeply into the bedrock. Its dark waters empty into Lake Superior along a sandy beach built of the stream's own sediment. Acer saccharum (sugar maple), Betula allegheniensis (yellow birch) and Tsuga canadensis (hemlock) dominate the forest in the area near the falls.

Wildlife of the area has not been reported as distinct from that of the Park in general.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Proud Lake Nature Study Area

TYPE: natural area preserve

ACREAGE: 105

LOCATION: Sect. 21, T2N, R8E, Oakland Co.

Proud Lake Recreation Area

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1966, March 8

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Located upon a pitted outwash plain, the area's outstanding feature is a deep ice-block depression housing a bog lake with a quaking mat. A smaller, shallower lake (Hidden Lake) lies in the east-central portion of the tract and has marshy borders. Both lakes are surrounded by well-drained upland.

A combination of Quercus (oak)-Carya (hickory) forest and old-field communities occupy the uplands. Swamp forests of Fraxinus nigra (black ash), Quercus bicolor (swamp white oak), Tilia americana (basswood), Acer rubrum (red maple) and Ulmus rubra (slippery elm) surround the lake-border communities. On the bog mat proper, a Larix laricina (tamarack)-Toxicodendron vernix (poison sumac) swamps backs an open sphagnum-sedge community, supporting many typical herbaceous and shrub-by bog species.

Wildlife of the preserve has not been reported.



## REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: Purple Coneflower Plant Preserve

TYPE: natural area preserve

ACREAGE: 21

LOCATION: Sect. 28, T43N, R5W, Mackinac Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1969, July 28

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: This unforested tract on the Niagaran Cuesta supports a probably introduced population of Echinacea pallida (purple coneflower), a Midwest and Great Plains prairie species. Among the other common plants are Anaphalis margaritacea (pearly everlasting), Monarda fistulosa (wild bergamot) and Hypericum perforatum (St. John's-wort).

Flicker, kingbird, catbird, indigo bunting and goldfinch are a few of the birds reported from the preserve.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Rare Fern Plant Preserve

TYPE: natural area preserve

ACREAGE: 25

LOCATION: T43N, R2W, Mackinac Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, May 9

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Located on the dolomitic Niagaran Cuesta, the area is strewn with large limestone boulders and rocky escarpments. The preserve supports a rich Acer saccharum (sugar maple) forest in which shade-and moisture-loving mosses and ferns abound. Among the many ferns present are Polystichum lonchitis (holly fern), Adiantum pedatum (maidenhair fern) and Asplenium trichomanes (maidenhair spleenwort).

Bear, raven, snowy owl and pileated woodpecker are reported from the general area.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens (leaflet).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Rattlesnake Master Plant Preserve

TYPE: natural area preserve

ACREAGE: 3

LOCATION: Sect. 15, T5S, R11W, St. Joseph Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1977, March 22

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: dirt road into property

MANAGEMENT: none

GENERAL CHARACTER: This small preserve is situated on glacial outwash with level topography. Vegetation consists of very open Quercus velutina (black oak)-Prunus serotina (black cherry) woodland, and the preserve derives its name from the relative abundance of Eryngium yuccifolium (rattlesnake master). Other important herbaceous and shrubby species include Andropogon scoparius (little bluestem), Carex bicknellii (sedge), Danthonia spicata (poverty grass), Ceanothus americanus (New Jersey Tea) and Lespedeza sp. (bush clover).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Red Pine Research Natural Area

TYPE: natural area preserve/managed preserve

ACREAGE: 640

LOCATION: Sects. 11-14, T44N, R14W, Schoolcraft Co.

PROTECTION: designation as Research Natural Area by U.S. Fish &  
Wildlife Service

DATE OF PROTECTION: 1948, September 21

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney National Wildlife  
Refuge

DEVELOPMENTS: dirt road, waterfowl impoundment

MANAGEMENT: waterfowl management on impoundment

GENERAL CHARACTER: The sandy former bed of glacial Lake Algonquin forms the basic topography of this preserve. An upland plateau occupies most of the acreage west of the Driggs River, which bisects the property. Adjacent to and east of the river, the water table is at or near the surface, and "T Pool West", a Refuge waterfowl impoundment, lies in this area.

Pine forests cover the upland 200 acres of the preserve, with half dominated by Pinus resinosa (red pine) and half by Pinus banksiana (jack pine). A portion of muskeg invades the tract's western boundary, but all other wetlands lie along the river itself--where shrub and Picea (spruce) swamps prevail--or to the east, where T-Pool is surrounded by open marsh.

Deer, bear, small mammals and various waterfowl are reported from the area.





## REFERENCES:

Federal Committee on Ecological Reserves. 1977. A directory of research natural areas on federal lands of the United States of America. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883



DESIGNATION: Red Wing Acres Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 40

LOCATION: Sect. 17, T8N, R13E, St. Clair Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1960, December 10

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The tract lies on a sandy glacial lakebed once occupied by cranberry marsh. However, drainage, peat fires and cultivation in the early 1900's have left a combination of Populus (aspen) upland and Salix spp. (willow)-Typha angustifolia (cattail) marsh.

The preserve harbors a diversity of wildlife, including mink, Massasauga rattlesnake and over 75 species of nesting birds.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Riverbank Sanctuary

TYPE: natural area preserve

ACREAGE: 23

LOCATION: Sect. 34, T42N, R16W, Schoolcraft Co.

PROTECTION: ownership by Michigan Audubon Society

DATE OF PROTECTION: 1949

OWNERSHIP: Michigan Audubon Society

ADMINISTRATION: Michigan Audubon Society

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on a flat, sandy glacial lake plain and fronts on the Indian River. Pinus resinosa (red pine) and Picea mariana (black spruce) dominate over most of the acreage. However, along the river, Thuja occidentalis (white cedar), Tsuga canadensis (hemlock), Pinus strobus (white pine) and Abies balsamea (balsam fir) prevail.

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Michigan Audubon Society  
7000 N. Westnedge  
Kalamazoo, MI 49001



DESIGNATION: Riverbend Natural Area *Nature Sanctuary (Grand Creek)*

TYPE: natural area preserve/managed preserve

ACREAGE: 120

LOCATION: Sect. 31, T3N, R2W; Sect. 6, T2N, R2W, Ingham Co.

PROTECTION: resolution by Ingham County Parks Trustees

DATE OF PROTECTION: ca. 1976

OWNERSHIP: Ingham County

ADMINISTRATION: Ingham County Parks Trustees

DEVELOPMENTS: foot trail system, interpretive facility

MANAGEMENT: planting for wildlife food and cover in certain areas

GENERAL CHARACTER: This preserve borders on the Grand River where it flows through a gently-rolling till plain. Nearly twenty percent of the tract's acreage consists of floodplain. A 2-acre pond occupies the site of a former gravel pit.

The preserve's upland forest is a young Acer saccharum (sugar maple)-Fagus grandifolia (beech) association in which Quercus alba (white oak), Quercus rubra (red oak) and Prunus serotina (black cherry) are also important. A large portion of the tract's upland supports old fields in various stages of succession.

Wildlife of the area includes mink, fox, deer and over 120 bird species.

#### REFERENCES:

Deming, S. Ingham County Parks Dept. (personal communication).

ADDRESS: Ingham County Park Trustees  
301 Bush St.  
Mason, MI 48854





DESIGNATION: Robert Powell Memorial Nature Sanctuary (Bean Creek  
Nature Sanctuary)

TYPE: natural area preserve

ACREAGE: 55

LOCATION: Sect. 33, T7S, R1E, Lenawee Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1967

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The Sanctuary lies on a till plain near the eastern edge of the Wabash Moraine and is bordered by Bean Creek. Much of the area consists of floodplain.

Common tree and shrub species in this lowland forest include Asimina triloba (pawpaw), Aesculus glabra (Ohio buckeye), Zanthoxylum americanum (prickly ash), Staphylea trifoliata (bladdernut), Populus tremuloides (quaking aspen) and Crataegus spp. (hawthorn). In all, nearly 50 tree and shrub species are known from this relatively small area.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens, Michigan

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Robinson Preserve

TYPE: natural area preserve

ACREAGE: 80

LOCATION: Sect. 21, T7S, R20W, Berrien Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1968, November 29

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: The Nature Conservancy

MANAGEMENT: none

DEVELOPMENTS: dirt road, abandoned residence

GENERAL CHARACTER: The topography is diverse, consisting of sandy glacial lakebed, low fossil dunes, a deeply cut stream valley and some clayey till plain. Second growth forest and open woodland dominate the preserve's once-cultivated ground. Old apple orchards may still be found, but young forests of Acer rubrum (red maple), Sassafras albidum (sassafras), Prunus serotina (black cherry) and Populus grandidentata (big-tooth aspen) cover most of the acreage. A stream-cut ravine--the preserve's least-disturbed habitat--supports a Fagus grandifolia (beech)-Acer saccharum (sugar maple) association.

Red fox, opossum and raccoon inhabit the area, as do the yellow-billed cuckoo, scarlet tanager, indigo bunting and red-tailed hawk.

REFERENCES:

Lindsey, A.A. and L.K. Escobar. 1976. Eastern deciduous forest Vol. 2, Beech-maple region. U.S. Govt. Printing Off. Washington, D.C.

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Roscommon Red Pines Nature Study Area

TYPE: natural area preserve

ACREAGE: 160

LOCATION: Sect. 2, T24N, R1W, Roscommon Co.

Houghton Lake State Forest

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1966, May 13

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Forestry Division

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The outstanding feature on this flat, sandy tract is a 34 acre grove of virgin Pinus resinosa (red pine). The stand contains the national champion red pine, and numerous individuals exceed 28 in. dbh. The soil profile, thought to be largely responsible for this outstanding growth, consists of sand underlain by a thin clay layer, then a second layer of sand. Intermixed with the red pine are Pinus strobus (white pine), Quercus spp. (oak) and Prunus serotina (black cherry). A heavy growth of Pinus banksiana (jack pine) surrounds the grove and gives way to an open savannah on the preserve's southeastern corner.

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Forestry Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Sauk Indian Trail Prairie Plant Preserve

TYPE: natural area preserve

ACREAGE: 0.25

LOCATION: Sect. 7, T8S, R10W, St. Joseph Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, May 22

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: This preserve, which occupies a triangle of land bordered by highway and railroad, supports a very rich mesic prairie flora. Important species include Ratibida pinnata (yellow coneflower), Amorpha canescens (leadplant), Andropogon spp. (bluestem) and Solidago rigida (stiff goldenrod).

Wildlife of the area has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Schmude Memorial Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 55

LOCATION: Sect. 31, T4N, R9E, Oakland Co.

PROTECTION: deed restriction

DATE OF PROTECTION: 1975, February

OWNERSHIP: Independence Land Conservancy

ADMINISTRATION: Independence Land Conservancy

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The tract includes part of a lake and the adjacent lowland. Mature Larix laricina (tamarack) swamp forest dominates the acreage, with Typha sp. (cattail) and sedge-grass marsh along the lake margin.

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Independence Land Conservancy  
72 N. Main St.  
Clarkston, MI 48016



DESIGNATION: Schwark Road Prairie

TYPE: managed preserve

ACREAGE: 3.6

LOCATION: Sects. 3 & 4, T8S, R20W, Berrien Co.

PROTECTION: lease by The Nature Conservancy

DATE OF PROTECTION: 1978, December

OWNERSHIP: AMTRAK

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: periodic burning and brush removal

GENERAL CHARACTER: This railroad right-of-way strip prairie is mesic in nature, with a clay-loam soil and mollic horizon. Common plant species include Andropogon gerardii (big bluestem), Lupinus perennis (wild lupine) and Pycnanthemum virginicum (mountain mint).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1978. AMTRAK prairie remnant reconnaissance report. Ann Arbor (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Seney National Wildlife Refuge

TYPE: natural area preserve/managed preserve

ACREAGE: 95,455

LOCATION: T44-45N, R13-15W, Schoolcraft Co.

PROTECTION: designation as National Wildlife Refuge

DATE OF PROTECTION: 1935

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service

DEVELOPMENTS: artificial impoundments, gravel and dirt roads, foot trails,  
visitor center, maintenance facilities, picnic area

MANAGEMENT: The Refuge is divided into three general management units  
as follows:

- 1) Eastern unit (approx. 9000 acres)--intensively managed  
for waterfowl habitat with impoundments and other water  
level manipulations; also includes three farm units.
- 2) Central unit (approx. 14,000 acres)--less intensively  
managed, with several impoundments and some timber  
management for wildlife cover; includes two farm units.
- 3) Western unit (approx. 72,000 acres)--lightly managed,  
with few impoundments, limited timber management and  
one farm unit; includes 25,000-acre Wilderness Area  
which is unmanaged. (see listing for Seney Wilderness)

GENERAL CHARACTER: The topography of Seney National Wildlife Refuge is a  
product of glacial outwash and inundation by glacial Lake Algonquin,  
which deposited a veneer of sand over the area. The land slopes from  
northwest to southeast at a rate of about 8 feet per mile. Dominant  
geomorphic features are fossil dunes and beach ridges; and except on



these features, the water table usually lies at or above the mineral soil surface, creating vast marshes throughout the Refuge. Drainage follows the regional slope by way of several streams which join the Manistique River as it flows through the Refuge's southeast corner.

Upland plant communities are concentrated in the southeast and northwest; most prevalent are Pinus banksiana (jack pine), Pinus resinosa (red pine) and mixed conifer associations. Hardwood communities, more limited in extent, are largely Populus (aspen)-dominated. The Manistique Swamp covers over fifty percent of the Refuge's total acreage. Its open marsh or muskeg is dotted with swamp forests of Larix laricina (tamarack) and Picea mariana (black spruce). (See listing for Strangmoor Research Natural Area.)

Beaver, mink, muskrat, otter, coyote, fox, bear and bobcat are among the many mammals of the Refuge. Well over 200 bird species are also known from the area.

#### REFERENCES:

- Bergquist, S.G. 1936. The Pleistocene history of the Tahquamenon and Manistique drainage region of the northern peninsula of Michigan. Mich. Geol. Surv. Publ. No. 40.
- Heinselman, M.L. 1965. String bogs and other patterned organic terrain near Seney, Upper Michigan. Ecology 46:185-188.

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883





DESIGNATION: Seney Wilderness

TYPE: natural area preserve

ACREAGE: 25,150

LOCATION: T44-46N, R15W; T45N, R16W, Schoolcraft Co.

Seney National Wildlife Refuge

PROTECTION: under Federal Wilderness Act

DATE OF PROTECTION: 1970, October 23

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney Nat. Wildlife Refuge

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Vast boglands dominate the landscape of the Seney Wilderness. Fossil dunes scattered throughout the area rise above the water table to produce a patterned vegetation or "strangmoor". (See listing for Strangmoor Research Natural Area.) Uplands along the area's northern and western portions support Populus (aspen) and mixed conifer forests which developed following the removal of Pinus strobus (white pine) and subsequent fires. A wildfire in 1976 again burned most of the area.

Several important wildlife species reported from the preserve include eastern timber wolf, bald eagle and moose. Other, more typical, inhabitants are bear, coyote, fox, mink, muskrat, American widgeon and spruce, ruffed and sharp-tailed grouse. Preliminary reports indicate a positive effect of the 1976 fire on wildlife populations and diversity, with production of a habitat mosaic through irregular burning.



## REFERENCES:

Bergquist, S.G. 1936. The Pleistocene history of the Tahquamenon and Manistique drainage region of the northern peninsula of Michigan. Mich. Geol. Surv. Publ. No. 40.

Heinselman, M.L. 1965. String bogs and other patterned organic terrain near Seney, Upper Michigan. Ecology 46: 185-188.

U.S. Fish and Wildlife Service. 1979. Seney and Huron Island Wilderness Areas, Michigan. U.S. Govt. Printing Off. Washington, D.C. (pamphlet).

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883



DESIGNATION: Seven Ponds Nature Center

TYPE: natural area preserve/managed preserve

ACREAGE: 243

LOCATION: Sects. 17 & 20, T6N, R11E, Lapeer Co.

PROTECTION: ownership by Michigan Audubon Society

DATE OF PROTECTION: 1966

OWNERSHIP: Michigan Audubon Society

ADMINISTRATION: Michigan Audubon Society

DEVELOPMENTS: interpretive building, staff homes, maintenance barn,  
foot trails, prairie reconstruction plot

MANAGEMENT: burning of prairie plot, planting of food species in  
waterfowl management area

GENERAL CHARACTER: The preserve straddles the boundary between an interlobate glacial moraine and low-lying, pitted outwash. A series of small, eutrophic lakes occur on the latter and occupy most of the preserve's western half. In the lowland around the lakes, swamp forests of Acer rubrum (red maple) and Thuja occidentalis (white cedar) merge with lake-edge thickets of Cornus sp. (dogwood), Typha latifolia (cattail) and Decodon verticillata (swamp loosestrife). The eastern upland portion of the site supports primarily old fields, with the exception of a ten-acre prairie reconstruction.

Over 190 bird species have been sighted on the preserve. A number of small mammals are present, in addition to common and rare amphibians.

REFERENCES:

Hayes, D. Naturalist, Seven Ponds Nature Center (personal communication).

ADDRESS: Seven Ponds Nature Center  
3854 Crawford Rd.  
Dryden, MI 48428



DESIGNATION: Shadbrush Nature Study Area

TYPE: natural area preserve

ACREAGE: 70

LOCATION: Sect. 29, T3N, R12E, Macomb Co.

Rochester-Utica Recreation Area

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1966, April 8

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: The tract lies in a broad valley of lake plain/river delta sediments cut by glacial meltwaters. The modern Clinton River now occupies the lowest part of this valley and forms the preserve's eastern boundary. The steep banks of the fossil river valley border the area on the south. A mixed hardwood forest of Fagus grandifolia (beech), Acer saccharum (sugar maple) and Quercus spp. (oak) on these peripheral slopes gives way to a Larix laricina (tamarack)-Thuja occidentalis (white cedar)-Betula allegheniensis (yellow birch) swamp which dominates the preserve's interior. Typha (cattail) marsh and wet meadows border the Clinton River.

Wildlife of the preserve has not been reported.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: Shannon Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 20

LOCATION: Sects. 31 & 32, T4N, R6E, Livingston Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1977, June

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The preserve is geomorphically diverse and includes till plain, glacial outwash and, most widespread, interlobate moraine. The Lake Shannon flooding serves as its western border and North Ore Creek flows through the property. Upland plant communities include hardwood forest, old field and pine plantation. Marshy flood plains flank both Lake Shannon and North Ore Creek.

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

1875

1876

1877

DESIGNATION: Shiawassee National Wildlife Refuge *Shiawassee sp. wild*  
 TYPE: managed preserve *Shiawassee (red sandy grass), Scirpus spp. (swamp)*  
 ACREAGE: 8897 *Shiawassee (swamp)*

LOCATION: T11N, R4E, Saginaw Co.

PROTECTION: designation as National Wildlife Refuge

DATE OF PROTECTION: 1953

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service

DEVELOPMENTS: extensive dike system to control flooding, pump stations  
 and water level control structures

MANAGEMENT: primarily for waterfowl habitat; cultivation of 1800 acres  
 for wildlife food, maintenance of moist soil units (600  
 acres), pools (750 acres) and grassland (500 acres) for  
 waterfowl nesting

GENERAL CHARACTER: The Refuge lies primarily on the Shiawassee Flats, a  
 former plain of glacial Lake Saginaw, where the Saginaw River is joined  
 by three of its major tributaries--the Cass, Flint and Tittabawassee  
 Rivers. A series of Nipissing and Algoman beach ridges lies in the  
 Refuge's northeast corner. These and the valleys of the Saginaw River  
 and its tributaries constitute the only notable geomorphic features;  
 the remainder of the acreage consists of flood plain and undergoes  
 periodic inundation.

Hardwood swamp forests of Acer saccharinum (silver maple), Ulmus  
americana (American elm), Acer rubrum (red maple) and Fraxinus americana  
 (white ash) cover about 35% of the Refuge. The remaining acreage is un-  
 forested except for scattered Salix spp. (willow) and Populus deltoides  
 (cottonwood). Dominants in these marsh and moist soil units include



Typha spp. (cattail), Polygonum spp. (smartweed), Echinochloa sp. (wild millet), Phalaris arundinacea (reed canary grass), Scirpus spp. (bulrush) and Lythrum salicaria (loosestrife).

The Refuge supports a diversity and abundance of wildlife. Deer, red fox, beaver and mink are common mammals. Among the permanent and seasonal birds are great egret, bald eagle, osprey, black-crowned night heron, lapland longspur and whistling swan, to mention only a few.

#### REFERENCES:

Environmental Assessment for the Shiawassee National Wildlife Refuge,  
Saginaw, Michigan (preliminary). Undated (xerox).

ADDRESS: Shiawassee National Wildlife Refuge  
6975 Mower Rd. RR #1  
Saginaw, MI 48601



DESIGNATION: Snake Island-Mud Lake Nature Study Area

TYPE: natural area preserve

ACREAGE: 244

LOCATION: Sect. 26, T39N, R1W, Mackinac Co.

Black Lake State Forest

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1955, December 19

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Forestry Division

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Bois Blanc dolomite underlies this preserve, which is a lowland with numerous swamps, ponds and hollows. Mud Lake is included, as well as frontage on both Lake Thompson and Lake Huron. The small Snake Island is usually connected to the main island by a narrow land bridge. Dominants on this forested tract are Thuja occidentalis (white cedar) and Betula papyrifera (paper birch), variously associated with Larix laricina (tamarack), Abies balsamea (balsam fir) and Picea glauca (white spruce).

Evidence of extensive beaver workings exist in the area.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Forestry Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: South Campus Nature Preserve

TYPE: natural area preserve

ACREAGE: 10

LOCATION: T1N, R12E, Macomb Co.

City of Warren

PROTECTION: resolution by College Trustees

DATE OF PROTECTION: 1977, December

OWNERSHIP: Macomb County Community College

ADMINISTRATION: South Campus Biology Department

DEVELOPMENTS: foot trails, artificial lake

MANAGEMENT: none

GENERAL CHARACTER: The preserve is located on a plain of glacial lake clays. A pond which was filled by the College prior to dedication has been replaced by a recently excavated one-half acre lake, in the hope of attracting migratory waterfowl. The site is forested with a Fagus grandifolia (beech)-Acer saccharum (sugar maple) association which includes Juglans nigra (black walnut), Juglans cinerea (butter-nut) and Carya ovata (shagbark hickory).

Squirrel, raccoon, horned owl and finches are among the wildlife reported from the area.

REFERENCES:

Arnfield, E.A. Macomb County Community College, South Campus  
Biology Department (personal communication).

ADDRESS: Biology Department  
Macomb County Comm. College, South Campus  
14500 12 Mile Rd.  
Warren, MI 48093



DESIGNATION: South Island

TYPE: natural area preserve

ACREAGE: 13

LOCATION: Sect. 27, T27N, R12W, Grand Traverse Co.

PROTECTION: ownership by Long Lake Preservation Association

DATE OF PROTECTION: 1978, September 1

OWNERSHIP: Long Lake Preservation Association

ADMINISTRATION: Long Lake Preservation Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: South Island is one of several islands in Long Lake, which lies in an area of glacial outwash southwest of Traverse City. The island supports a forest which includes Tsuga canadensis (hemlock), Fagus grandifolia (beech), Acer rubrum (red maple) and Pinus strobus (white pine).

Wildlife of the preserve has not been reported.

REFERENCES:

Strong, C. President, Long Lake Preservation Association (personal communication).

ADDRESS: Long Lake Preservation Association  
131 E. State St.  
Traverse City, MI 49684



DESIGNATION: St. Clair-Former Schenck Woods Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 124

LOCATION: Sects. 16 & 17, T6N, R16E, St. Clair Co.

PROTECTION: ownership by Michigan Nature Association  
(resolution by Detroit Audubon Society)

DATE OF PROTECTION: 1977, May

OWNERSHIP: Michigan Nature Association (49 acres)  
Detroit Audubon Society (75 acres)

ADMINISTRATION: Michigan Nature Association  
Detroit Audubon Society

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Glaciolacustrine sediments slope gently to the south in this low-lying tract, near which the Pine River flows. It supports a rich, moist woods of Fagus grandifolia (beech), Tsuga canadensis (hemlock) and Betula allegheniensis (yellow birch) with a dense spring flora.

Wildlife of the preserve has not been reported.

REFERENCES:

Daubendiek, B.A. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Strangmoor Bog Research Natural Area

TYPE: natural area preserve

ACREAGE: 640

LOCATION: Sect. 33, T45N, R15W, Schoolcraft Co.

**Seney National Wildlife Refuge**

PROTECTION: designation as Research Natural Area by U.S. Fish &  
Wildlife Service

DATE OF PROTECTION: 1966

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney National Wildlife  
Refuge

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: Now part of the larger Strangmoor Bog National

Natural Landmark (9500 acres), the preserve consists of Algonquin lake bed inclined slightly to the southeast, and strewn with fossil dunes and sandbars lying perpendicular to the regional drainage. Vegetation is patterned into bands which parallel that slope, producing "string bog" or strangmoor. A primarily boreal phenomenon, strangmoor reaches its southernmost North American occurrence here at Seney.

Fossil dunes support Pinus resinosa (red pine)-Pinus strobus (white pine) associations, which grade downslope (local and regional) into "tails" of bog forest dominated by Larix laricina (tamarack). Separating these scattered knolls and tails of forest are linear expanses of open bogland, which themselves are often crossbanded by low ridges of Betula pumila (swamp birch), Potentilla fruticosa (shrubby cinquefoil) and Salix spp. (willow). The intervening lower strips or "flarks" are





dominated by characteristic herbaceous bog species. Although this area was largely burned in the 1976 fire, leaving little living vegetation, it should be noted that fire is a normal and not uncommon component of many natural ecosystems, and will serve merely to retard succession, without radically altering its course.

Animals inhabiting the area include deer, bear, fox, mink and muskrat.

#### REFERENCES:

Federal Committee on Ecological Reserves. 1977. A directory of research natural areas on federal lands of the United States of America. U.S. Govt. Printing Off. Washington, D.C.

Heinselman, M.L. 1965. String bogs and other patterned organic terrain near Seney, Upper Michigan. Ecology 46:185-188.

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883



DESIGNATION: Sturgeon Bay-Sucker Creek Natural Area Preserve

TYPE: natural area preserve

ACREAGE: 550

LOCATION: Sects. 28, 29, 32 & 33, T39N, R5W, Emmet Co.

Wilderness State Park

PROTECTION: dedicated under administrative authority of Natural

Resources Commission

DATE OF PROTECTION: 1951, April 19

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: dirt road

MANAGEMENT: none

GENERAL CHARACTER: The topography of the preserve was formed by the receding shore of ancestral Lake Michigan, which left a series of parallel beach ridges with intervening swales. A strip of active dunes forms the modern shore. Big Sucker and Little Sucker Creeks flow through the tract, the latter forming its northern boundary.

The inland is forested with Pinus spp. (pine) on the ridges and supports marsh, shrub swamp and bog forest in the swales. Swamp hardwoods border some sections of Big Sucker Creek, and include Fraxinus nigra (black ash), Acer rubrum (red maple) and Ulmus americana (elm). On the active shore dunes, scattered Pinus strobus (white pine) and Thuja occidentalis (white cedar) back a foredune of Ammophila breviligulata (beach grass), Elymus canadensis (wild rye) and other dune species.

Wildlife reported from the Park in general includes red-breasted nuthatch, magnolia warbler, tree swallow, pileated woodpecker, parula



warbler, beaver, bear and water shrew.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Sylvania Recreation Area Botanical Zone

TYPE: natural area preserve

ACREAGE: 5072

LOCATION: T44N, R40W, Gogebic Co.

Sylvania Recreation Area

PROTECTION: special designation by U.S. Forest Service

DATE OF PROTECTION: 1968, December 5

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Forest Service

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: Sylvania lies on a broad glacial moraine deposited by the Lake Superior ice lobe. The hummocky nature of the moraine contributes to a gently rolling topography with numerous lakes. The knolls and slopes are heavily wooded, many with largely unlogged climax forests of Acer saccharum (sugar maple), Betula allegheniensis (yellow birch), Tilia americana (basswood) and Tsuga canadensis (hemlock), with intermixed Pinus strobus (white pine). Drier uplands are often dominated by Pinus resinosa (red pine) and Pinus strobus (white pine). Several bogs are also present, with the usual assemblages of characteristic species, including Picea mariana (black spruce) and Thuja occidentalis (white cedar).

Wildlife of the preserve has not been reported.

REFERENCES:

Voss, E.G. University of Michigan Herbarium (personal communication).

ADDRESS: District Forest Ranger  
Ottawa National Forest  
Watersmeet, MI 49969





DESIGNATION: Tahquamenon Falls State Park Natural Area

TYPE: natural area preserve

ACREAGE: 2265

LOCATION: T49N, R7W, Chippewa Co.; T49N, R8W, Luce Co.

Tahquamenon Falls State Park

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1954, August 13

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: The Tahquamenon River emerges from its swampy course north of the Newberry Moraine to flow over a ledge of Cambrian sandstone at the Upper Falls, then through a gorge of the same material to the Lower Falls. The bedrock on either side of the river is veneered with drift of the Munising Morainal complex, rising to elevations of 800 feet. The moraine is characterized by a rolling topography of knolls and basins, the latter sometimes occupied by lakes or swamps. Near the river, the uplands are dissected with deep ravines cut by tributary streams. The entire moraine in this region was inundated by the waters of glacial Lake Algonquin.

The morainal uplands support mature northern hardwood forests dominated by Fagus grandifolia (beech) and Acer saccharum (sugar maple). Variations include co-dominance of Betula allegheniensis (yellow birch) and Tsuga canadensis (hemlock), an abundance of Pinus strobus (white pine), and almost pure stands of Tsuga canadensis (hemlock). A



spectrum of mesic and bog forests occupy poorly-drained depressions. These range from Betula allegheniensis (yellow birch)-Tsuga canadensis (hemlock)-Acer rubrum (red maple) associations to Picea sp. (spruce)-Thuja occidentalis (white cedar) swamps.

Wildlife of the preserve has not been reported.

#### REFERENCES:

- Bergquist, S.G. 1930. Surface geology of Luce County, Michigan. Pap. Mich. Acad. Sci. 14:437-452.
- Braun, E.L. 1950. Deciduous forests of eastern North America. Hafner. New York.
- Leverett, F. 1928. Moraines and shorelines of the Lake Superior basin. U.S. Geol. Surv. Prof. Paper No. 154.
- Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Thompson Road Prairie

TYPE: managed preserve

ACREAGE: 1.1

LOCATION: Sect. 5, T7S, R16W; Sect. 32, T6S, R16W, Cass Co.

PROTECTION: lease by The Nature Conservancy

DATE OF PROTECTION: 1978, December

OWNERSHIP: AMTRAK

ADMINISTRATION: The Nature Conservancy

DEVELOPMENTS: none

MANAGEMENT: periodic burning and brush removal

GENERAL CHARACTER: This mesic strip prairie is rich in species diversity.

Among the many common species are Andropogon gerardii (big bluestem),  
Ratibida pinnata (yellow coneflower), Silphium terebinthinaceum  
(prairie dock), Sorghastrum nutans (Indian grass) and Solidago rigida  
(stiff goldenrod).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Natural Areas Council. 1978. AMTRAK prairie remnant  
reconnaissance report. Ann Arbor (xerox).

ADDRESS: The Nature Conservancy  
531 N. Clippert  
Lansing, MI 48912



DESIGNATION: Thompson's Harbor Natural Area

TYPE: natural area preserve

ACREAGE: 260

LOCATION: Sects. 11 & 14, T34N, R7E, Presque Isle Co.

Alpena State Forest

PROTECTION: under Michigan's Wilderness and Natural Areas Act

DATE OF PROTECTION: 1979, February 6

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Forestry Division

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The underlying Dundee Formation is evidenced only by a narrow limestone shore, with the remainder of the tract veneered by dune sand. The latter lends a rolling dune and swale topography, especially near the shore.

The high, narrow foredune possesses a typical sand flora, and is backed by a forest of Thuja occidentalis (white cedar), Pinus resinosa (red pine) and Picea glauca (white spruce). Farther inland, Betula papyrifera (paper birch) and Populus spp. (aspens) become dominant.

Wildlife of the Preserve has not been reported.

REFERENCES: none

ADDRESS: Michigan Dept. of Natural Resources  
Forestry Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909





DESIGNATION: Timberland Swamp Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 245

LOCATION: Sects. 27 & 34, T4N, R8E, Oakland Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1967

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Situated on an outwash plain sloping to the south, Timberland Swamp is a relatively flat, low-lying tract which undergoes extensive spring flooding from numerous springs and small streams.

Nearly the entire preserve is wooded with a patchwork of hardwood swamp and Fagus grandifolia (beech)-Acer saccharum (sugar maple) forest, mostly secondary, but with a scattering of large virgin trees. The swamp forest is dominated by Fraxinus spp. (ash), Tilia americana (basswood), Betula allegheniensis (yellow birch) and Acer spp. (maple). A marsh including Typha latifolia (cattail), Solidago spp. (goldenrod) and Eupatorium spp. (joe-pye-weed) occupies the preserve's northeastern corner.

Wildlife of the area includes opossum, fox, mink, ruffed grouse, great horned owl and hairy and red-bellied woodpecker.

#### REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Tobico Marsh

TYPE: managed preserve

ACREAGE: 1652

LOCATION: Sects. 13, 14, 23-25, T15N, R4E; Sects. 19 & 30, T15N, R5E  
Bay Co.

Tobico Marsh State Game Area

PROTECTION: dedicated under administrative authority of Natural  
Resources Commission

DATE OF PROTECTION: 1966, December 19

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Wildlife Division

DEVELOPMENTS: dike and wier at south end

MANAGEMENT: water level control

GENERAL CHARACTER: Tobico Marsh is bounded on the west by Nipissing beach ridges and on the east by modern beach ridges. About one-quarter of the preserve is inundated or marshy.

The vascular flora of the open lagoon is typified by species of Ceratophyllum (hornwort), Myriophyllum (water milfoil), Potamogeton (pondweed) and Lemna (duckweed). Masses of Typha angustifolia (cattail) from the surrounding marsh often detach to become free-floating mats. Other marsh components include Scirpus spp. (bulrush), Salix spp. (willow), Pontederia cordata (pickerelweed), Carex spp. (sedge) and Onoclea sensibilis (sensitive fern). The fossil beach ridges to the west are forested with Pinus strobus (white pine), Quercus spp. (oak), Acer spp. (maple), Populus sp. (aspen) and Betula papyrifera (paper birch). Intervening wetpannes support swamp forests of Fraxinus nigra (black ash), Acer rubrum (red maple) and Nyssa sylvatica (pepperidge).



Common wildlife in the lagoon and marsh include terns, great blue heron, least bittern, belted kingfisher, ruddy duck, muskrat, numerous turtle species and leopard frog.

REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Wildlife Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Toumey Woodlot

TYPE: natural area preserve

ACREAGE: 14

LOCATION: Sect. 30, T4N, R1W, Ingham Co.

PROTECTION: resolution by Dept. of Forestry, Michigan State University

DATE OF PROTECTION: 1939

OWNERSHIP: Michigan State University

ADMINISTRATION: Department of Forestry

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: This preserve, which lies on glacial till, supports an essentially virgin Fagus grandifolia (beech)-Acer saccharum (sugar maple) forest. Numerous individuals exceed 2 feet dbh. and are from 200 to 300 years old. Associated species include Ulmus spp. (elm), Tilia americana (basswood), Quercus rubra (red oak) and Prunus serotina (black cherry).

Wildlife of the preserve has not been reported.

#### REFERENCES:

Schneider, G. 1966. A twenty-year ecological investigation in a relatively undisturbed sugar maple-beech stand in southern Michigan. Res. Bull. 15, Mich. Agr. Expt. Sta.

ADDRESS: Department of Forestry  
Michigan State University  
East Lansing, MI 48824





DESIGNATION: Trillium Trail Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 20

LOCATION: Sect. 35, T6N, R14E, St. Clair Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1963

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Situated on a narrow strip of waterlaid moraine in southern St. Clair County, the tract is primarily upland. Deciduous forest and old fields share this upland, while a Larix laricina (tamarack) fen occupies the extreme southeastern corner.

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Two Wilderness Islands Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 15

LOCATION: Delta Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1979, January 10

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: These adjacent islands in Lake Michigan consist of limestone gravel of the Niagaran Cuesta. The smaller of the two islands is sparsely vegetated but supports large colonies of Caspian tern and herring gull, in addition to some double crested cormorants. On the larger island, a forest of Thuja occidentalis (white cedar), Betula papyrifera (paper birch) and Ulmus americana (elm) supports a colony of black-crowned night herons, while many herring gulls nest on the beaches.

REFERENCES:

Michigan Nature Association. 1979. Two Wilderness Islands Nature Sanctuary. Mich. Nat. Assoc. Mount Clemens (leaflet).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: Union Springs Scenic Site

TYPE: natural area preserve

ACREAGE: 160

LOCATION: Sect. 20, T51N, R42W, Ontonagon Co.

Porcupine Mountains Wilderness State Park

PROTECTION: under Michigan's Wilderness and Natural Areas Act

DATE OF PROTECTION: 1976, May 10

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: The primary feature of this preserve is Union Spring, the second largest natural spring in the state. The site occupies a relatively low area in the Porcupines and Thuja occidentalis (white cedar) swamp surrounds the spring and its resultant stream. In the adjacent uplands, Populus spp. (aspen) dominate a young successional forest.

Beaver workings are evident along the stream, but other wildlife has not been described apart from that of the Park in general. (See Porcupine Mountains Wilderness Area.)

REFERENCES: none

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Upson Lake Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 88

LOCATION: Sect. 36, T59N, R30W, Keweenaw Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1977, January 13

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: This tract lies in the valley of weathered volcanic rock between the Outer and Great Conglomerates, with Upson Lake occupying the lowest portion of that valley. An emergent aquatic community of Nuphar variegatum (bullhead lily), Nymphaea odorata (fragrant water lily), Lysimachia terrestris (swamp loosestrife), Myrica gale (sweet gale) and Chamaedaphne calyculata (leatherleaf) skirts the lake's western margin. Backing this water's edge community is an Abies balsamea (balsam fir)-Picea glauca (white spruce)-Larix laricina (tamarack) swamp which gives way to Pinus resinosa (red pine) on the adjoining upland.

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043





DESIGNATION: Vermilion Point

TYPE: natural area preserve

ACREAGE: 9.7

LOCATION: Sect. 2, T50N, R7W, Chippewa Co.

PROTECTION: deed restriction

DATE OF PROTECTION: 1976, December 21

OWNERSHIP: Lake Superior State College

ADMINISTRATION: Lake Superior State College

DEVELOPMENTS: abandoned Coast Guard Rescue Station

MANAGEMENT: none

GENERAL CHARACTER: The property fronts on Lake Superior with a broad sandy beach. Inland, fossil beach ridges and intervening swales create a linearly patterned topography. The former support hemlock-mixed hardwood forests, while the swales are dominated by bog species, including Carex spp. (sedge), Eriophorum spp. (cotton-grass) and Vaccinium spp. (cranberry).

Wildlife of the preserve has not been reported in detail.

REFERENCES: none

ADDRESS: Lake Superior State College  
Sault St. Marie, MI 49783



DESIGNATION: Vorhees Brothers Wildlife Sanctuary

TYPE: natural area preserve

ACREAGE: 40

LOCATION: Sect. 25, T1S, R5W, Calhoun Co.

PROTECTION: ownership by Michigan Audubon Society

DATE OF PROTECTION: 1948

OWNERSHIP: Michigan Audubon Society

ADMINISTRATION: Michigan Audubon Society

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve borders a moraine of the Charlotte complex and has a sloping upland topography with several deeply cut ravines. A mature, possibly virgin, forest dominated by Acer saccharum (sugar maple), Quercus spp. (oak) and Prunus serotina (black cherry) covers the site, and includes some unusually large individual trees. Other tree species present include Fagus grandifolia (beech), Carya spp. (hickory), Tilia americana (basswood) and Liriodendron tulipifera (tuliptree).

Wildlife of the preserve has not been reported in detail.

REFERENCES:

Reed, D. Michigan Audubon Society (personal communication).

ADDRESS: Michigan Audubon Society  
7000 N. Westnedge  
Kalamazoo, MI 49001



DESIGNATION: Wagner Falls Scenic Site

TYPE: natural area preserve

ACREAGE: 23

LOCATION: Sect. 14, T46N, R19W, Alger Co.

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1956, November 9

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: Wagner Creek has cut deeply through the drift of the Munising Moraine to flow over a siliceous dolomite underlain by a weak Cambrian sandstone. The stream traverses these formations in a series of low falls, with a total drop of about 150 feet. A climax northern hardwood forest occupies part of the drift-covered upland, in company with some young hardwood stands. Important species in these associations include Acer saccharum (sugar maple), Betula allegheniensis (yellow birch) and Tsuga canadensis (hemlock).

Wildlife of the preserve has not been reported.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Warren Dunes Nature Study Area

TYPE: natural area preserve

ACREAGE: 488

LOCATION: Sects. 25 & 26, T6S, R20W, Berrien Co.

Warren Dunes State Park

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1966, April 8

OWNERSHIP: Warren Foundation (leased by State of Michigan)

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: The Warren Dunes include both active, modern dunes and a complex of stabilized fossil dunes of Algonquin, Nipissing and Algoman age. Several blowouts, the largest of which is the Great Warren Dune, invade the forested hills.

A typical sand flora occupies the active dunes along Lake Michigan. In the dune forests, Quercus rubra (red oak), Quercus alba (white oak), Tilia americana (basswood) and Prunus serotina (black cherry) dominate the ridges, while Acer saccharum (sugar maple), Fagus grandifolia (beech) and Tsuga canadensis (hemlock) prevail in the adjacent deep valleys.

Wildlife of the preserve has not been reported.

#### REFERENCES:

- Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.
- Tague, G.C. 1977. The post-glacial geology of the Grand Marais Embayment in Berrien County, Michigan. Mich. Geol. Surv. Publ. No. 45, Pt. 1.





ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Warren Woods Nature Study Area

TYPE: natural area preserve

ACREAGE: 179

LOCATION: Sect. 27, T7S, R20W, Berrien Co.

Warren Dunes State Park

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1966, April 8

OWNERSHIP: Warren Foundation (leased by State of Michigan)

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: foot trails

MANAGEMENT: none

GENERAL CHARACTER: Warren Woods lies on a gently rolling till plain into which the Galien River has cut deeply to create a diverse topography. A narrow flood plain borders the river and extends into some of the associated ravines.

The upland supports a fine example of essentially virgin beech-maple climax forest. Intermixed with the dominants--Fagus grandifolia (beech) and Acer saccharum (sugar maple)--are Ulmus americana (elm), Quercus rubra (red oak) and Prunus serotina (black cherry). The lowland and flood plain associations are more diverse, and include Acer rubrum (red maple), Tilia americana (basswood), Platanus occidentalis (sycamore) and Fraxinus americana (white ash), as well as the upland forest dominants.

Small mammals typical of the region, such as raccoon, muskrat, skunk and opossum, are common in the woods. Resident birds include



woodpecker, sapsucker, creeper, nuthatch and pewee.

REFERENCES:

Billington, C. 1924. The flowering plants and ferns of Warren Woods, Berrien County, Michigan. Pap. Mich. Acad. Sci. 4:81-109.

Cain, S.A. 1935. Studies on virgin hardwood forest; III. Warren Woods, a beech-maple climax forest in Berrien County, Michigan. Ecology 16:500-513.

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Waterloo Black Spruce Bog Nature Study Area

TYPE: natural area preserve *Natural Resources*

ACREAGE: 40 *Acres*

LOCATION: Sect. 16, T1S, R2E, Jackson Co.

Waterloo Recreation Area

PROTECTION: under Michigan's Wilderness and Natural Areas Act

(originally by resolution of Natural Resources Commission)

DATE OF PROTECTION: 1967, July 14

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on a glacial outwash plain and includes the southern portion of a large ice-block depression which has been completely filled through bog succession.

Acer rubrum (red maple) and Quercus rubra (red oak) dominate the moist upland surrounding the bog proper, which supports one of the southernmost known occurrences of Picea mariana (black spruce) swamp forest. Larix laricina (tamarack) is also important here as are Vaccinium corymbosum (blueberry), Toxicodendron vernix (poison sumac), Chamaedaphne calyculata (leatherleaf) and Aronia prunifolia (chokeberry), which form an almost impenetrable understory.

Wildlife of the preserve has not been reported.

#### REFERENCES:

- Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.
- Ulrich, K.E. 1979. Net productivity and biomass of a mature southern





Michigan bog. M.S. Thesis, Michigan State University.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: Waugoshance Point Nature Study Preserve

TYPE: natural area preserve

ACREAGE: 250

LOCATION: Sects. 23 & 24, T39N, R5W, Emmet Co.

Wilderness State Park

PROTECTION: dedicated under administrative authority of Natural  
Resources Commission

DATE OF PROTECTION: 1951, April 19

OWNERSHIP: State of Michigan

ADMINISTRATION: Michigan DNR, Parks Division

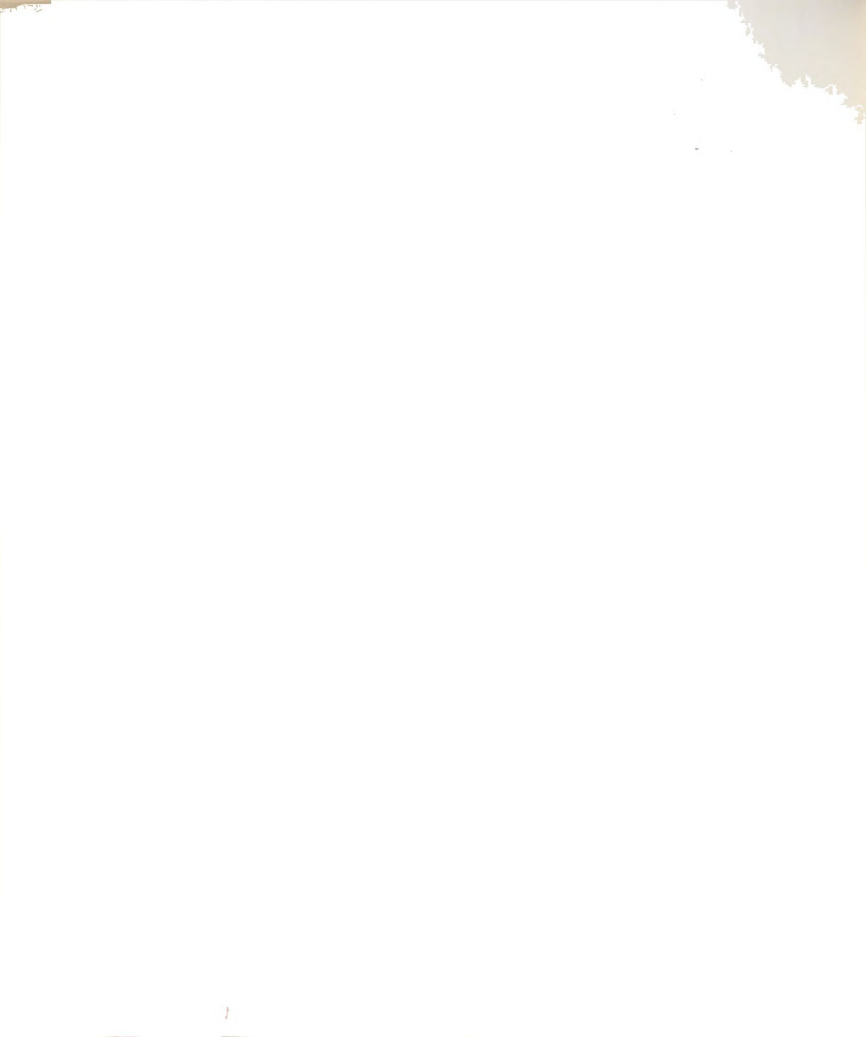
DEVELOPMENTS: foot trails, cabin

MANAGEMENT: none

GENERAL CHARACTER: Waugoshance Point, perched upon a mound of glacial drift, is characterized on the south by scarcely emergent gravel shores, and on the north by low dunes and sandy beaches with constantly evolving offshore bars and dune pools.

The wet gravel shores support Lobelia kalmii (Kalm's lobelia), Selaginella spp., Castilleja coccinea (Indian paintbrush), Habenaria spp. (orchis) and Parnassia glauca (grass-of-Parnassus). On the sandy beaches, a typical dune flora occupies the upland and in the beach pools, Triglochin maritimum (arrow-grass) and Cladium mariscoides (twig rush) are common. The upland interior is forested with mixed hardwoods and conifers, while Thuja occidentalis (white cedar) and Picea glauca (white spruce) dominate low areas.

Birds are particularly abundant on the Point; piping plover, American bittern, nighthawk, bald eagle, common tern and spotted sandpiper are reported to nest here. Mammals reported from the Park in



general include small red and northern flying squirrels, beaver and water shrew.

## REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Michigan Dept. of Natural Resources  
Parks Division  
Stevens T. Mason Bldg.  
Lansing, MI 48909



DESIGNATION: West Wequetonsing Nature Preserve

TYPE: natural area preserve

ACREAGE: 15

LOCATION: Sect. 18, T35N, R5W, Emmet Co.

PROTECTION: ownership by The Nature Conservancy

DATE OF PROTECTION: 1973, December 14

OWNERSHIP: The Nature Conservancy

ADMINISTRATION: Little Traverse Conservancy (lessee)

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on glacio-lacustrine sediments at the base of a steeply wave-cut Nipissing bluff. Drainage is trapped below the surficial sandy soil by a bed of clay to produce moisture conditions which support a hardwood-conifer swamp. Important species in this stand, thought to be largely virgin, include Tsuga canadensis (hemlock), Betula allegheniensis (yellow birch) and Thuja occidentalis (white cedar). Several small areas of Typha angustifolia (cattail) swamp also exist within the preserve.

Wildlife of the preserve includes flying squirrel and pileated woodpecker.

REFERENCES:

Stanley, K.P. 1978. West Wequetonsing Nature Preserve master plan.  
The Nature Conservancy, Michigan Field Office. Lansing (xerox).

ADDRESS: Little Traverse Conservancy, Inc.  
Room 159, Administration Bldg.  
North Central Michigan Bldg.  
1515 Howard St.  
Petoskey, MI 49770





DESIGNATION: White Pigeon River Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 58

LOCATION: Sects. 10, 15 & 16, T8S, R12W, St. Joseph Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1974, August

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: foot trail

MANAGEMENT: none

GENERAL CHARACTER: The preserve lies on the flood plain of the White Pigeon River where it traverses glacial outwash in the southwestern corner of St. Joseph County. The river winds in an ever-evolving course, creating lagoons, abandoned channels and numerous "islands" within the Sanctuary.

The tract is wooded on the upland with Quercus (oak)-Carya (hickory) association and on the lowland flood plain with a diverse swamp forest that includes Platanus occidentalis (sycamore), Fraxinus spp. (ash), Quercus bicolor (swamp white oak) and Ulmus rubra (slippery elm), among many other species. Immediately bordering the river are Salix spp. (willow), Cephalanthus occidentalis (buttonbush) and Saururus cernuus (lizard's tail). The property's southern extension supports an old-field community.

Over 55 bird species are reported to nest within the preserve. These include great blue heron, green heron, prothonotary warbler, acadian flycatcher, indigo bunting and cerulean warbler. Fox squirrel, woodchuck, opossum, skunk and muskrat are mammals common to the preserve.



## REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat.  
Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



DESIGNATION: White Pine Public Use Natural Area

TYPE: natural area preserve

ACREAGE: 30

LOCATION: Sect. 33, T45N, R13W, Schoolcraft Co.

PROTECTION: designation as Public Use Natural Area by U.S. Fish &  
Wildlife Service

DATE OF PROTECTION: 1977, March 16

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Seney National Wildlife  
Refuge

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: This sandy, upland site supports an old-growth  
Pinus strobus (white pine) forest, which typifies the pre-logging  
vegetation of the region. A small stream flows through the site.

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Seney National Wildlife Refuge  
Seney, MI 49883



DESIGNATION: William P. Holliday Forest and Wildlife Preserve

TYPE: natural area preserve/managed preserve

ACREAGE: 500

LOCATION: Sects. 1 & 12, T2S, R9E; Sect. 33, T1S, R9E; Sects. 4-8, T2S,  
R9E, Wayne Co.

PROTECTION: deed restriction

DATE OF PROTECTION: 1958

OWNERSHIP: Wayne County

ADMINISTRATION: Wayne County Road Commission

DEVELOPMENTS: foot trail system, shelters at selected sites

MANAGEMENT: periodic burning of limited prairie areas

GENERAL CHARACTER: The preserve lies on a sandy former glacial lakebed, and is bisected by Tonquish Creek which flows toward the east. Mesic and swamp hardwood forests in various stages of succession dominate the preserve. Quercus alba (white oak), Fraxinus americana (white ash), Acer spp. (maple), Fagus grandifolia (beech), Carya spp. (hickory) and Tilia americana (basswood) are fairly common throughout. In the wettest flood plain areas, Cornus spp. (dogwood), Carpinus caroliniana (hornbeam) and Crataegus sp. (hawthorn) form dense shrub swamps.

Wildlife of the preserve has not been reported.

REFERENCES: none

ADDRESS: Wayne County Road Commission  
726 City-County Bldg.  
Detroit, MI 48226





DESIGNATION: Willow Creek Rock Ledge Nature Sanctuary

TYPE: natural area preserve

ACREAGE: 40

LOCATION: Sect. 26, T49N, R27W, Marquette Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, January 25

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The preserve property consists of a long, narrow strip of land which follows a 100-foot cliff. Above the ledge, a second-growth hardwood forest dominates, while below the ledge, a more mature Tsuga canadensis (hemlock)-northern hardwood association gives way to Thuja occidentalis (white cedar) swamp bordering Willow Creek.

Wildlife of the preserve has not been reported.

REFERENCES:

Holzman, R.W. Michigan Nature Association (personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

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100

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100

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DESIGNATION: Woldumar Nature Study Area

TYPE: natural area preserve

ACREAGE: 188

LOCATION: Sect. 35, T4N, R3W, Eaton Co.

Woldumar Nature Center

PROTECTION: resolution by Nature Way Association

DATE OF PROTECTION: 1967

OWNERSHIP: Nature Way Association

ADMINISTRATION: Nature Way Association

DEVELOPMENTS: foot trail system, observation dock in pond, interpretive building

MANAGEMENT: none

GENERAL CHARACTER: Relief is gentle in this preserve, which lies along the Grand River. Most notable topographically are two ravines cut by tributary streams and an artificial lagoon which adjoins the river near the property's center.

Upland forest communities include two Fagus grandifolia (beech)-Acer saccharum (sugar maple) stands, and a Pinus strobus (white pine)-Picea glauca (white spruce) plantation. Lowlands are largely shrub-dominated with Cornus stolonifera (red-osier dogwood), Salix interior (sandbar willow) and Cephalanthus occidentalis (buttonbush).

Wildlife of the preserve has not been reported.

#### REFERENCES:

Michigan Natural Areas Council. 1979. Reconnaissance, site and other reports Vol. 1 1950-1977. Univ. Microfilms Internat. Ann Arbor.

ADDRESS: Nature Way Association  
5539 Lansing Rd.  
Lansing, MI 48917



DESIGNATION: Woodruff Creek-Hudspeth Memorial Plant Preserve

TYPE: natural area preserve

ACREAGE: 15

LOCATION: Sect. 34, T2N, R6E, Livingston Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1978, December 20

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: short foot trail

MANAGEMENT: none

GENERAL CHARACTER: A bowl-like depression forms the topography of this preserve, and Woodruff Creek flows through its lowland portion. A forest of Quercus alba (white oak) and Carya glabra (pignut hickory) occupies the rim of the bowl, while its slopes support shrub carr in which Betula pumila (dwarf birch) and Populus tremuloides (quaking aspen) dominate. On the bottom of the bowl lies a well-developed fen community with considerable species diversity. Among the common components are Valeriana uliginosa (swamp valerian), Carex stricta (sedge), Sarracenia purpurea (pitcher-plant), Silphium terebinthinaceum (prairie dock) and Potentilla fruticosa (shrubby cinquefoil).

Wildlife of the preserve has not been reported.

REFERENCES:

Kohring, M.A. The Nature Conservancy, Michigan Field Office  
(personal communication).

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043

100-1220

DESIGNATION: Wyandotte National Wildlife Refuge

TYPE: natural area preserve

ACREAGE: 278

LOCATION: T3S, R11E, Wayne Co.

PROTECTION: designation as National Wildlife Refuge

DATE OF PROTECTION: 1961

OWNERSHIP: U.S. Government

ADMINISTRATION: U.S. Fish & Wildlife Service, Shiawassee National  
Wildlife Refuge

DEVELOPMENTS: none

MANAGEMENT: none

GENERAL CHARACTER: The tract consists primarily of open water in the Detroit River (marked by buoys during duck hunting season) and includes Grassy and Mamajuda Islands. Vallisneria americana (wild celery) grows in extensive beds and provides food for overwintering ducks, particularly redhead, canvasback and scaup.

REFERENCES: none

ADDRESS: Shiawassee National Wildlife Refuge  
6975 Mower Rd. RR#1  
Saginaw, MI 48601



THE UNIVERSITY OF CHICAGO

1957

1957

DESIGNATION: Zeerip Drummond Island Memorial Plant Preserve

TYPE: natural area preserve

ACREAGE: 6.2

LOCATION: Sect. 25, T42N, R4E, Chippewa Co.

PROTECTION: ownership by Michigan Nature Association

DATE OF PROTECTION: 1975, December 30

OWNERSHIP: Michigan Nature Association

ADMINISTRATION: Michigan Nature Association

DEVELOPMENTS: none

MANAGEMENT: none

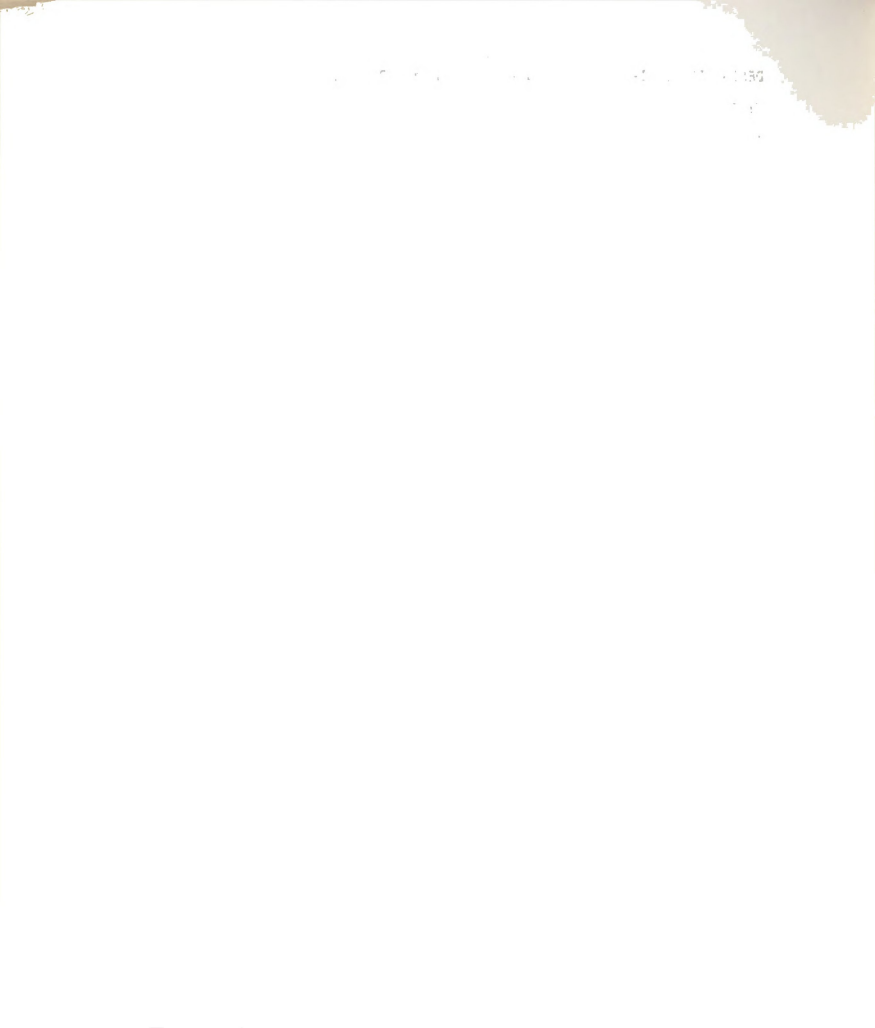
GENERAL CHARACTER: This Drummond Island preserve lies on the calcareous Niagaran cuesta, which is covered here by only a thin soil. The tract lies within one-half mile of the Lake Huron shore, and is densely forested by Abies balsamea (balsam fir), Betula papyrifera (paper birch) and Acer saccharum (sugar maple), with some Populus sp. (aspen) and Thuja occidentalis (white cedar).

Wildlife of the preserve has not been reported.

REFERENCES:

Michigan Nature Association. 1977. Sanctuary guide. Mich. Nat. Assoc. Mount Clemens.

ADDRESS: Michigan Nature Association  
124 Miller  
Mount Clemens, MI 48043



## ONGOING AND PROSPECTIVE PROGRAMS

Most of Michigan's historically-active preservation organizations are continuing or increasing their efforts, as awareness of development pressures on valuable natural areas increases. However, the 1980's should see greater teamwork among preservationists, particularly between The Nature Conservancy and Michigan's Department of Natural Resources, as a statewide natural features inventory gets underway.

## Michigan Natural Heritage Program

The Nature Conservancy, under contract to and in close cooperation with the DNR, expects to initiate a Natural Heritage Program sometime during 1980. The Conservancy has successfully completed similar programs in other states. Its primary goal will be to identify a system of natural areas in Michigan which represents the entire spectrum of natural diversity present. Efforts will then be directed toward assuring preservation of those areas under the Wilderness and Natural Areas Act of 1972. The initial inventory process is expected to require two years for completion.

## Federal Wilderness Additions

The U.S. Forest Service's RARE II program, as described earlier under "Preservation Organizations", has resulted in the recommendation to Congress of eight areas (56,495 acres) for Wilderness designation. These areas (listed in Table 1 with their sizes and counties) will not become Federal Wilderness until Congress acts to designate them (although in the meantime they will be managed as such by the Forest Service).



Table 1. U.S. Forest Service RARE II Wilderness recommendations.

| Tract Name             | County          | Acreage |
|------------------------|-----------------|---------|
| Sylvania               | Gogebic         | 17,974  |
| Sturgeon River Gorge   | Houghton/Baraga | 13,208  |
| Carp River             | Mackinac        | 10,030  |
| Little Silver Addition | Houghton        | 6,136   |
| Horseshoe Bay          | Mackinac        | 5,636   |
| Nordhouse Dunes        | Mason           | 2,919   |
| Round Island           | Mackinac        | 378     |
| Government Island      | Mackinac        | 214     |

Six additional tracts in the Sleeping Bear National Lakeshore will be recommended for Wilderness designation by the National Park Service. (A previous recommendation, submitted in 1975, was returned by the Office of Management and Budget pending the development of a General Management Plan for the Park.) Since the Management Plan is now in its final stages of development, the revised Wilderness recommendations should be submitted to Congress during 1980. However, these tracts cannot become Federal Wilderness until all incompatible uses have been removed--the Park Service estimates that this may require up to fifty years. Again, these tracts will be managed as Wilderness until the time that they are actually designated as such (Brown, pers. comm.).

One further Wilderness evaluation will be conducted in Michigan by the Bureau of Land Management, which holds some 1400 acres in the state, including 800 islands (Bureau of Land Management, 1979). The process is

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scheduled to begin during the summer of 1980. An initial inventory of BLM lands in Minnesota is now in its final stages, and out of 45,344 acres under review there, approximately 160 acres of islands and 21,388 acres of mainland have been recommended for intensive review, the second stage of the inventory process. A study phase will follow, during which final decisions concerning Wilderness recommendations will be made. Those recommendations will then be sent to Congress for action (Bureau of Land Management, 1979). This same evaluation process will be used for Michigan's BLM lands.

#### Miscellaneous Programs

Two other projects in the state hold some promise for natural area preservation. One is the Pictured Rocks National Lakeshore, for which a revised General Management Plan is now being developed, with consideration given to the Beaver Basin (5120 acres) for possible Wilderness recommendation. Alternately, the tract could be maintained with its present "primitive" zone designation, without formal protection or strict management requirements (Gillespie, pers. comm.).

A second natural area preservation program showing considerable promise is that of the Natural Areas Conservancy of West Michigan (NACOWMI). The organization was formed in 1976 to "inventory, acquire and steward ecologically and environmentally valuable natural areas within its designated territory for preservation and enjoyment of these areas in their natural state..." (Natural Areas Conservancy of West Michigan, Inc., undated).

To accomplish this goal, NACOWMI is presently surveying many natural areas for potential as preserve properties, and acquisition programs have





been initiated already for eight tracts. The group hopes to begin raising funds for its first purchase by 1980. The stewardship policies under which these preserves will be managed have already been outlined by NACOWMI in considerable detail, and are designed to protect and maintain the natural ecosystems with minimal human interference.



## CONCLUSION

A total of 156 nature preserves, covering some 350,000 acres have been located by this inventory. Although a few preserves were undoubtedly overlooked, they almost certainly comprise less than 1% of the state's total preserve acreage.

Perhaps of greater importance, though, than the numbers of areas preserved, is the quality of those areas and their contribution toward adequately representing the entire spectrum of Michigan's natural diversity. Until now, no systematic effort has been made to coordinate preservation activities in the state toward that goal, and although preservation organizations are to be commended for their largely independent efforts, this lack of coordination has resulted in obvious deficiencies in Michigan's nature preserve system.

The preservation of geomorphic features has been especially neglected. Except for unusually scenic features (e.g., waterfalls), landforms and geological formations have been protected only through incidental inclusion in biotic preserves. One reason for this oversight is that preservationists frequently lack an awareness of Michigan's great geomorphic diversity and the importance of preserving that diversity. We must recognize that geomorphic features--equally as endangered as biotic features by rampant development--often require even more vigorous effort to preserve because of their size and choiceness for development. For instance, eskers, escarpments, shorelines and moraines not only cover large, oddly-shaped tracts, but offer choice possibilities for mineral extraction and residential and recreational development.

A concentrated effort is clearly needed to "catch up" on protecting Michigan's geomorphic diversity. This will require renewed participation



by geomorphologists, and just as importantly, an increased awareness by active biologists that geomorphology is a primary determinant of biological character and diversity, and is therefore of primary importance in natural area evaluation. These changes are essential if Michigan is to develop a nature preserve system which represents its full natural diversity. Hopefully the proposed Natural Heritage Program will help meet this critical need.

Many choice biotic natural areas are undoubtedly also yet to be preserved or even identified. For example, six percent of Michigan's preserves lie west of Alger and Schoolcraft Counties (excluding Keweenaw), although the area comprises nearly twenty percent of the state's total acreage, most of it relatively undeveloped. And although Kalamazoo County is Michigan's richest in numbers of endangered, threatened and rare plant species, it is among the very poorest in numbers of preserves to protect its diverse and valuable flora. A state-wide Natural Heritage Program should also help to remedy these problems, since its ultimate goal will be to preserve representative natural features throughout the entire state.

Another need, and one which cannot be met by a Natural Heritage Program, is to study existing preserves. Even our Research Natural Areas and Nature Study Areas support little significant research or nature study, as the paucity of references cited in this inventory demonstrates. Typically, the only reference materials available for individual preserves are preliminary reports of their preservation value. In very few cases have preserves been systematically studied subsequent to their protection to determine ecosystem structure and dynamics. Nonetheless, such studies are integral to the management of preserves, since they establish baseline data from which to monitor changes and, if



necessary, adjust management practices accordingly. For instance, it is important to know whether public visitation is adversely impacting a dune ecosystem, or whether an example of white pine forest is succeeding to hardwoods.

This is not to propose that each of Michigan's nature preserves should be immediately studied in detail, for that is clearly not practical or possible. However, they offer a superior selection of outdoor laboratories for students of biological science, and merely taking advantage of their potential for thesis research, field studies, class projects, etc., not only benefits the investigators, but enhances the scientific value and preservation potential of the preserves studied.

Many hard-working preservationists have contributed to our present system of nature preserves, which includes many very fine natural areas. It is now the task of present workers to complete this system--ensuring that each significant natural feature in Michigan will be represented for the future--and finally, to give our preserves the protection and attention which they require and deserve.



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## APPENDICES



## APPENDIX A

### Alphabetical Listing of Preserves

(with cross-references)

1. Algonac State Park Sites
2. Allegan State Game Area Special Habitats
3. Alta Warren Parsons Memorial Nature Sanctuary
4. Alton D. McGaw Memorial Plant Preserve  
AMTRAK Prairie Preserves--see Nos. 7, 33, 61, 117, 132
5. Ann Arbor Wet Prairie
6. Anna Wilcox Memorial Nature Sanctuary
7. Bakertown Fen
8. Barry State Game Area Special Habitat  
Bean Creek Nature Sanctuary--see No. 112
9. Beaver Dam Nature Sanctuary
10. Bernard W. Baker Nature Sanctuary
11. Besser Natural Area
12. Betsy Lake Research Natural Area (see also No. 131)
13. Big Hand Road Nature Sanctuary
14. Big Stone-Cecil Bay Nature Study Preserve (see also Nos. 22, 129, 147)
15. Bird Island Nature Sanctuary
16. Briggs Memorial Nature Sanctuary
17. Brockway Mountain Nature Sanctuary
18. Bullock Creek Nature Sanctuary
19. Calla C. Burr Memorial Plant Preserve
20. Cedar River Nature Sanctuary  
Charles R. Zeerip Memorial Plant Preserve--see No. 156
21. Cranbrook Nature Sanctuary
22. Crane Island Natural Area Preserve (see also Nos. 14, 129, 147)
23. Dayton Wet Prairie
24. Donahey Woods
25. Dukes Research Natural Area
26. Erie Marsh Preserve
27. Estivant Pines Nature Sanctuary

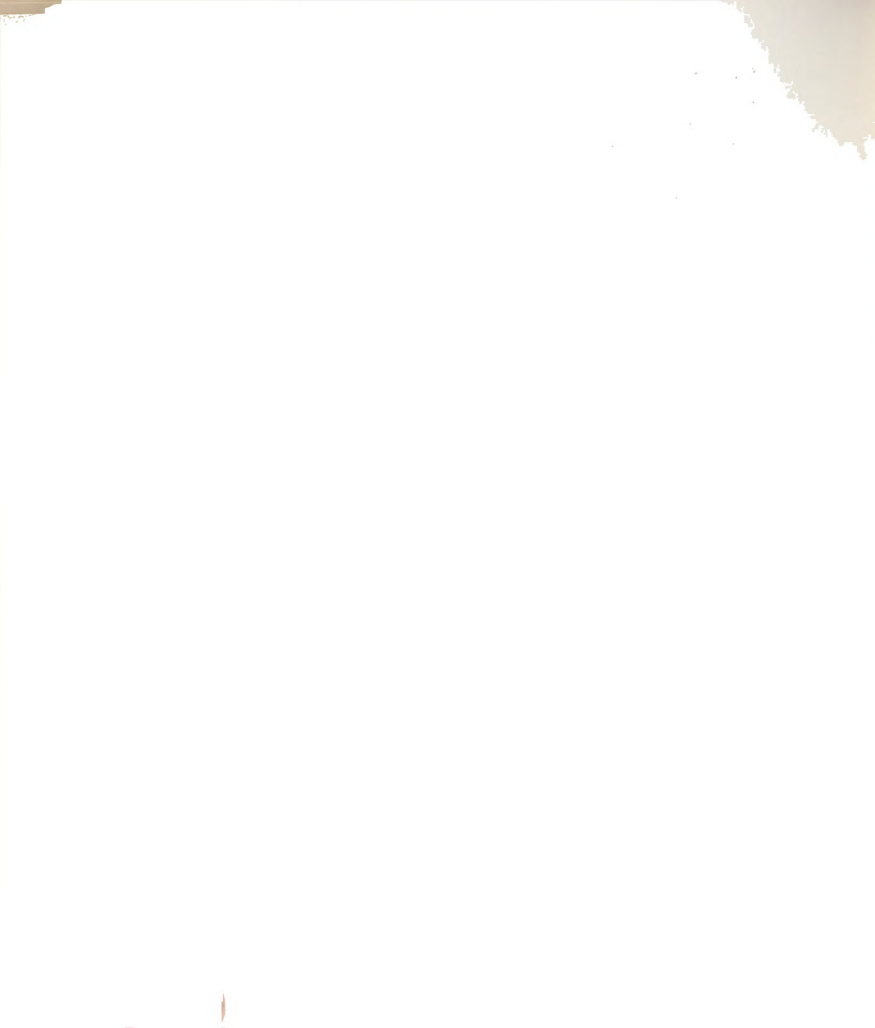


28. Fernwood Nature Study Area
29. Fish Lake Bog Plant Preserve
30. Five Lakes Muskegon Plant Preserve
31. Flowerfield Creek Nature Sanctuary
32. Flowering Dogwood Plant Preserve
33. Grand Beach Prairie
34. Grand Island Research Natural Area
35. Grand Mere Nature Study Preserve
36. Grass Island Nature Sanctuary  
Grass Lake Nature Sanctuary--see No. 55
37. Grass River Nature Sanctuary
38. Green River Nature Sanctuary
39. Gull Island Nature Sanctuary
40. Harbor Island
41. Harvey N. Ott Preserve
42. Haven Hill Natural Area
43. Helmerbrook Prairie Plant Preserve
44. Hemlock Research Natural Area (see also No. 118)
45. Hoffmaster Natural Area
46. Homer L. Hylton Memorial Plant Preserve
47. Hoobler Natural Area
48. Horner Woods
49. Huntington Memorial Plant Preserve
50. Huron Islands Wilderness
51. Huron Mountain Club Nature Research Area
52. Isle Royale Wilderness (see also No. 93)
53. James H. Klipfel Memorial Nature Sanctuary
54. Jonathon Woods
55. Julius C. and Marie Moran Peter Nature Sanctuary
56. Karl Chen Memorial Prairie Plant Preserve
57. Kasey Hartz Natural Area
58. Keweenaw Shore No. 1 Nature Sanctuary
59. Keweenaw Shore No. 2 Plant Preserve
60. Kitchel Dunes
61. Klumbis Road Prairie
62. Kope Kon Nature Sanctuary



63. Lake Huron Sand Dunes Plant Preserve
64. Lake St. Clair National Wildlife Refuge
65. Lake Superior Nature Sanctuary
66. Lakeville Swamp Nature Sanctuary
67. Lapland Buttercup Plant Preserve
68. Laughing Whitefish Falls Scenic Site
69. Lawrence A. and Mary Bell Wade Memorial Nature Sanctuary
70. Lawton Prairie
71. Lefglen Nature Sanctuary
72. Lew Sarrett Wildlife Sanctuary
73. Little Brevort Lake Scenic Site
74. Lost Lake Nature Sanctuary
75. Lucia K. Tower Nature Preserve
76. MacCurdy Ecological Tract
77. Martha Mott Preserve
78. Mary Stallins Ray Memorial Plant Preserve
79. McCormick Research Natural Area
80. Michigan Islands Wilderness
81. Middle Belt Prairie
82. Mixed Forest Nature Study Area (see also Nos. 88, 124)
83. Mosely-Bennett-Barlow Preserve
84. Mud Lake Bog Research Area
85. Newaygo Prairie Ecological Study Area
86. Newaygo Prairie Plant Preserve
87. Newton Woods
88. Northern Hardwoods Public Use Natural Area
89. Northern Hardwoods Research Natural Area  
North Shore Dunes--see No. 60
90. Northshore Research Natural Area
91. Osborne Mills Riverland Preserve
92. Palmer-Wilcox-Gates Preserve
93. Passage Island Research Natural Area (see also No. 52)
94. Pepperidge Dunes Plant Preserve
95. Pennfield Bog Plant Preserve
96. Petersburg State Game Area Special Habitat
97. Phyllis Haehnle Memorial Sanctuary





- 155. Pigeon River Preserve--see No. 47
- 98. Pine River Nature Sanctuary
- 99. Porcupine Mountains Wilderness Area (see also Nos. 103, 139)
- 100. Port Huron State Game Area Special Habitats
- 101. Prairie Chicken Management Area
- 102. Prairie Chicken Nature Sanctuary
- 103. Presque Isle River Scenic Site (see also Nos. 99, 139)
- 104. Proud Lake Nature Study Area
- 105. Purple Coneflower Plant Preserve
- 106. Rare Fern Plant Preserve
- 107. Rattlesnake Master Plant Preserve
- 108. Red Pine Research Natural Area (see also No. 118)
- 109. Red Wing Acres Nature Sanctuary
- 110. Riverbank Sanctuary
- 111. Riverbend Natural Area
- 112. Robert Powell Memorial Nature Sanctuary
- 113. Robinson Preserve
- 114. Roscommon Red Pines Nature Study Area
- Roy Road Prairie Plant Preserve--see No. 56
- 115. Sauk Indian Trail Prairie Plant Preserve
- 116. Schmude Memorial Nature Sanctuary
- 117. Schwark Road Prairie
- 118. Seney National Wildlife Refuge (see also Nos. 44, 89, 90, 108, 119, 128, 150)
- 119. Seney Wilderness (see also Nos. 118, 128)
- 120. Seven Ponds Nature Center
- 121. Shadbush Nature Study Area
- 122. Shannon Nature Sanctuary
- 123. Shiawassee National Wildlife Refuge
- 124. Snake Island-Mud Lake Nature Study Area (see also Nos. 82, 90)
- 125. South Campus Nature Preserve
- 126. South Island
- Steven M. Polovich Memorial Nature Sanctuary--see No. 98
- 127. St. Clair-Former Schenck Woods Nature Sanctuary
- 128. Strangmoor Bog Research Natural Area (see also Nos. 118, 119)
- 129. Sturgeon Bay-Sucker Creek Natural Area Preserve (see also Nos. 14, 22, 147)



130. Sylvania Recreation Area Botanical Zone
131. Tahquamenon Falls State Park Natural Area (see also No. 12)
132. Thompson Road Prairie
133. Thompson's Harbor Natural Area
134. Timberland Swamp Nature Sanctuary
135. Tobico Marsh
136. Toumey Woodlot
137. Trillium Trail Nature Sanctuary
138. Two Wilderness Islands Nature Sanctuary
139. Union Springs Scenic Site (see also Nos. 99, 103)
140. Upson Lake Nature Sanctuary
141. Vermilion Point
142. Vorhees Brothers Wildlife Sanctuary
143. Wagner Falls Scenic Site
144. Warren Dunes Nature Study Area
145. Warren Woods Nature Study Area
146. Waterloo Black Spruce Bog Nature Study Area
147. Waugoshance Point Nature Study Preserve
148. West Wequetonsing Nature Preserve
149. White Pigeon River Nature Study Area
150. White Pine Public Use Natural Area (see also No. 118)
151. William P. Holliday Forest and Wildlife Preserve
152. Willow Creek Rock Ledge Nature Sanctuary
153. Woldumar Nature Study Area
154. Woodruff Creek-Hudspeth Memorial Nature Sanctuary
155. Wyandotte National Wildlife Refuge
156. Zeerip Drummond Island Memorial Plant Preserve



## APPENDIX B

### Listing of Preserves by County

#### ALGER

Donahey Woods  
Grand Island Research Natural Area  
Laughing Whitefish Falls Scenic Site  
Wagner Falls Scenic Site

#### ALLEGAN

Allegan State Game Area Special Habitats  
Lawrence A. and Mary Bell Wade Memorial Nature Sanctuary

#### ALPENA

Bird Island Nature Sanctuary  
Grass Island Nature Sanctuary  
Gull Island Nature Sanctuary  
Julius C. and Marie Moran Peter Nature Sanctuary  
Michigan Islands Wilderness

#### ANTRIM

Cedar River Nature Sanctuary  
Grass River Natural Area  
Green River Nature Sanctuary  
Palmer-Wilcox-Gates Preserve

#### BARRY

Barry State Game Area Special Habitat

#### BAY

Tobico Marsh

#### BERRIEN

Bakertown Fen  
Dayton Wet Prairie  
Fernwood Nature Study Area  
Grand Beach Prairie



BERRIEN (contd.)

Grand Mere Nature Study Preserve  
Lew Sarrett Wildlife Sanctuary  
Pepperidge Dunes Plant Preserve  
Robinson Preserve  
Schwark Road Prairie  
Warren Dunes Nature Study Area  
Warren Woods Nature Study Area

BRANCH

Kope Kon Nature Sanctuary

CALHOUN

Bernard W. Baker Sanctuary  
Fish Lake Bog Plant Preserve  
Flowering Dogwood Plant Preserve  
Harvey N. Ott Preserve  
Helmerbrook Prairie Plant Preserve  
Pennfield Bog Plant Preserve  
Vorhees Brothers Wildlife Sanctuary

CASS

Klumbis Road Prairie  
Newton Woods  
Thompson Road Prairie

CHARLEVOIX

Michigan Islands Wilderness

CHIPPEWA

Betsy Lake Research Natural Area  
Harbor Island  
Lake Huron Sand Dunes Plant Preserve  
Lake Superior Nature Sanctuary  
Lapland Buttercup Plant Preserve  
Tahquamenon Falls State Park Natural Area  
Vermilion Point  
Zeepip Drummond Island Memorial Plant Preserve

CLARE

Alta Warren Parsons Memorial Nature Sanctuary



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DELTA

Two Wilderness Islands Nature Sanctuary

EATON

Woldumar Nature Study Area

EMMETT

Big Stone-Cecil Bay Natural Area Preserve  
Crane Island Natural Area Preserve  
Sturgeon Bay-Sucker Creek Natural Area Preserve  
Waugoshance Point Nature Study Preserve  
West Wequetonsing Nature Preserve

GLADWIN

Briggs Memorial Nature Sanctuary

GOGEBIC

Porcupine Mountains Wilderness Area  
Presque Isle River Scenic Site  
Sylvania Recreation Area Botanical Zone

GRAND TRAVERSE

South Island

INGHAM

Riverbend Natural Area  
Toumey Woodlot

JACKSON

Lefglen Nature Sanctuary  
Phyllis Haehnle Memorial Sanctuary  
Waterloo Black Spruce Bog Nature Study Area

KALAMAZOO

Flowerfield Creek Nature Sanctuary

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KEWEENAW

Brockway Mountain Nature Sanctuary  
Estivant Pines Nature Sanctuary  
Homer L. Hylton Memorial Plant Preserve  
Isle Royale Wilderness  
James H. Klipfel Memorial Nature Sanctuary  
Keweenaw Shore No. 1 Nature Sanctuary  
Keweenaw Shore No. 2 Plant Preserve  
Passage Island Research Natural Area  
Upton Lake Nature Sanctuary

LAPEER

Jonathon Woods  
Seven Ponds Nature Center

LENAWEE

Robert Powell Memorial Nature Sanctuary

LIVINGSTON

Shannon Nature Sanctuary  
Woodruff Creek-Hudspeth Memorial Nature Sanctuary

LUCE

Betsy Lake Research Natural Area  
Tahquamenon Falls State Park Natural Area

MACKINAC

Beaver Dam Nature Sanctuary  
Little Brevort Lake Scenic Site  
Mixed Forest Nature Study Area  
Northshore Research Natural Area  
Purple Coneflower Plant Preserve  
Rare Fern Plant Preserve  
Snake Island-Mud Lake Nature Study Area

MACOMB

Anna Wilcox Memorial Nature Sanctuary  
Shadbush Nature Study Area  
South Campus Nature Preserve



MANISTEE

Lucia K. Tower Preserve

MARQUETTE

Dukes Research Natural Area  
Huron Islands Wilderness  
Huron Mountain Club Nature Research Area  
McCormick Research Natural Area

MIDLAND

Bullock Creek Nature Sanctuary

MONROE

Erie Marsh Preserve  
Petersburg State Game Area Special Habitat

MONTCALM

MacCurdy Ecological Tract

MUSKEGON

Five Lakes Muskegon Plant Preserve  
Hoffmaster Natural Area  
Kasey Hartz Natural Area

NEWAYGO

Newaygo Prairie Ecological Study Area  
Newaygo Prairie Plant Preserve

OAKLAND

Calla C. Burr Memorial Plant Preserve  
Cranbrook Nature Sanctuary  
Haven Hill Natural Area  
Lakeville Swamp Nature Sanctuary  
Proud Lake Nature Study Area  
Schmude Memorial Nature Sanctuary  
Timberland Swamp Nature Sanctuary



OGEMAW

Lost Lake Nature Sanctuary

ONTONAGON

Porcupine Mountains Wilderness Area  
Union Springs Scenic Site

OSCEOLA

Prairie Chicken Management Area  
Prairie Chicken Nature Sanctuary

OTSEGO

Hoobler Natural Area

OTTAWA

Kitchel Dunes  
Hoffmaster Natural Area

PRESQUE ISLE

Besser Natural Area  
Thompson's Harbor Natural Area

ROSCOMMON

Roscommon Red Pines Nature Study Area

SAGINAW

Shiawassee National Wildlife Refuge

SCHOOLCRAFT

Hemlock Research Natural Area  
Huntington Memorial Plant Preserve  
Northern Hardwoods Public Use Natural Area  
Northern Hardwoods Research Natural Area  
Red Pine Research Natural Area  
Riverbank Sanctuary  
Seney National Wildlife Refuge  
Seney Wilderness





SCHOOLCRAFT (contd.)

Strangmoor Bog Research Natural Area  
White Pine Public Use Natural Area

ST. CLAIR

Algonac State Park Sites  
Alton D. McGaw Memorial Plant Preserve  
Big Hand Road Nature Sanctuary  
Lake St. Clair National Wildlife Refuge  
Mary Stallins Ray Memorial Plant Preserve  
Pine River Nature Sanctuary  
Port Huron State Game Area Special Habitats  
Red Wing Acres Nature Sanctuary  
St. Clair-Former Schenck Woods Nature Sanctuary  
Trillium Trail Nature Sanctuary

ST. JOSEPH

Karl Chen Memorial Prairie Plant Preserve  
Rattlesnake Master Plant Preserve  
Sauk Indian Trail Prairie Plant Preserve  
White Pigeon River Nature Sanctuary

VAN BUREN

Lawton Prairie

WASHTENAW

Ann Arbor Wet Prairie  
Horner Woods  
Mosely-Bennett-Barlow Preserve  
Mud Lake Bog Research Area  
Osborne Mills Riverland Preserve

WAYNE

Middle Belt Prairie  
Mosely-Bennett-Barlow Preserve  
William P. Holliday Forest and Wildlife Preserve  
Wyandotte National Wildlife Refuge



## APPENDIX C

### Listing of Preserves by Ownership/Administration

#### U.S. Government

##### Fish and Wildlife Service

|                                            |          |               |
|--------------------------------------------|----------|---------------|
| Hemlock Research Natural Area              |          |               |
| Huron Islands Wilderness                   |          |               |
| Lake St. Clair National Wildlife Refuge    |          |               |
| Michigan Islands Wilderness                |          |               |
| Northern Hardwoods Public Use Natural Area |          |               |
| Northern Hardwoods Research Natural Area   |          |               |
| Red Pine Research Natural Area             |          |               |
| Seney National Wildlife Refuge             |          |               |
| Seney Wilderness                           |          |               |
| Shiawassee National Wildlife Refuge        |          |               |
| Strangmoor Bog Research Natural Area       |          |               |
| White Pine Public Use Natural Area         |          |               |
| Wyandotte National Wildlife Refuge         |          |               |
| Total:                                     | 13 areas | 109,228 acres |

##### Forest Service

|                                         |         |            |
|-----------------------------------------|---------|------------|
| Dukes Research Natural Area             |         |            |
| Grand Island Research Natural Area      |         |            |
| McCormick Research Natural Area         |         |            |
| Newaygo Prairie Ecological Study Area   |         |            |
| Sylvania Recreation Area Botanical Zone |         |            |
| Total:                                  | 5 areas | 9119 acres |

##### Park Service

|                                      |         |               |
|--------------------------------------|---------|---------------|
| Isle Royale Wilderness               |         |               |
| Passage Island Research Natural Area |         |               |
| Total:                               | 2 areas | 131,880 acres |

|                        |          |               |
|------------------------|----------|---------------|
| U.S. Government Total: | 20 areas | 250,227 acres |
|------------------------|----------|---------------|



State of MichiganForestry Division

Besser Natural Area  
 Little Brevort Lake Scenic Site  
 Mixed Forest Nature Study Area  
 Northshore Research Natural Area  
 Roscommon Red Pines Nature Study Area  
 Snake Island-Mud Lake Nature Study Area  
 Thompson's Harbor Natural Area

Total: 7 areas 3123 acres

Parks Division

Algonac State Park Sites  
 Betsy Lake Research Natural Area  
 Big Stone-Cecil Bay Nature Study Preserve  
 Crane Island Natural Area Preserve  
 Haven Hill Natural Area  
 Hoffmaster Natural Area  
 Laughing Whitefish Falls Scenic Site  
 Porcupine Mountains Wilderness  
 Presque Isle River Scenic Site  
 Proud Lake Nature Study Area  
 Shadbush Nature Study Area  
 Sturgeon Bay-Sucker Creek Natural Area Preserve  
 Tahquamenon Falls State Park Natural Area  
 Union Springs Scenic Site  
 Wagner Falls Scenic Site  
 Warren Dunes Nature Study Area  
 Warren Woods Nature Study Area  
 Waterloo Black Spruce Bog Nature Study Preserve  
 Waugoshance Point Nature Study Preserve

Total: 19 areas 69,827 acres

Wildlife Division

Allegan State Game Area Special Habitats  
 Barry State Game Area Special Habitat  
 Petersburg State Game Area Special Habitat  
 Port Huron State Game Area Special Habitats  
 Prairie Chicken Management  
 Tobico Marsh

Total: 6 areas 4116 acres

State of Michigan Total: 32 areas 77,066 acres



The Nature Conservancy

Bakertown Fen  
 Dayton Wet Prairie  
 Erie Marsh Preserve  
 Grand Beach Prairie  
 Harbor Island  
 Hoobler Natural Area  
 Jonathon Woods  
 Kitchel Dunes  
 Klumbis Road Prairie  
 Lawton Prairie  
 Lucia K. Tower Nature Preserve  
 Mosely-Bennett-Barlow Preserve  
 Osborne Mills Riverland Preserve  
 Palmer-Wilcox-Gates Preserve  
 Robinson Preserve  
 Schwark Road Prairie  
 Thompson Road Prairie  
 West Wequetonsing Nature Preserve

Total:

18 areas

3793 acres

Michigan Nature Association

Alta Warren Parsons Memorial Nature Sanctuary  
 Alton C. McGaw Memorial Plant Preserve  
 Anna Wilcox Memorial Nature Sanctuary  
 Beaver Dam Nature Sanctuary  
 Big Hand Road Nature Sanctuary  
 Bird Island Nature Sanctuary  
 Briggs Memorial Nature Sanctuary  
 Brockway Mountain Nature Sanctuary  
 Bullock Creek Nature Sanctuary  
 Calla C. Burr Memorial Plant Preserve  
 Cedar River Nature Sanctuary  
 Estivant Pines Nature Sanctuary  
 Fish Lake Bog Plant Preserve  
 Five Lakes Muskegon Plant Preserve  
 Flowerfield Creek Nature Sanctuary  
 Flowering Dogwood Plant Preserve  
 Grass Island Nature Sanctuary  
 Green River Nature Sanctuary  
 Gull Island Nature Sanctuary  
 Helmerbrook Prairie Plant Preserve  
 Homer L. Hylton Memorial Plant Preserve  
 Huntington Memorial Plant Preserve  
 James H. Klipfel Memorial Nature Sanctuary  
 Karl Chen Memorial Prairie Plant Preserve  
 Keweenaw Shore No. 1 Nature Sanctuary  
 Keweenaw Shore No. 2 Plant Preserve  
 Kope Kon Nature Sanctuary  
 Lake Huron Sand Dunes Plant Preserve  
 Lake Superior Nature Sanctuary





Lakeville Swamp Nature Sanctuary  
 Lapland Buttercup Plant Preserve  
 Lawrence A. and Mary Bell Wade Memorial Nature Sanctuary  
 Lefglen Nature Sanctuary  
 Lost Lake Nature Sanctuary  
 Mary Stallins Ray Memorial Plant Preserve  
 Nawaygo Prairie Plant Preserve  
 Pepperidge Dunes Plant Preserve  
 Pennfield Bog Plant Preserve  
 Pine River Nature Sanctuary  
 Prairie Chicken Nature Sanctuary  
 Purple Coneflower Plant Preserve  
 Rare Fern Plant Preserve  
 Rattlesnake Master Plant Preserve  
 Red Wing Acres Nature Sanctuary  
 Robert Powell Memorial Nature Sanctuary  
 Sauk Indian Trail Prairie Plant Preserve  
 Shannon Nature Sanctuary  
 St. Clair-Former Shenck Woods Nature Sanctuary  
 Timberland Swamp Nature Sanctuary  
 Trillium Trail Nature Sanctuary  
 Two Wilderness Islands Nature Sanctuary  
 Upson Lake Nature Sanctuary  
 White Pigeon River Nature Sanctuary  
 Willow Creek Rock Ledge Nature Sanctuary  
 Woodruff Creek-Hudspeth Memorial Nature Sanctuary  
 Zeerip Drummond Island Memorial Plant Preserve

|        |          |            |
|--------|----------|------------|
| Total: | 56 areas | 2909 acres |
|--------|----------|------------|

#### Michigan Audubon Society

Bernard W. Baker Sanctuary  
 Lew Sarrett Wildlife Sanctuary  
 Martha Mott Preserve  
 Phyllis Heahnle Memorial Sanctuary  
 Riverbank Sanctuary  
 Seven Ponds Nature Center  
 Vorhees Brothers Wildlife Sanctuary

|        |         |            |
|--------|---------|------------|
| Total: | 7 areas | 2140 acres |
|--------|---------|------------|

#### Colleges and Universities

Horner Woods (Univ. of Mich.)  
 Kasey Hartz Natural Area (Muskegon Comm. Coll.)  
 Kitchel Dunes (Central Mich. Univ.)  
 MacCurdy Ecological Tract (Alma College)  
 Mud Lake Bog Research Area (Univ. of Mich.)  
 Newton Woods (Mich. State Univ.)  
 South Campus Nature Preserve (Macomb Comm. Coll.)  
 Toumey Woodlot (Mich. State Univ.)  
 Vermilion Point (Lake Superior State Coll.)

|        |         |           |
|--------|---------|-----------|
| Total: | 9 areas | 538 acres |
|--------|---------|-----------|



Local Governments

Ann Arbor Wet Prairie (City of Ann Arbor)  
 Donahey Woods (Burnt Twp.)  
 Grass River Natural Area (Antrim Co.)  
 Harvey N. Ott Preserve (Calhoun Co.)  
 Middle Belt Prairie (Huron-Clinton Metro. Auth.)  
 Riverbend Natural Area (Ingham Co.)  
 William P. Holliday Forest and Wildlife Preserve (Wayne Co.)

|        |         |            |
|--------|---------|------------|
| Total: | 7 areas | 1753 acres |
|--------|---------|------------|

Other

(Local conservancies and private organizations)

Cranbrook Nature Sanctuary (Cranbrook Inst. Sci.)  
 Fernwood Nature Study Area (Fernwood, Inc.)  
 Grand Mere Nature Study Preserve (Kalamazoo Nature Center)  
 Huron Mountain Club Nature Research Area (Huron Mountain Club)  
 Schmude Memorial Sanctuary (Independence Land Conserv.)  
 South Island (Long Lake Presv. Assoc.)  
 St. Clair-Former Schenck Woods Nature Sanctuary (Detroit Audubon Soc.)  
 Woldumar Nature Study Area (Nature Way Assoc.)

|        |         |              |
|--------|---------|--------------|
| Total: | 8 areas | 18,121 acres |
|--------|---------|--------------|

|              |           |               |
|--------------|-----------|---------------|
| GRAND TOTAL: | 156 areas | 356,547 acres |
|--------------|-----------|---------------|

(Note: This represents less than 1% of Michigan's total land acreage.)



## APPENDIX D

Disturbution of Preserves by Region and County  
(figures on following pages)

See Appendix B for listing by county.



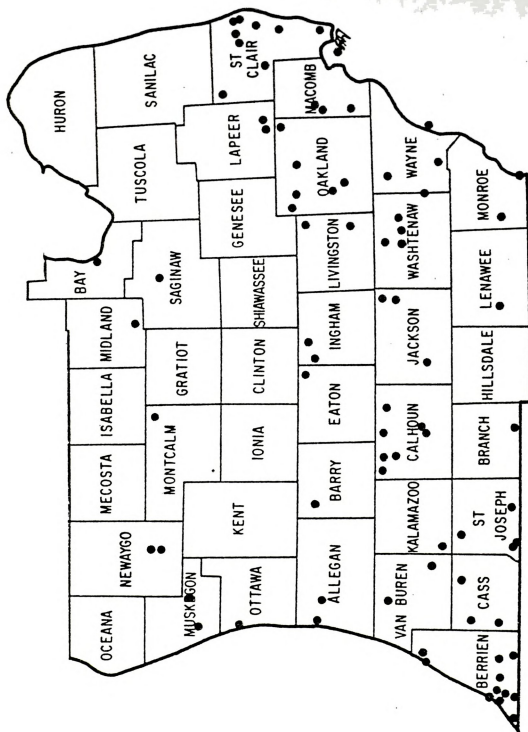
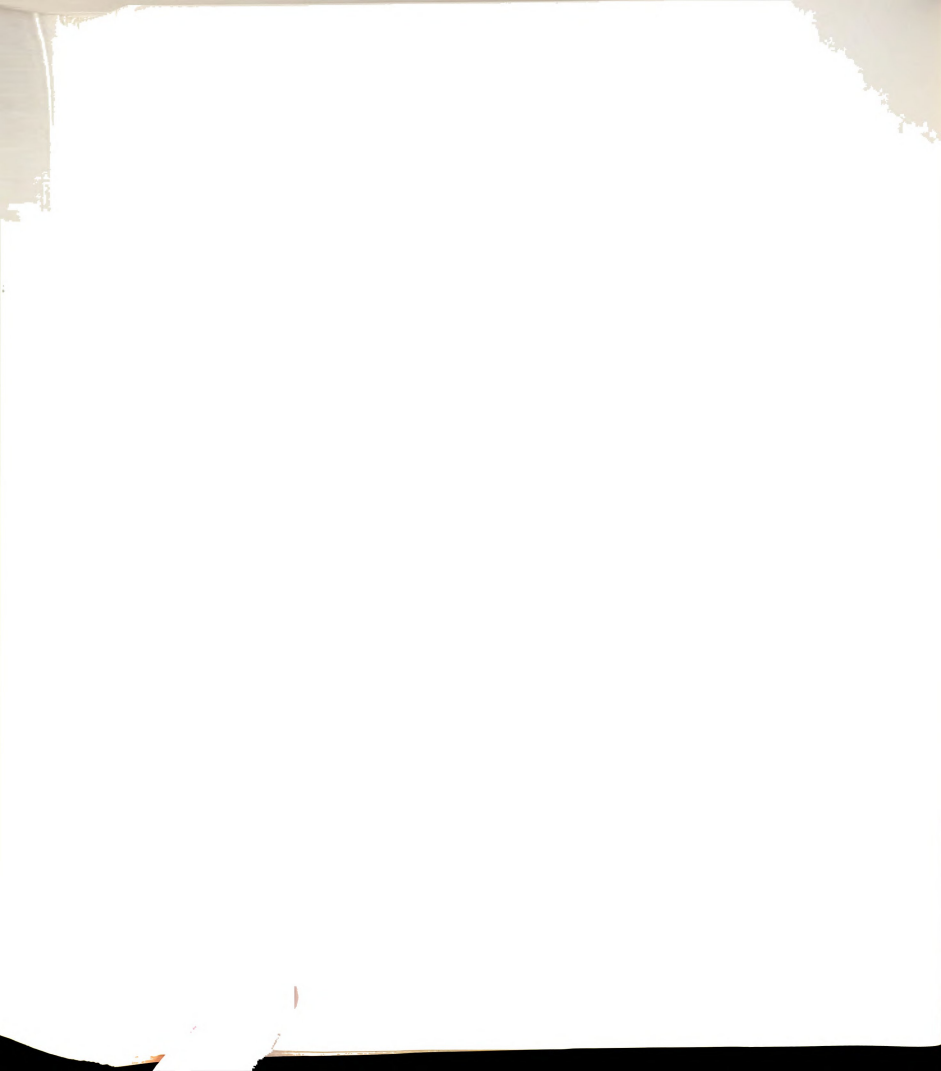


Figure 1. Distribution of preserves in the southern lower peninsula of Michigan.





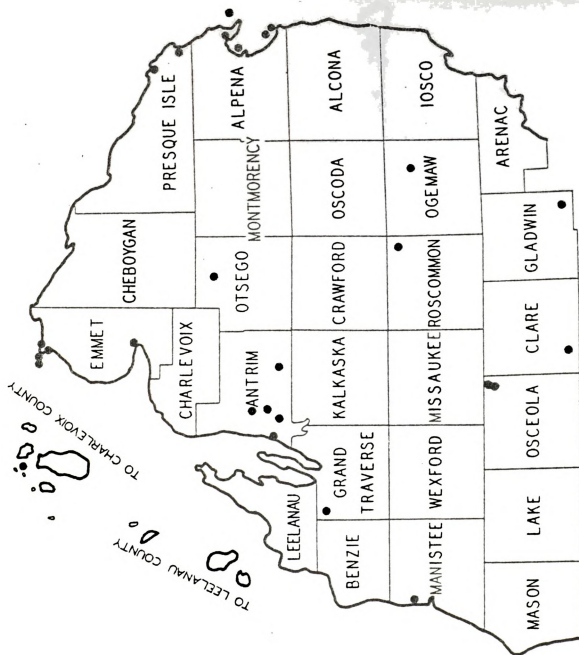


Figure 2. Distribution of preserves in the northern lower peninsula of Michigan.



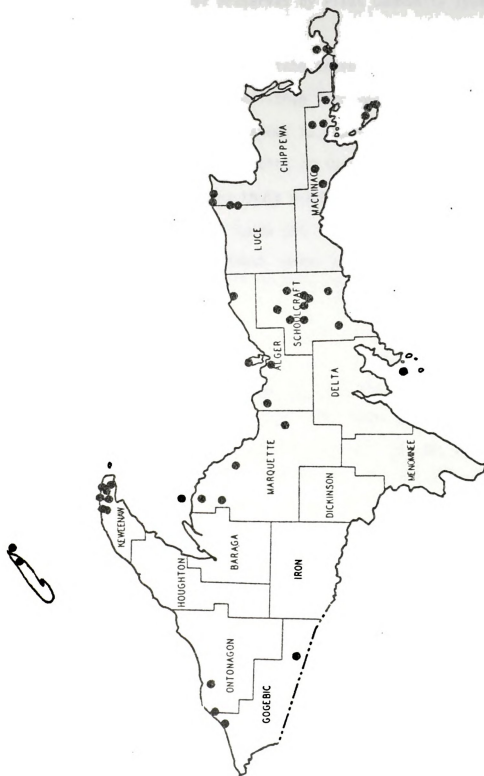


Figure 3. Distribution of preserves in the upper peninsula of Michigan.



## APPENDIX E

### Listing of Preserves by Plant Community Types

Note: Communities are divided into three basic types--forested, shrub-dominated, and herb-dominated--then into various upland and lowland types. These categories are not intended to represent all major vegetation types in the state, nor is this listing designed to point out deficiencies in preservation. Numbers are those assigned preserves in Appendix A (alphabetical listing). Forest types are listed according to dominant species. \* Denotes unusually old-growth forest stands.

#### FORESTED

##### UPLAND

##### Hardwood:

Beech/maple--13, 28, 31, 34, 42, 54, 66, 80, \*87, 89, 97, 111, 113, 121, 125, \*136, 144, \*145, 153.

Oak, oak/hickory--1, 2, 10, \*21, 28, 30, 41, 42, 48, 54, 62, 72, 81, 83, 91, 97, 104, 144, 149, 154.

Poplar, aspen--12, 14, 16, 47, 49, 51, 52, 54, 73, 79, \*82, 97, 109, 118, 119, 133, 139.

Mixed--3, 6, 13, 40, 44, 51, 52, 53, 68, 71, 72, 76, 79, 99, 106, 113, \*142, 151.

##### Conifer:

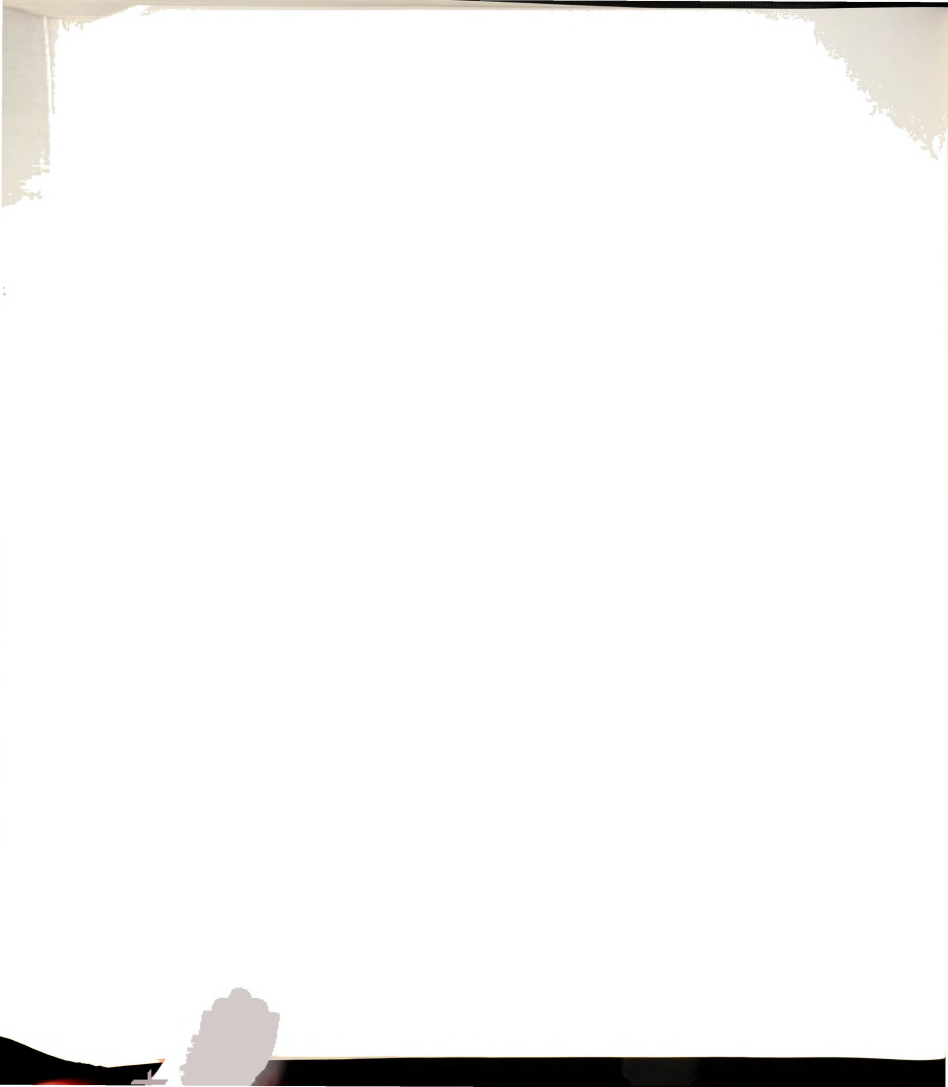
White, red pine--\*11, 12, 47, 51, 79, 88, 90, 99, 108, \*114, 119, 128, 129, 130, 140, \*150.

Jack pine--51, 52, 60, 108, 114.

Hemlock--4, 25, 44, 51, 79, 100, 118, 131.

Spruce/fir--46, 50, 51, 52, 55, 58, 93.

Mixed--63, 100, 110, 118, 119, 133.



Hardwood-Conifer:

Hemlock/northern hardwoods--12, 14, 24, 25, \*27, 34, 35, 51,  
60, 65, 68, 69, 73, 75, 88, 92,  
98, \*99, 103, 118, 126, 127, \*130,  
131, 141, 143, 152.

Other--18, 22, 39, 57, 68, 74, 78, 135, 138, 147, 156.

## LOWLAND

Hardwood:

Elm/ash--10, 12, 16, 28, 42, 123, 129.

Mixed, other--2, 13, 31, 41, 54, 67, 71, 72, 84, 95, 100, 104,  
\*145, 149, 151.

Conifer:

White cedar--2, 3, 12, 20, 22, \*25, \*27, 37, 38, 40, 47, 52,  
53, 63, 66, 67, 74, 79, 80, 118, 119, 130, 131,  
139, 147, 152.

Tamarack--2, 10, 12, 29, 41, 54, 66, 71, 84, 95, 99, 104, 116,  
118, 119, 121, 128, 137, 146.

Mixed, other--14, 17, 34, 51, 73, 99, 108, 124, 140.

Hardwood-Conifer: 2, 9, 42, 76, 120, 131, 135, \*148.

SHRUB-DOMINATED

## UPLAND

Old field--70, 76, 77, 84, 111.

Thin soil--17, 46, 52, 53, 58, 59.

## LOWLAND

Shrub swamp/carr--1, 9, 10, 12, 21, 23, 48, 54, 66, 71, 72, 79,  
108, 120, 146, 151, 153, 154.





HERB-DOMINATED

## UPLAND

Old field--6, 10, 18, 21, 41, 54, 76, 77, 101, 104, 105, 111,  
120, 122, 137.

Open dune--11, 22, 45, 60, 63, 65, 75, 80, 92, 129, 133, 141,  
144, 147.

Thin soil--17, 46, 50, 51, 52, 53, 58, 59, 93, 99.

Prairie--1, 2, 5, 7, 8, 33, 43, 61, 70, 71, 81, 85, 86, 96, 107,  
115, 117, 132.

## LOWLAND

Sphagnum bog--3, 12, 29, 37, 41, 51, 52, 65, 74, 76, 79, 84, 95,  
104, 108, 118, 119, 128, 130, 141.

Wet prairie, fen--1, 5, 7, 8, 19, 23, 43, 56, 65, 154.

Marsh--2, 6, 10, 12, 18, 19, 21, 23, 26, 37, 41, 56, 62, 64,  
65, 66, 70, 72, 77, 78, 84, 91, 97, 108, 109, 116, 118,  
119, 120, 121, 122, 123, 134, 135, 148, 155.

Wet shore, beach pools--11, 22, 30, 40, 55, 58, 59, 60, 80, 82,  
93, 129, 147.



APPENDIX F

Areas with Ambiguous Status and Partial Protection

- American Lotus Plant Preserve (Michigan Nature Assoc.)--undergoing active planting for re-establishment of lotus.
- Bear Lake Natural Area (Michigan State Univ.)--purchased with implied intent of preserving a bog lake, but no formal statement of such intent has been found.
- Beaver Basin (Pictured Rocks National Lakeshore)--presently zoned "primitive", but a possible candidate for Federal Wilderness recommendation.
- Bicentennial Woods (Lenawee Co.)--reported to contain a twenty-acre virgin hardwood forest, but lacks formal resolution for preservation.
- Carp River (Hiawatha National Forest)--proposed through RARE II as Federal Wilderness.
- Chase-Osborne Tract (Univ. of Michigan)--a large tract on Sugar Island, administered by the Biological Station with limited forest management.
- Dinosaur Hill Nature Preserve (City of Rochester)--lacks restrictive use guidelines; administered as "park" property.
- E. S. George Reserve (Univ. of Michigan)--a large tract maintained in a natural state except for deer herd manipulation and research.
- Ford Eagle Preserve (Ford Motor Company)--a protection agreement is pending with The Nature Conservancy.
- For-Mar Nature Preserve (Genesee Co.)--developed extensively for outdoor education.
- Government Island (Hiawatha National Forest)--proposed through RARE II as Federal Wilderness.



Grayling Wilderness Preserve (Trout Unlimited)--possesses deed restrictions too vague to ensure preservation.

Henry Ford Wildlife Area (Univ. of Michigan, Dearborn)--developed extensively for outdoor education.

Hope College Dune Woodland Preserve (Hope College)--used as preserve but without formal designation or statement of intent.

Horseshoe Bay (Hiawatha National Forest)--proposed through RARE II as Federal Wilderness.

Kalamazoo Nature Center--created to preserve Cooper's Glen, but extensively developed for outdoor education on adjacent acreage.

Kellogg Bird Sanctuary (Michigan State Univ.)--lacks formal designation as preserve.

Kenneth W. and Timothy S. Gunn Memorial (Michigan Nature Assoc.)--a non-development easement over Fish Knob Point, Keweenaw County.

Kirkland (Olivet College)--extensively developed and manipulated for ecological research.

Kleinstuck Nature Preserve (Western Michigan Univ.)--lacks formal designation and use restrictions.

Little Silver Addition (Ottawa National Forest)--proposed through RARE II as Federal Wilderness.

Love Creek Nature Center (Berrien Co.)--intended primarily for outdoor education, though little developed.

Marion Island (Grand Traverse Co.)--deed restriction allows "good forestry and wildlife management".

Neithercut Woodland (Central Michigan Univ.)--developed extensively for outdoor education.

Nordhouse Dunes (Manistee National Forest)--proposed through RARE II as Federal Wilderness.



Orchid Haven Plant Preserve (Michigan Nature Assoc.)--has undergone planting of native orchids and partial reconstruction.

Red Cedar Natural Area (Michigan State Univ.)--lacks formal preserve designation.

Round Island (Hiawatha National Forest)--proposed through RARE II as Federal Wilderness.

Sandhill Crane (private)--a program to attract cranes is carried on in informal cooperation with the Michigan Nature Association.

Sanford Natural Area (Michigan State Univ.)--lacks formal preserve designation.

Senier's Point (Mackinac State Forest)--a seven-mile stretch of diverse Lake Michigan shoreline whose dedication is being blocked by local opposition.

Skegemog Lake Wildlife Area (Michigan DNR)--designated only to remain in a "natural appearing state".

Sturgeon River (Ottawa National Forest)--proposed through RARE II as Federal Wilderness.

Sylvania Recreation Area (U.S. Forest Service)--proposed through RARE II as Federal Wilderness.

University of Michigan Biological Station Property--some manipulative research; certain areas to be designated for long-term preservation and observation.

Whitefish Point Bird Observatory (Michigan Audubon Society)--leased from U.S. Coast Guard on a five-year basis.





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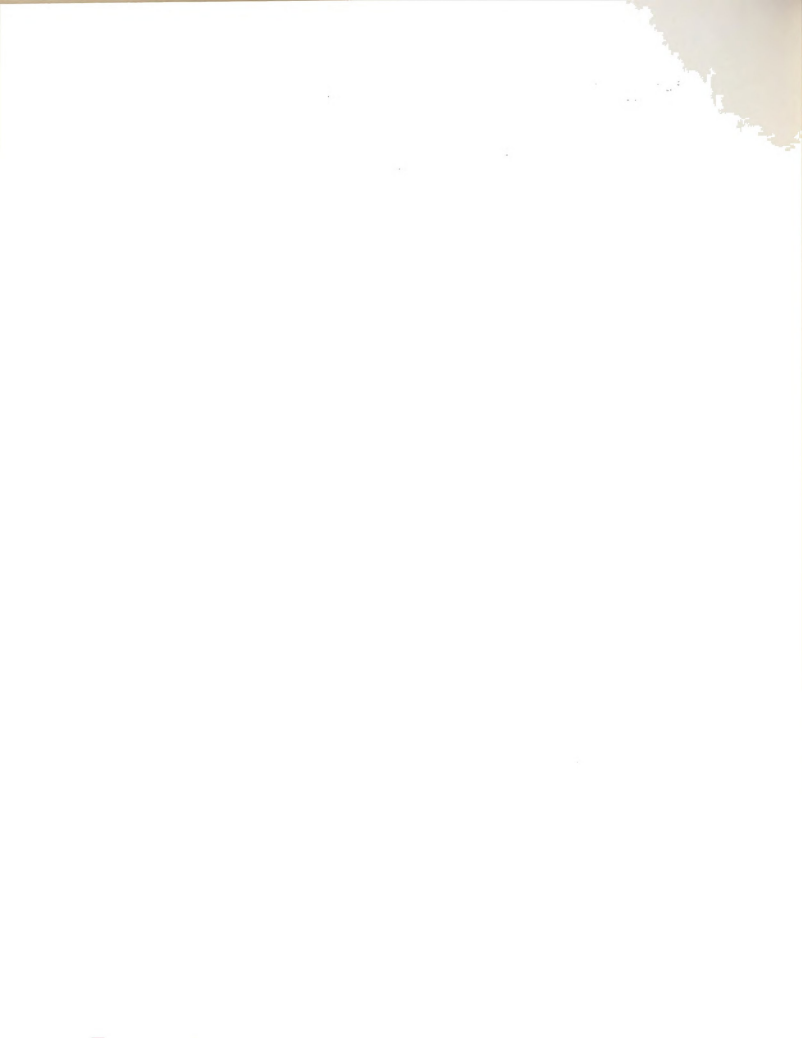


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