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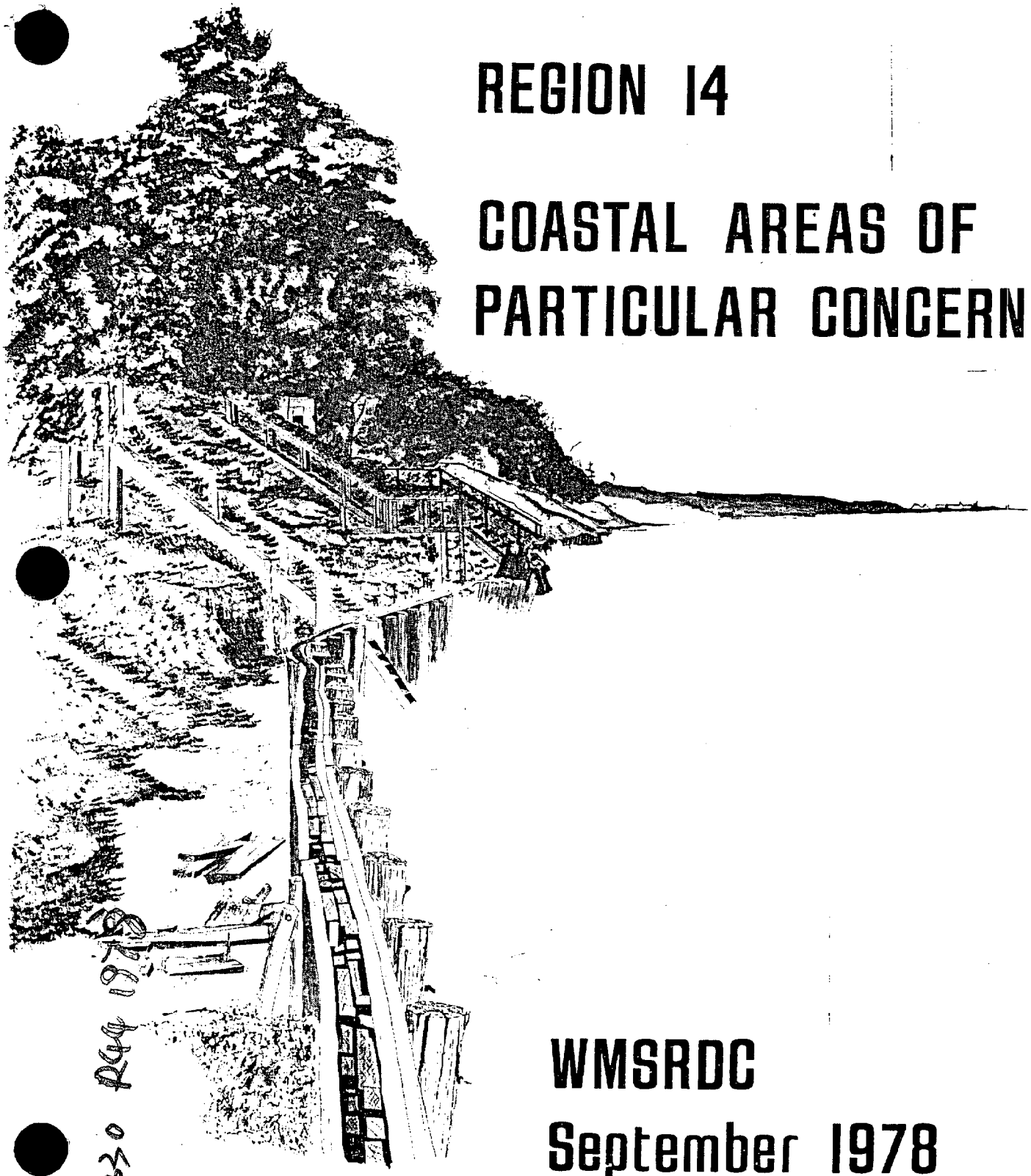

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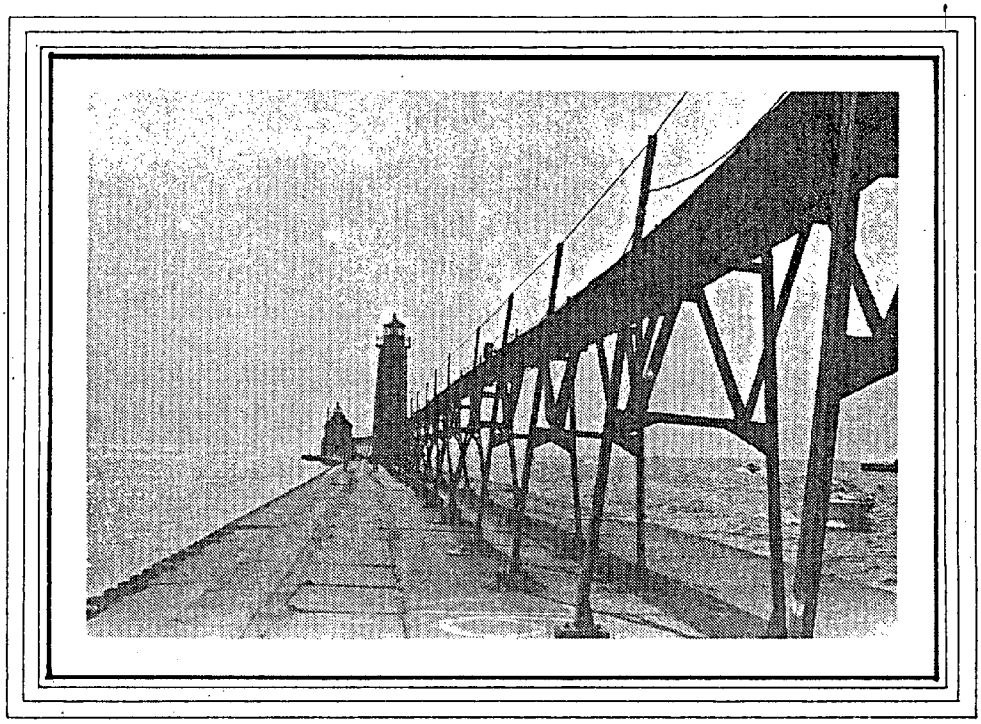

Prepared by
Comprehensive Planning Division
West Michigan Shoreline Regional Development Commission

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FORWARD

The West Michigan Shoreline Regional Development Commission was voluntarily created in 1970 by local governments in Oceana, Muskegon, and Ottawa Counties. A 19-member Governing Board comprised of local elected and appointed officials directs agency policy and has final authority over its activities. The Commission supports an experienced professional planning staff which shares a variety of expertise.

The Commission's principal purpose is to aid local governments in solving what have been termed "Regional Problems." Regional Problems are basically those problems which (1) cross jurisdictional lines, (2) those where action or no action by one jurisdiction affects another, and (3) those where public funds can be obtained and saved through cooperation in planning and operation. Using the above criteria, the management of coastal resources is identified as a "Regional Concern."

The West Michigan Shoreline Regional Development Commission wishes to maximize shoreland use without the wasteful destruction of unique shoreland resources. The Commission recognizes that this objective can only be attained through the rational and thoughtful development of shoreland areas. It is for this reason that the Commission endeavors to provide the technical background needed by local governments when making important land use and development decisions.

This document represents one element in the Commission's continuous coastal management efforts. This document identifies specific areas within the three county region which deserve particular attention. The management of these areas is essential to the successful implementation of a comprehensive coastal management strategy.

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CHAPTER I

INTRODUCTION

The West Michigan Shoreline Regional Development Commission has actively pursued the rational management of shoreland resources since its conception in 1970, the same year Michigan's Legislature passed Public Act 245 - the Shorelands Protection and Management Act. In 1972, Congress passed the federal Coastal Zone Management Act, Public Law 92-583. This legislation gave rise to Michigan's Coastal Management Program. In 1974, the Commission joined the State of Michigan in a coordinated coastal management endeavor.

Like other shoreland regions, the WMSRDC was to provide the State with certain preliminary information essential to its planning purpose. The Commission took significant steps in identifying population trends, land use patterns, physiographic processes, and shoreland sensitivity specific to its planning area. This information was substantive input to the agency's two volume report entitled, A Shorelands Planning and Zoning Study, published in June 1975.

In addition to the collection of the inventoried data mentioned above, the Commission also began to develop an impressive public participation process. Questionnaires were distributed, citizen advisory councils were formed, and special meetings were held to discuss coastal management issues. As a result of these efforts, a number of regional goals and several specific objectives were eventually formalized. These goals and objectives are summarized below.

Goal I:

To preserve unique and sensitive shoreland areas for the welfare of all citizens.

Objectives:

A. Locate and identify areas of a unique and sensitive nature.

B. Secure areas considered of special worth.

C. Restrict those uses which are incompatible with the areas's unique and sensitive qualities.

Goal II:

To control industrial, commercial, and residential development in shoreland environments so as to provide social and economic needs without the needless and wasteful destruction of unique and sensitive shoreland areas.

Objectives:

A. Locate and identify areas along the Lake Michigan shoreline which can effectively accomodate development.

B. Provide alternatives to that development which intends to locate on the shoreline and specifically on the primary dune.

C. Organize and coordinate the use of erosion controls when and where appropriate.

D. Provide shoreline setback requirements in those areas which demonstrate a need for such.

Goal III:

To provide recreational opportunities within shoreland areas for all citizens, while maintaining environmental integrety.

Objectives:

A. Identify recreational needs.

B. Locate and identify areas of access.

C. Provide a means or avenue of transport.

D. Maintain facilities.

In the time since the Commission published its Shorelands Planning and Zoning Study, considerable work has been directed toward the analysis of shoreland sensitivity and the understanding of imposed developmental constraints. This work has lead to the preparation of township maps which describe general erosion potentials, septic system suitability, slope hazards, and sensitive environments such as floodplains and wetlands. This information is intended to undergo further refinement with eventual computerization.

In addition to the sensitivity analysis just described, the Commission has taken important steps to identify "special shoreland areas" within Region 14. The State refers to these as "Areas of Particular Concern" (APC's). This document is intended to describe those APC's identified within Oceana, Muskegon, and Ottawa Counties' Coastal Zone.

Chapter II examines the various types of APC's as defined by the State of Michigan's Department of Natural Resources. This chapter will also summarize the APC nomination process and list those APC's recognized by the WMSRDC.

Chapter III will examine each recognized APC in Region 14. The APC's will be reviewed following a given format. First, each APC will be located on a simple map. Second, each APC will be briefly described. Third, all major concerns will be identified. Forth, management needs will be evaluated and alternatives sometimes suggested. And last, a short status report will examine the planning emphasis assigned to each identified APC.

Chapter IV will explain the Commission's APC action priorities. Existing priorities will be described. Changes in APC status will be examined. And, projected priorities will be suggested.

Chapter V will summarize planning achievements. Concluding remarks will be directed specifically at continued APC review and the CZM planning process. Reference will be made to the Commission's Comprehensive Development Strategy and the role of its CZM planning program.

CHAPTER II

APC NOMINATIONS

The Michigan Department of Natural Resources, Division of Land Resource Programs, defines "Areas of Particular Concern" in its eight volume report entitled, A Proposed Program for Michigan's Coast, published in August 1977. The above mentioned report groups APC's into six major types. These six broad categories are further divided into fourteen detailed elements. Michigan's APC classification system is outlined below.

I. Areas of Natural Hazard to Development
   - A. High Risk Erosion Areas
   - B. Flood Hazard Areas

II. Areas Sensitive to Development
   - A. Ecologically Sensitive Areas
   - B. Natural Areas
   - C. Sand Dune Areas
   - D. Islands

III. Areas Fulfilling Recreational or Cultural Needs
   - A. Recreation Areas
   - B. Historic and Archaeologic Sites

IV. Areas of Intensive or Conflicting Use
   - A. Coastal Lakes, River Mouths and Bays
   - B. Urban Areas

V. Areas of Natural Economic Potential
   - A. Mineral Resource Areas
   - B. Agricultural Areas
   - C. Prime Industrial Areas
   - D. Water Transportation Areas

VI. Areas for Preservation or Restoration

The same DNR report goes on to describe how APC's are nominated and examines the process whereby these APC's are reviewed. Region 14's APC's were nominated and reviewed in the same general manner as indicated by the DNR. Specific procedures undertaken by the Region 14 Commission are summarized as follows.

1. The West Michigan Shoreline Regional Development Commission began soliciting APC nominations late in 1975. Commission staff prepared its own nomination forms and distributed these questionnaire type leaflets during all shoreland related meetings. Nomination forms were sent to all shoreland advisory council members and to each coastal governmental unit. Regional staff followed this distribution with personal interviews. In addition, Regional staff contacted and interviewed many noteable academicians familiar to the local scientific community. By January 1976 the Regional staff had collected, reviewed, and summarized approximately 87 coastal APC nominations.

2. Regional staff began to weed through the APC nominations it had on file, and began grouping those which referred to the same general area. In the months which followed our first APC nomination efforts, several additional nominations began to appear as a result of DNR's campaign efforts. Many of these new nominations simply supported areas already under consideration. Few areas were actually added to the Region's APC list. By March 1976, 54 general areas of concern had been identified and documented.

3. On March 11 and 12, 1976, the West Michigan Shoreline Regional Development Commission sponsored a "Critical Areas Workshop" held in each of the three counties. All municipalities were notified as to the nature and importance of these meetings. Other interested citizens and noted influentials were also invited. Input received during these meetings was eventually capsulized in a selection of APC nominations supported by the WMSRDC staff.

4. On July 19, 1976 the West Michigan Shoreline Regional Development Commission gave formal recognition to the 54 Areas of Particular Concern presented by its planning staff. Since that time, the Commission has received only nominations which support this original APC selection. The Commission still recognizes a total of 54 Areas of Particular Concern.

Table II-1 lists the 54 APC's recognized by the Region 14 Commission. This table also indicates the type of area as defined by the DNR's classification scheme. You will note that some areas fall within more than one category of concern. This multiple categorization is usually the

result of several nominations directed at the same area. This phenomenon reflects the many varied concerns associated with these individual areas.

TABLE II-1

REGION 14 COASTAL AREAS OF PARTICULAR CONCERN

OCEANA COUNTY APC's

Area Name (Index No.)	General Location	Area Type
(2) Sand Mine (Golden Twp.)	Golden Twp. T15N-R18W-Sec. 17 & 18	Mineral Resource Area
(8) Cedar Point Twp. Park	Golden Twp. T15N-R18W-Sec. 4	Recreation Area
(10) Cheyenne Hills, Fawn Park	Benona Twp. T14N-R19W-Sec. 13 & 24	High Risk Erosion Area
(17) Juniper Beach, Sahara Sands	Golden Twp. T15N-R19W-Sec. 7 & 18	High Risk Erosion Area
(21) Cobmoosa Shores	Benona Twp. T14N-R19W-Sec. 36 T14N-R18W-Sec. 31	High Risk Erosion Area
(22) Cedar Bluff	Pentwater Twp. T16N-R18W-Sec. 33	High Risk Erosion Area
(24) Flower Creek [a]	Clay Banks Twp. T13N-R18W-Sec. 26, 27, 34, 35.	Flood Hazard Area Natural Area
(29) Silver Lake, Upper Silver Lake, and Holiday Lake	Golden Twp. T15N-R19W-Sec. 25 & 36 T15N-R18W-Sec. 16, 17, 19, 20, 21, 29, 30, & 31.	Flood Hazard Area Coastal Lake
(30) Pentwater Lake & Pentwater River	Pentwater Twp. & Pentwater Village, T16N-R18W-Sec. 14, 15, 23, 24, 25, & 26.	Flood Hazard Area Coastal Lake

a. Area shared by Muskegon County

TABLE II-1 (continued)

OCEANA COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(34) Stony Lake & Watershed	Benona Twp., Benona Village, & Clay Banks Twp. T14N-R18W-Sec. 26, 27, 28, 29, 31, 32, 33, 34, & 35. T13N-R18W-Sec. 3, 4, 5, & 6.	Flood Hazard Area Coastal Lake
(35) Benona Orchards	Benona Twp. T14N-R19W-Sec. 1, 12, & 13	Agricultural Area
(37) Clay Banks Orchards & Row Crops	Clay Banks Twp. T13N-R18W-Sec. 8, 9, 16, 21, 27, 28, 33, & 34.	Agricultural Area
(38) Golden Broadcast Crops	Golden Twp. T15N-R18W-Sec. 8 & 17	Agricultural Area
(42) Indian Mounds	Benona Twp. T13N-R18W-Sec. 5	Archaeologic Site
(46) Silver Lake Dunes	Golden Twp. T15N-R19W-Sec. 24 & 25. T15N-R18W-Sec. 17, 18, 19, 20, & 30.	Sand Dune Area
(49) Flower Greek Dunes[a]	Clay Banks Twp. T13N-R18W-Sec. 33	Sand Dune Area

a. Area shared by Muskegon County

TABLE II-1 (continued)
OCEANA COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(50) Clay Banks Dunes	Clay Banks Twp. T13N-R18W-Sec. 6, 8, 17, 21, 28, & 33	Sand Dune Area
(52) Bigsbee Lake (Orwig Property)	Benona Twp. T14N-R19W-Sec. 24. T14N-R18W-Sec. 19	Natural Area

TABLE II-1 (*continued*)

MUSKEGON COUNTY APC'S

Area Name (Index No.)	General Location	Area Type
(4) Nugent Sand and Campbell Wyant & Cannon Mineral Resource Area	City of Norton Shores T9N-R17W-Sec. 3	Mineral Resource Area
(5) Pigeon Hill	City of Muskegon T10N-R17W-Sec. 28	Recreation Area
(6) Swett Property	City of Norton Shores T9N-R17W-Sec. 14	Recreation Area
(7) Pioneer County Park	Laketon Twp. T10N-R17W-Sec. 6	Recreation Area
(9) Whitey's Woods	City of Norton Shores T9N-R17W-Sec. 14	Recreation Area
(13) Gray Dunes Subdivision	White River Twp. T12N-R18W-Sec. 15	High Risk Erosion Area
(16) Michillinda Beach	Fruitland Twp. T11N-R18W-Sec. 11, 13, & 24	High Risk Erosion Area
(18) Pioneer Park Muskegon State Park Pere Marquette Park Bronson Park	Laketon Twp. & City of Muskegon T10N-R17-Sec. 6, 7, 17, 20, 21, 28, & 33. T9N-R17W-Sec. 3	High Risk Erosion Area

TABLE II-1 (continued)

MUSKEGON COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(19) Mona Shores School District Property	City of Norton Shores T9N-R16W-Sec. 14	High Risk Erosion Area Recreation Area
(23) Grand River, Spring Lake [c] and Associated Wetlands	Fruitport Twp. and Fruitport Village T9N-R16W-Sec. 35 & 36.	Flood Hazard Area Ecologically Sensitive Area Coastal Lake
(24) Flower Creek [b]	White River Twp. T12N-R18W-Sec. 3 & 4	Flood Hazard Area Natural Area
(25) Little Black Lake [c]	City of Norton Shores T9N-R16W-Sec. 31 & 32	Flood Hazard Area Coastal Lake
(26) Muskegon Lake, Bear Lake and Muskegon River	City of Muskegon, City of North Muskegon, & Laketon Twp. T10N-R17W-Sec. 12, 13, 14, 21, 22, 23, 24, 25, 26, 27, 28, 34, 35, & 36. T10N-R16W-Sec. 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, & 22.	Flood Hazard Area Coastal Lake & River Mouth Urban Area
(27) Duck Lake, Muskrat Lake	Fruitland Twp. T11N-R18W-Sec. 24 & 25. T11N-R17W-Sec. 18, 19, & 30.	Flood Hazard Area Coastal Lakes Ecologically Sensitive Areas

b. Area shared by Oceana County

c. Area shared by Ottawa County

TABLE II-1 (continued)

MUSKEGON COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(28) White Lake, White River	Fruitland Twp., White River Twp., City of Whitehall, City of Montague. T11N-R18W-Sec. 2, 11, 12. T11N-R17W-Sec. 4, 5, 6, 7. T12N-R17W-Sec. 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, and 34.	Flood Hazard Area Coastal Lake & River
(33) Mona Lake, Black Creek, Little Black Creek	City of Norton Shores, City of Muskegon Heights. T9N-R17W-Sec. 12, 13, & 14. T9N-R16W-Sec. 7, 8, 9, 17, 18.	Flood Hazard Area Coastal Lake Ecologically Sensitive Area Recreation Area
(36) White River Row Crops	White River Twp. T12N-R18W-Sec. 22, 23, & 26.	Agricultural Area
(40) Mouth Cemetery	White River Twp. T11N-R18W-Sec. 2	Archaeologic Area

TABLE II-1 (continued)
MUSKEGON COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(43) White Lake Lighthouse	Fruitland Twp. T11N-R18W-Sec. 2	Historic Area
(49) Flower Creek Dunes [b]	White River Twp. T12N-R18W-Sec. 4	Sand Dune Area
(51) Hoffmaster State Park [c]	City of Norton Shores T9N-R17W-Sec. 25 & 36. T9N-R16W-Sec. 31	Natural Area
(53) Old WhiteLake Channel & Bayou	White River Twp. T11N-R18W-Sec. 2	Natural Area Historic Area
(54) Lost Lake	Laketon Twp. T10N-R17W-Sec. 16	Ecologically Sensitive Area

b. Area shared by Oceana County
c. Area shared by Ottawa County

TABLE II-1 (continued)
OTTAWA COUNTY APC'S

Area Name (Index No.)	General Location	Area Type
(1) Standard Sand - Sand Mine	Grand Haven Twp. T7N-R16W-Sec. 4 & 5	Mineral Resource Area
(3) Construction Aggregates - Sand Mine	City of Ferrysberg T8N-R16W-Sec. 17 & 18	Mineral Resource Area
(11) Idlewood Beach	Park Twp. T5N-R16W-Sec. 28	High Risk Erosion Area
(12) Postma Subdivision	Port Sheldon Twp. T6N-R16W-Sec. 21	High Risk Erosion Area
(14) Kirk Park	Grand Haven Twp. T7N-R16W-Sec. 33	High Risk Erosion Area
(15) Tunnel Park	Park Twp. T5N-R16W-Sec. 21	High Risk Erosion Area
(20) Stickney Ridge	Grand Haven Twp. T8N-R16W-Sec. 32	High Risk Erosion Area

TABLE II-1 (continued)

OTTAWA COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(23) Grand River, Spring Lake, and Associated Wetlands [a]	City of Ferrysburg, City of Grand Haven, Spring Lake Village, Spring Lake Twp., Grand Haven Twp., T8N-R16W-Sec. 1, 2, 3, 10, 11, 12, 14, 15, 16, 17, 19, 20, 21, 22, 23, 25, 26, 27, 29, 30, 34, 35, & 36. T7N-R16W-Sec. 1, 2, 3	Flood Hazard Area Ecologically Sensitive Area Coastal Lake & River
(25) Little Black Lake [a]	Spring Lake Twp. T8N-R16W-Sec. 5 & 6	Flood Hazard Area Coastal Lake
(31) Lake Macatawa, Macatawa River	City of Holland, City of Zeeland, Park Twp., Holland Twp. T5N-R16W-Sec. 25, 26, 27, 33, 34, 35, & 36. T5N-R15W-Sec. 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, & 31	Flood Hazard Area Ecologically Sensitive Area Coastal Lake and River

a. Area shared by Muskegon County

TABLE II-1 (continued)

OTTAWA COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(32) Pigeon Lake, Pigeon Creek	Port Sheldon Twp. T6N-R16W-Sec. 12, 13, 14, 15, 16, 21, & 22	Flood Hazard Area Coastal Lake & River
(39) City of Grand Haven Island Property	City of Grand Haven T8N-R16W-Sec. 16, 17, 20, & 21	Island Area
(41) Port Sheldon (Village)	Port Sheldon Twp. T6N-R16W-Sec. 15 & 16	Historic Area
(44) Rix Robinson Trading Post	City of Grand Haven T8N-R16W-Sec. 21	Historic Area
(45) Grand Haven Lighthouse & Pier	City of Grand Haven T8N-R16W-Sec. 30	Historic Area
(47) Ferrysburg Dune Blow Out	City of Ferrysburg T8N-R16W-Sec. 18	Sand Dune Area
(48) North Shore Sand Dunes	City of Grand Haven T8N-R16W-Sec. 19 & 20	Sand Dune Area

TABLE II-1 (continued)
OTTAWA COUNTY APC'S (continued)

Area Name (Index No.)	General Location	Area Type
(51) Hoffmaster State Park [a]	Spring Lake Twp. T8N-R17W-Sec. 1. T8N-R16W-Sec. 6	Natural Area

a. Area shared by Muskegon County

CHAPTER III
APC DESCRIPTIONS

As previously indicated, this chapter will examine each recognized APC in Region 14. Each APC will first be located using a simple map. Figure III-1 (page 19) is provided so as to help the reader orient him or herself with regards to the region in general. Figure III-1 shows Oceana, Muskegon, and Ottawa Counties and the Region 14 defined Coastal Zone Boundary.

After locating each APC, a general description will indicate those specific attributes which made the site an area of particular concern. A sketch will be provided to show what the site looks like and how its physical dimensions relate to neighboring land uses.

Next follows a brief discussion of major concerns. Problems affecting each APC will be spelled out and examined. The severity and persistance of these problems will be the focus of attention.

Management needs will be evaluated and management alternatives sometimes suggested. Some suggestions may boarder on being impractical. Some very promising management options may have inadvertently been omitted. The discussion of management alternatives is intended to stimulate some thought in hopes of attaining some workable and implementable solutions to the problems and potential problems identified.

Finally, a "status report" will highlight recent and expected developments regarding each identified APC. This discussion will aid in reassigning regional action priorities to be outlined in Chapter IV.

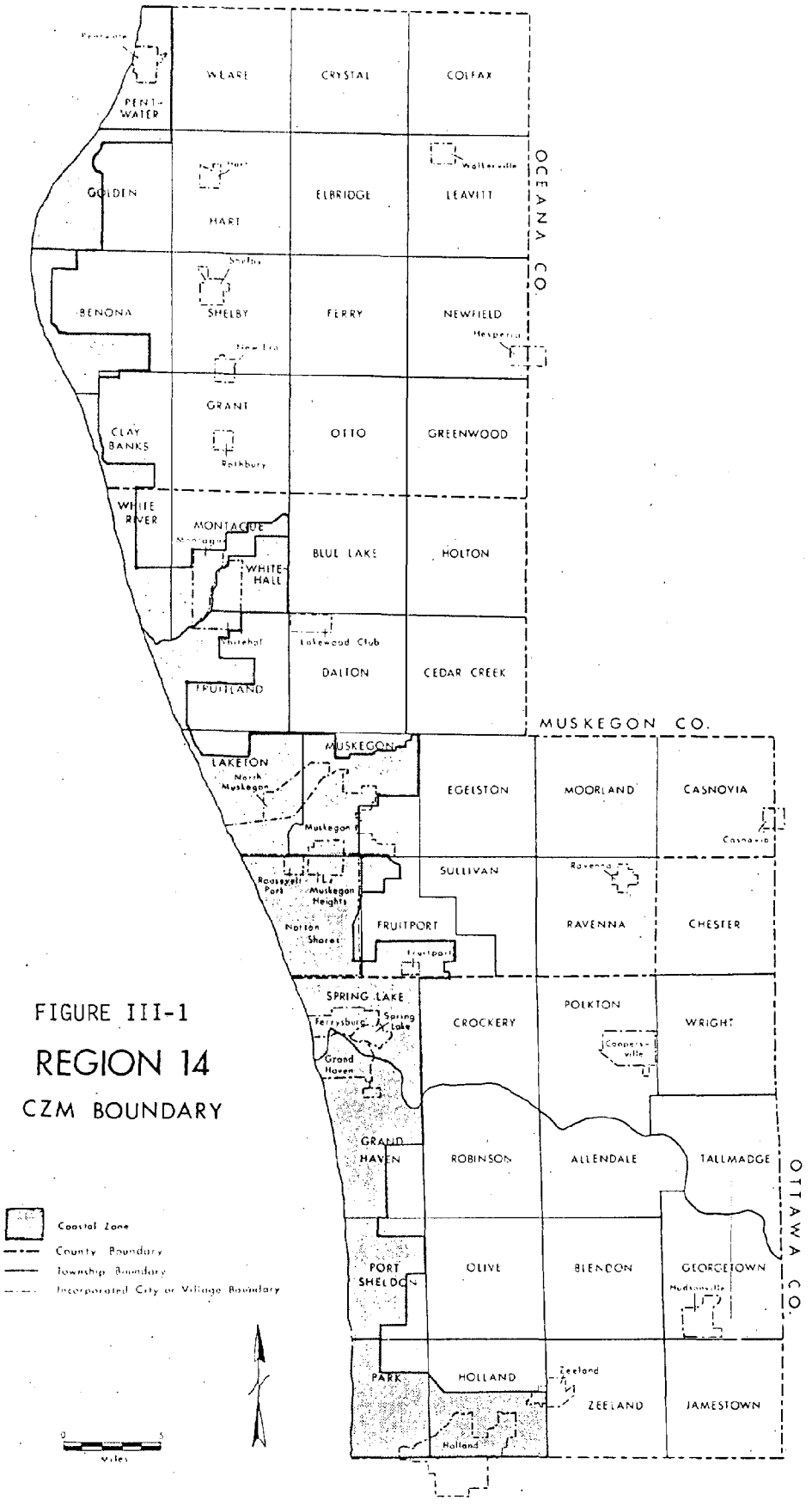
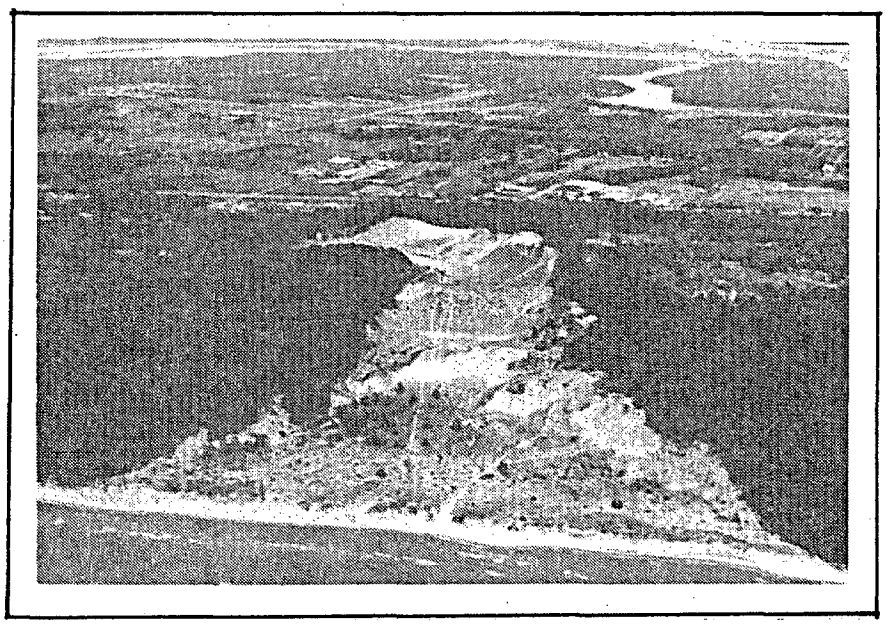


FIGURE III-1

REGION 14

CZM BOUNDARY

1. STANDARD SAND - SAND MINE



Photograph III-1
Aerial View of "Rosy Mound," Standard Sand - Sand Mine
MINERAL RESOURCE AREA OF PARTICULAR CONCERN

1. Standard Sand - Sand Mine

A. LOCATION: Grand Haven Twp., Ottawa County T7N-R16W-Sections 4 & 5.

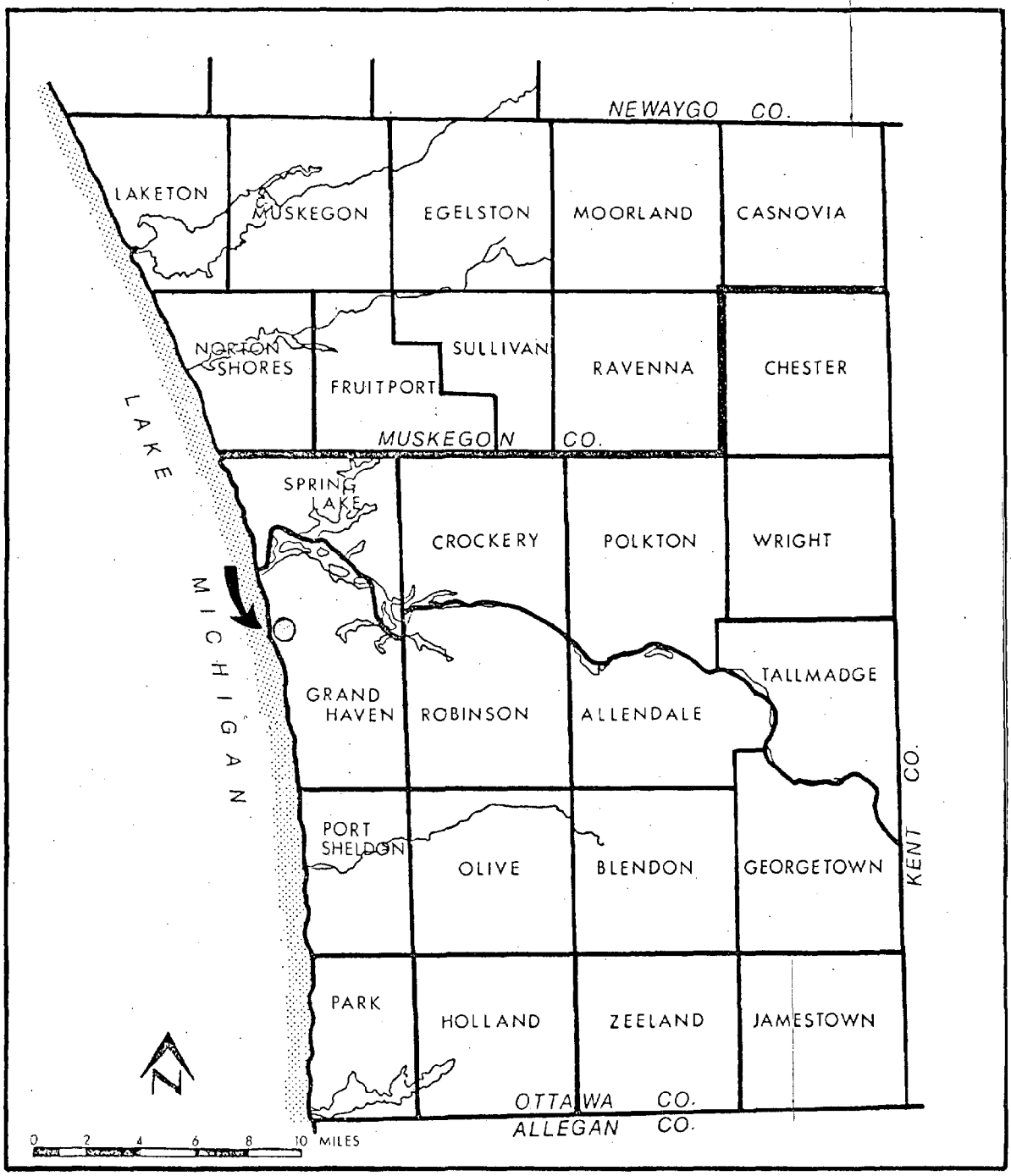


Figure III-2
General Location
Standard Sand - Sand Mine

1. Standard Sand - Sand Mine

B. DESCRIPTION:

The Standard Sand Corporation and the Construction Aggregates Corporation own approximately 300 acres of dune land along Lakeshore Drive in Sections 4 and 5 of Grand Haven Township, Ottawa County. Lakeshore Drive divides this property into two parcels, the biggest of which lies west of the road and consists of approximately 230 acres. This larger parcel has been actively mined since 1926 and has a reserve expected to last another 75 years. The Standard Sand Corporation has indicated that it plans to mine sand west of Lakeshore Drive until its reserves are exhausted and then develop the site as a Planned Unit Development following Grand Haven Township guidelines.

Only a small portion of this site is at present actively mined. The site is pretty much hidden from passers-by along Lakeshore Drive by the steep, heavily wooded slopes which border the road. A quick look down the railroad spur and access road which follow into the site will afford the interested observer a glance at some small buildings, a conveyor system, and perhaps the earth moving vehicle the company uses in its mining operation. The only other evidence which suggests that the area is being mined is bulldozer and conveyor noise, and the sometimes bothersome sand which is blown over the dune face onto Lakeshore Drive just south of the site's access point.

In viewing the site from the air or from Lake Michigan, the 50 years of previous mining becomes much more apparent. The dunes in this area vary in elevation from 600 feet to 800+ feet above sea level. Extending southwest from the existing sand mining site is what appears to be a blown out area of approximately 70 acres. This is the area which has already been mined and remains only partially vegetated. The Company apparently intends to expand this already mined area along all sides. Figure III-3 describes the area's general setting and adjacent land uses.

1. Standard Sand - Sand Mine

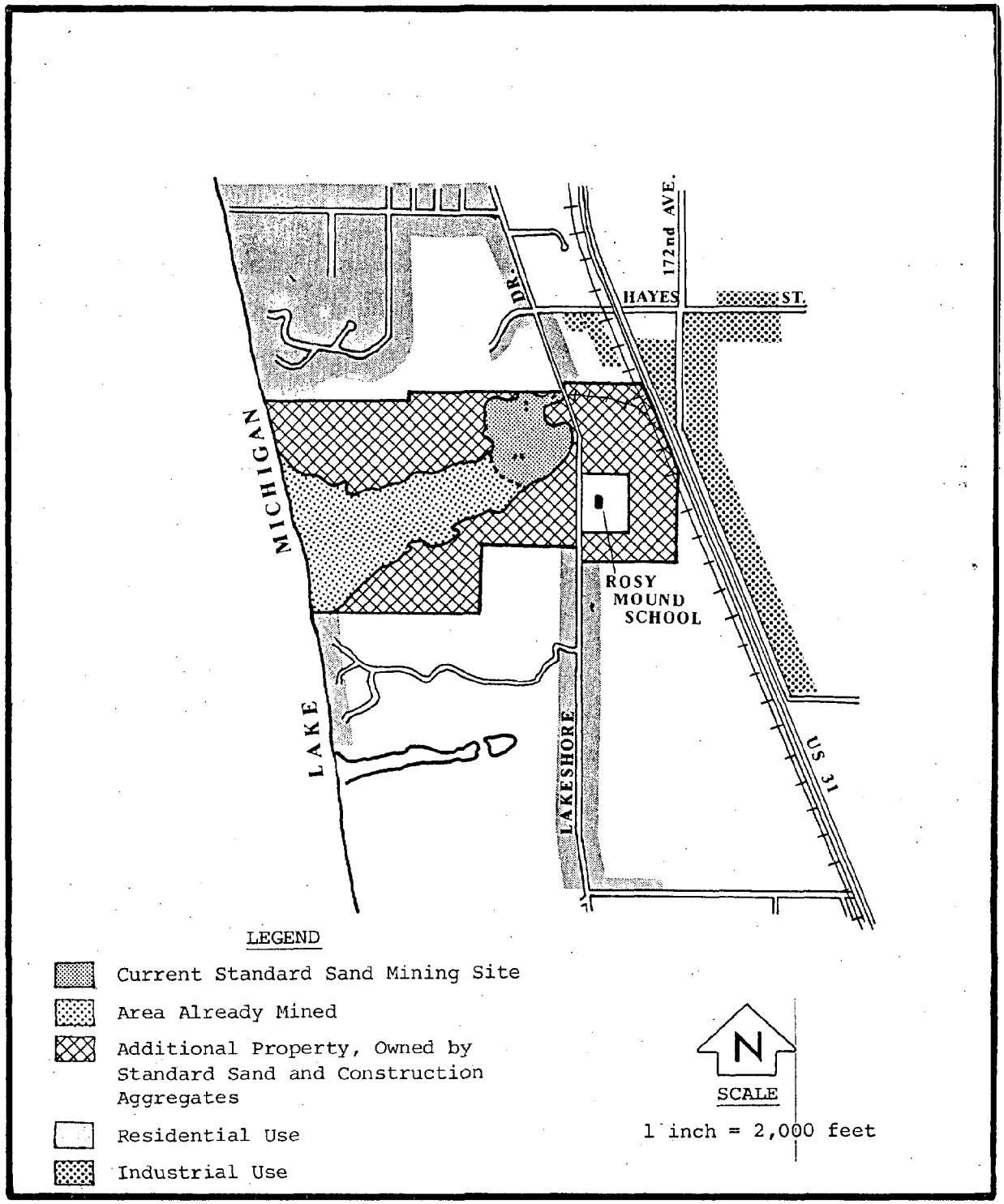


Figure III-3
Site Description
Standard Sand - Sand Mine

1. Standard Sand - Sand Mine (cont.)

C. MAJOR CONCERNS:

The removal of dune sand can have very significant social-economic consequences and very definite environmental impacts. There are important benefits as well as numerous costs associated with each mining operation. The WMSRDC staff uses two criteria when it evaluates a given mining operation: 1) does the operator seek to minimize the loss of natural and environmental values, and 2) are anticipated reclamation efforts consistent with surrounding land uses and the community's long range goals.

In looking at the Standard Sand site, it is obvious that the area has tremendous environmental and asthetic value. There are, however, no known endangered plant or animal species in the area. (An investigative study would be required to confirm the absense of endangered species). The mining operation itself is screened from view by an existing buffer zone. Standard Sand will most probably continue to maintain this buffer zone and thus retain some measure of asthetic values.

In that the site has been mined for the last 50 years, the real concern centers upon the area's reclaimed or secondary use. Company spokesmen maintain that the area will be developed as a Planned Unit Development capitalizing on the sites' residential values. This concept would appear consistent with existing land uses as described in Figure III-2. A preliminary site plan has been prepared for Grand Haven Township describing anticipated secondary use. Township representatives are, however, reluctant to approve a plan which will take more than 50 years before it is implemented. Township representatives also seem somewhat apprehensive concerning the expansion of mining operations at this site given the character and asthetic values associated with these dunes.

1. Standard Sand - Sand Mine (cont.)

D. MANAGEMENT NEEDS:

The Sand Dune Protection and Management Act, Public Act 222, was passed by the Michigan Legislature in 1976. The Act provides for the study, protection, management, and reclamation of Great Lakes sand dunes. This legislation was specifically enacted so as to control the sometimes indiscriminate destruction of dune environments through the mining of sand. Surprisingly enough, this legislation might not have been adopted if it hadn't finally received some support from the mining industry.

Public Act 222 requires each mining operator to obtain a mining permit from the Department of Natural Resources. In order to obtain a permit, each operator must prepare and submit an environmental impact statement, a progressive cell-unit mining and reclamation plan, and a 15-year mining plan. The Commission of Natural Resources has just recently adopted Administrative Rules designating certain sand dune areas and, thus, requires a permit from mining operators in these areas. Much of Grand Haven Township's shoreline is designated as a sand dune area to be protected by P.A. 222. Standard Sand will thus be required to obtain a DNR permit. Standard Sand, like all mining operations subject to this permit requirement, must in addition pay a fee of not more than 1 cent per ton of sand mined so as to compensate DNR for surveillance, monitoring, administration, and enforcement of P.A. 222.

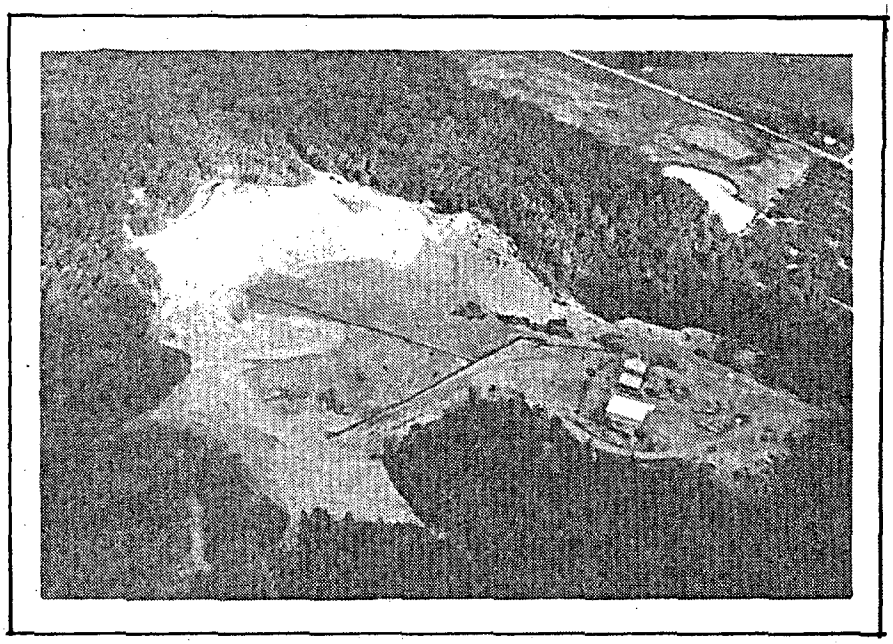
The enactment and enforcement of P.A. 222 holds considerable promise concerning the management of Standard Sand's Grand Haven site. What happens to this area once the site is mined out remains up to the Company and Grand Haven Township. The eventual development of this site poses significant opportunities and requires thoughtful consideration. There is much sand yet to be mined but the 75 year estimated reserve considers a specific rate of withdrawal. If for some reason sand was to be removed at a rate which surpasses that expected, the entire area might be ready for development in considerably less time. It seems essential that a detailed site plan be developed and approved by the Grand Haven Township Board of Supervisors, given the uncertainties concerning subsequent use and reclamation efforts. This site plan should contain reasonable deadlines and a systematic step-by-step redevelopment schedule.

1. Standard Sand - Sand Mine (cont.)

E. APC STATUS:

The Standard Sand mining operation in Grand Haven Township was considered a possible coastal area of particular concern before P.A. 222 was passed in 1976. The West Michigan Shoreline Regional Development Commission chose to recognize this area as an APC to demonstrate a need for legislation like P.A. 222. In addition, the WMSRDC assigned this area High priority further emphasizing the general need for sand mining controls. Now that P.A. 222 has been adopted, rules promogated, and enforcement begun, the WMSRDC will reduce the priority assigned to this area from High to Medium. The area will remain a concern simply because it is so large and the resource is so dramatically affected by mining activity.

2. SAND MINE (GOLDEN TWP.)



Photograph III-2
Aerial View of Sand Mine in Golden Twp.
MINERAL RESOURCE AREA OF PARTICULAR CONCERN

2. Sand Mine (Golden Twp.)

A. LOCATION: Golden Twp., Oceana County T15N-R18W-Sections 17 & 18.

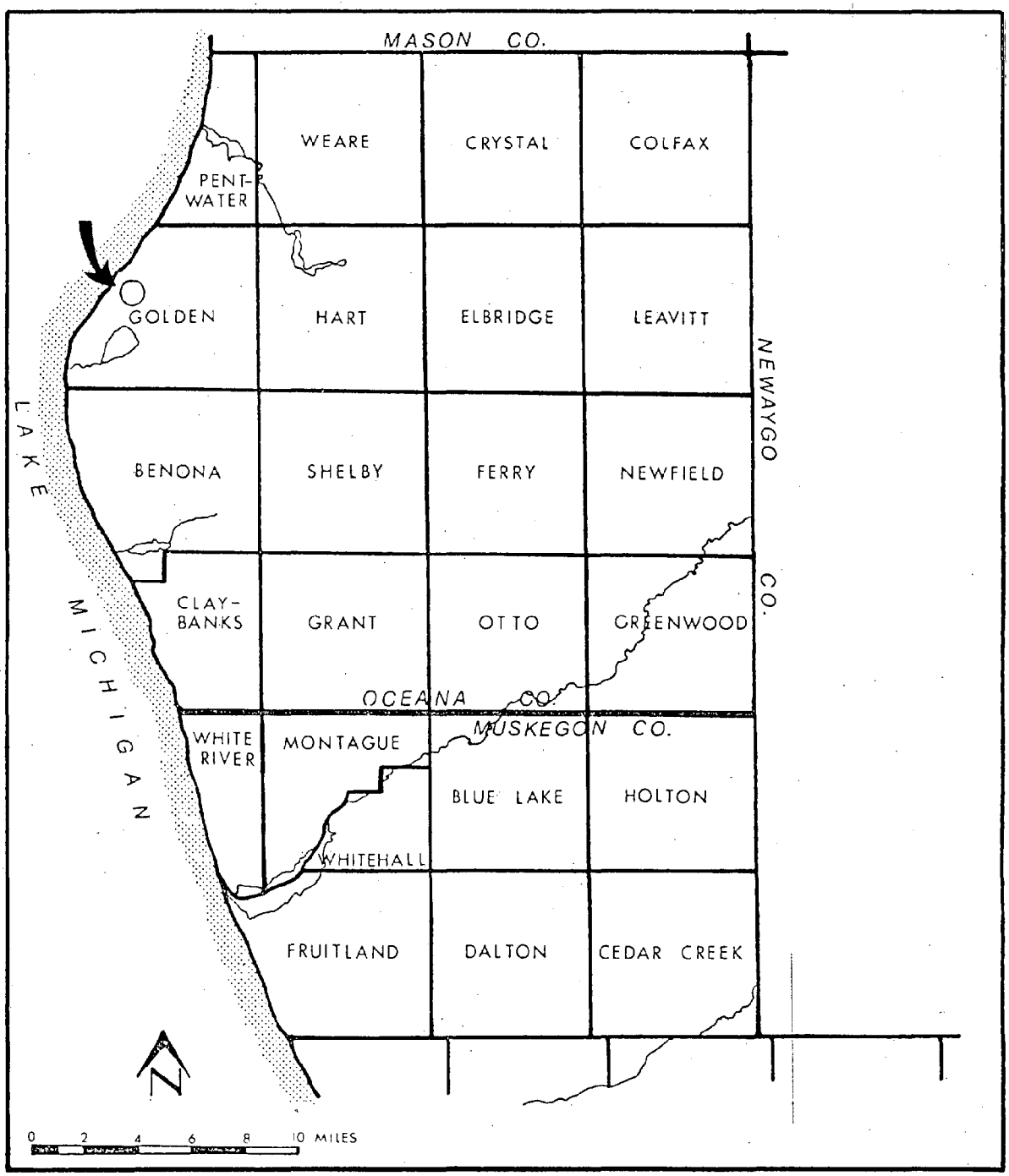


Figure III-4
General Location
Sand Mine (Golden Twp.)

2. Sand Mine (Golden Twp.) (cont.)

B. DESCRIPTION:

Mining at this site began late in 1974. Prior to this time the area was heavily wooded with an elevation ranging from 640 feet to 740 feet above sea level. The land being mined is owned by several individuals and their corporations. These private land holdings total approximately 800 acres, but the extraction of sand is expected to occur on only 160 acres.

Few details are known concerning this relatively new sand mining operation. The local land owners had apparently invested in this property expecting that it would someday be developed. These land owners evidently leased the property and/or sold the mineral rights to the Sand Products Corporation so that the land could be leveled and thus made more amendable to residential development. Although the estimated life expectancy of this operation is not known, it is thought to be a relatively short term effort taking perhaps 20 or 25 years to complete.

Approximately 25 acres of land lay exposed and subject to active mining. The site is less than one half mile from the Sahara Sands and Juniper Beach subdivisions. The site lies adjacent to Silver Lake State Park. Figure III-5 describes the general setting and the positon of adjacent land uses.

C. MAJOR CONCERNS:

Major concerns stem from the site's proximity to nearby residential areas and the Silver Lake State Park (another WMSRDC recognized APC). Increased noise, traffic, road wear, and loss of asthetic values have been labled as potential problems. The absence of any known reclamation plan is considered a major deficiency.

D. MANAGEMENT NEEDS:

Almost nothing is known about the operator's mining plan or subsequent use. It is hoped that the DNR, using P.A. 222, will be able to pin down Sand Products Corporation intentions as well as long term development concepts envisioned by the existing land owners.

2. Sand Mine (Golden Twp.)

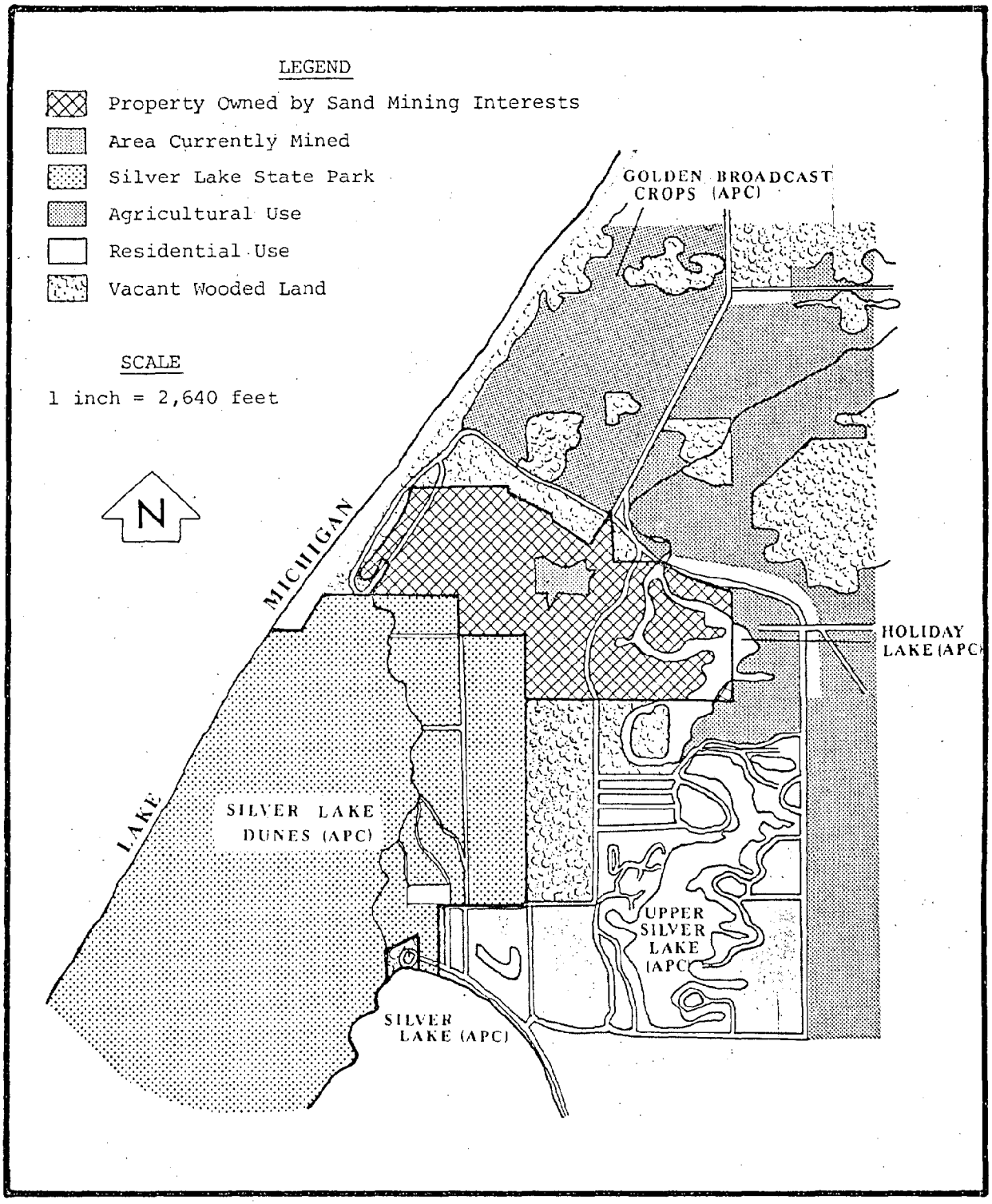


Figure III-5
Site Description
Sand Mine (Golden Twp.)

2. Sand Mine (Golden Twp.) (cont.)

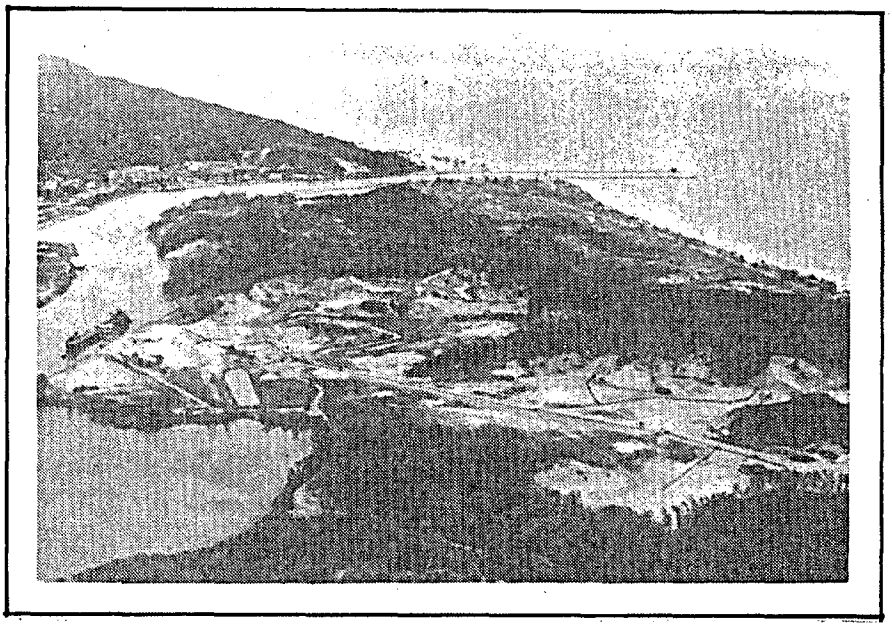
E. APC STATUS:

The Sand Mine operated by Sand Products Corporation in Golden Township met with considerable opposition from local residents and some members of the DNR staff. The operation demonstrated just how vulnerable dune lands were to mining practices. A mining company need not own the land in order to mine it. A marginal reserve can be made a practical mining investment given cooperation like that provided by these local land owners.

The mining site was considered as one of the first Region 14 APC's. DNR interest in the site, motivated by its proximity to Silver Lake State Park, has perhaps caused the mining operator to make certain consessions regarding operating hours, trucking routes, etc. Sand Products Corporation was, for instance, required to submit a $20,000 bond to the Oceana County Road Commission for possible damages its trucks might inflict upon area roads.

This site was originally recognized as a medium priority APC. This priority will remain unchanged until P.A. 222 is implemented and Sand Products Corporation obtains a DNR mining permit.

3. CONSTRUCTION AGGREGATES -
SAND MINE



Photograph III-3
Aerial View of Construction Aggregates-
Sand Mine

MINERAL RESOURCE AREA OF PARTICULAR CONCERN

3. Construction Aggregates - Sand Mine

A. LOCATION: City of Ferrysburg, Ottawa County T8N-R16W-Sec. 17 & 18.

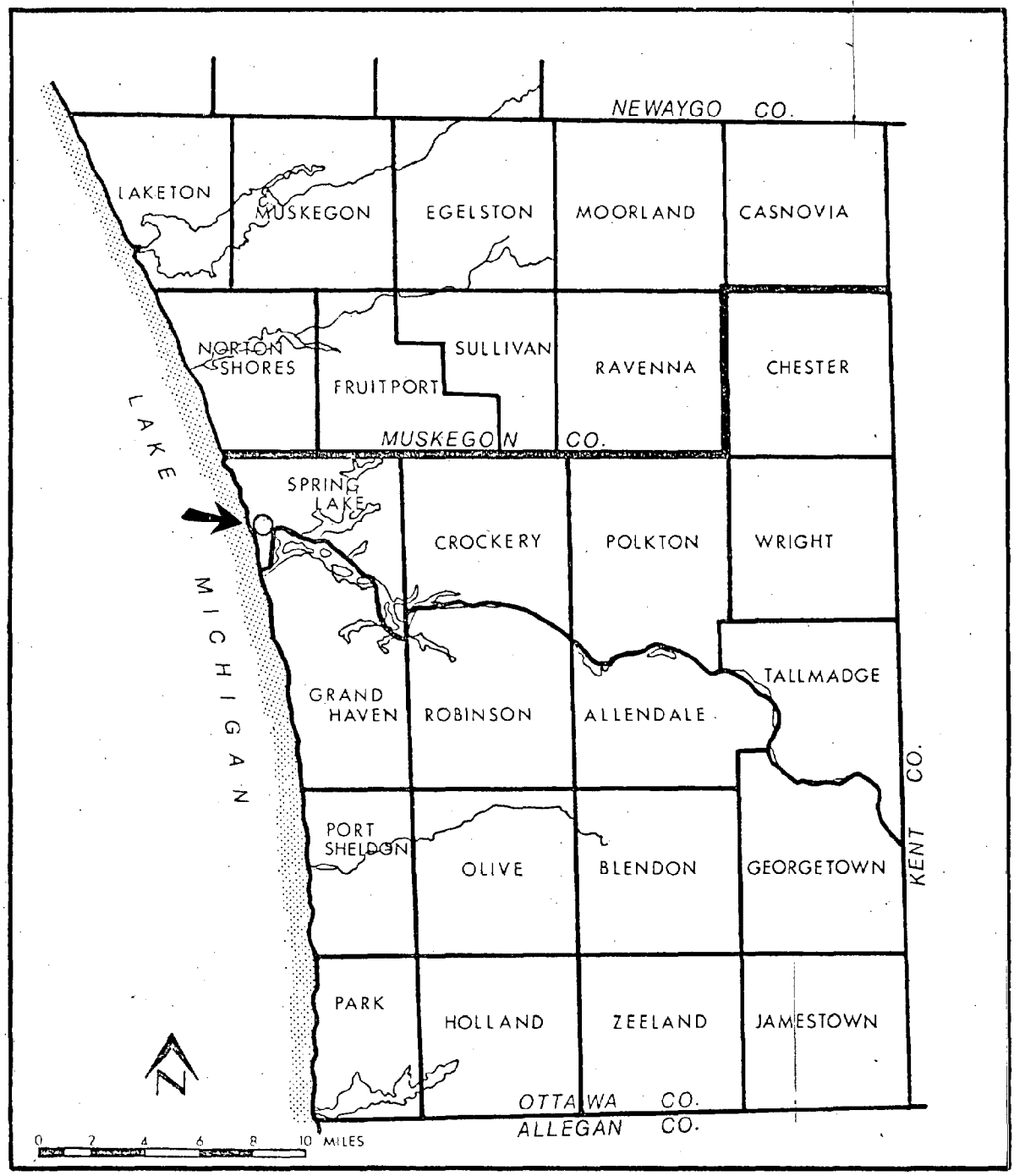


Figure III-6

General Location Construction Aggregates Sand Mine

3. Construction Aggregates - Sand Mine (cont.)

B. DESCRIPTION:

The Construction Aggregates Corporation has mined sand from its Ferrysburg site since 1938. The site totals approximately 386 acres. Much of the area has already been mined. Some of the area will be left relatively intact as a buffer zone. Approximately 90 acres still remain available for extraction. The Construction Aggregate Corporation intends to mine this 90 acre parcel until its reserves are exhausted. The company will then excavate below the water table creating an inland lake connected to the Grand River, and develop the site for residential and commercial uses following long range plans accepted by the City of Ferrysburg.

The site is hidden from view along North Shore Road. The site can be seen from US-31 and from locations directly across the Grand River in the City of Grand Haven. The existing dunes extend as much as 730 feet above sea level while much of the adjacent mined out area is slightly below 600 feet. Future mining will apparently follow existing exposed bluffs in a north, west, and southerly direction. Figure III-7 describes the general area and adjacent land uses.

C. MAJOR CONCERNS

The Construction Aggregates - Sand Mine, in the City of Ferrysburg, has been active for the last 40 years. WMSRDC concerns are basically limited to the criteria previously mentioned: 1) does the operator seek to minimize the loss of natural and environmental values, and 2) are anticipated reclamation efforts consistent with surrounding land uses and the community's long range goals.

The Construction Aggregates Corporation has taken care to screen mining operations. It is likely that the Company will continue this practice as it will probably enhance property values for subsequent development. In any event, the DNR will probably require that the company maintain a buffer zone like that already in existence. A detailed site investigation is needed to determine whether there exists any endangered species at this location. Similar areas within the same general vicinity do contain such protected species. Construction Aggregates has spent both

3. Construction Aggregates - Sand Mine (cont.)

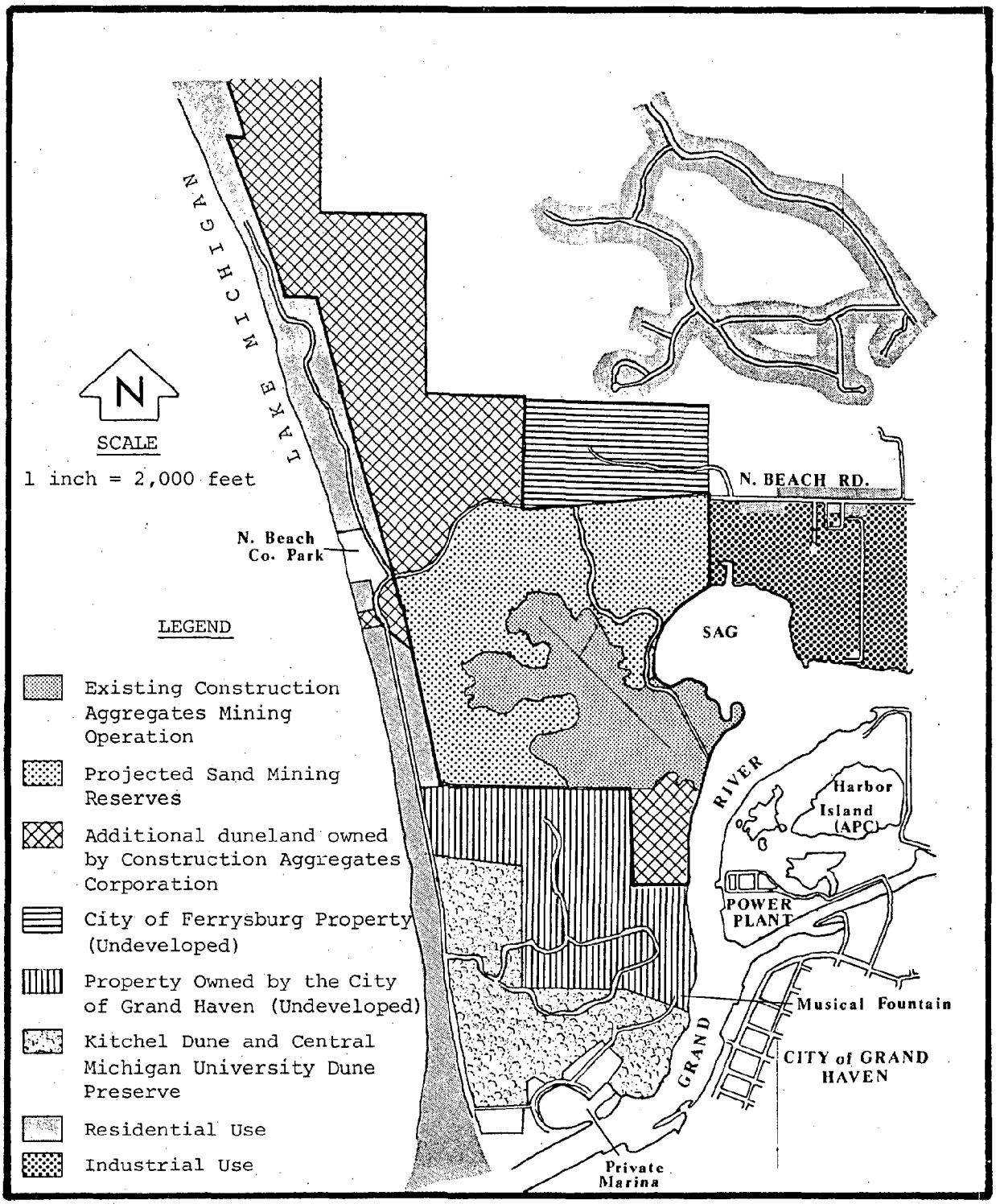


Figure III-7
Site Description
Construction Aggregates - Sand Mine

3. Construction Aggregates - Sand Mine (cont.)

time and effort preparing a development plan which is acceptable to the City of Ferrysburg and has been adopted as part of the City's long range objectives. WMSRDC staff still remain a little apprehensive concerning the implementation of this development scheme without a predetermined schedule. Construction Aggregates has numerous sand and gravel mining sites within Region 14, some of which are now abandoned, none of which have been reclaimed.

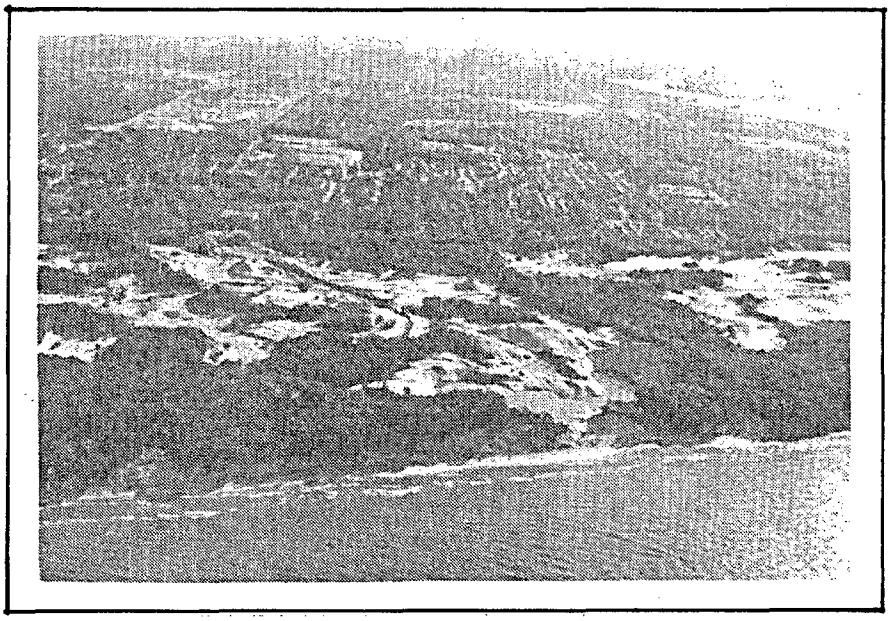
D. MANAGEMENT NEEDS:

The enactment and enforcement of P.A. 222, the Sand Dune Protection and Management Act of 1976, require that the DNR monitor all sand mining operations within designated sand dune areas. The dunelands owned by Construction Aggregates in the City of Ferrysburg have recently been designated for protection by the Michigan Natural Resources Commission. Construction Aggregates is required to obtain a DNR sand mining permit. The Company's anticipated cooperation, together with the DNR's regular surveillance program, should insure compliance with submitted plans.

E. APC STATUS:

The Construction Aggregates sand mining operation at Ferrysburg was considered early as an APC. Its recognition as such by the West Michigan Shoreline Regional Development Commission served to exemplify two factors: 1) there is a real need for sand mining legislation, and 2) this site affords tremendous opportunities for the local community once it is, in fact, reclaimed and developed. The site was originally recognized as a high priority APC. In that P.A. 222 is now being implemented, a High priority classification might be unwarranted. This area will, however, continue to be of enormous concern simply because of the potential its anticipated development holds for the City of Ferrysburg and the entire Northwest Ottawa County community. Priority will be reduced from High to Medium.

4. NUGENT SAND AND CAMPBELL, WYANT, & CANNON MINERAL RESOURCE AREA



Photograph III-4
Aerial View of Nugent Sand and CWC
Sand Mines

MINERAL RESOURCE AREA OF PARTICULAR CONCERN

4. Nugent Sand and CWC Mineral Resource Area

A. LOCATION: City of Norton Shores, Muskegon County, T9N-R17W-Section 3.

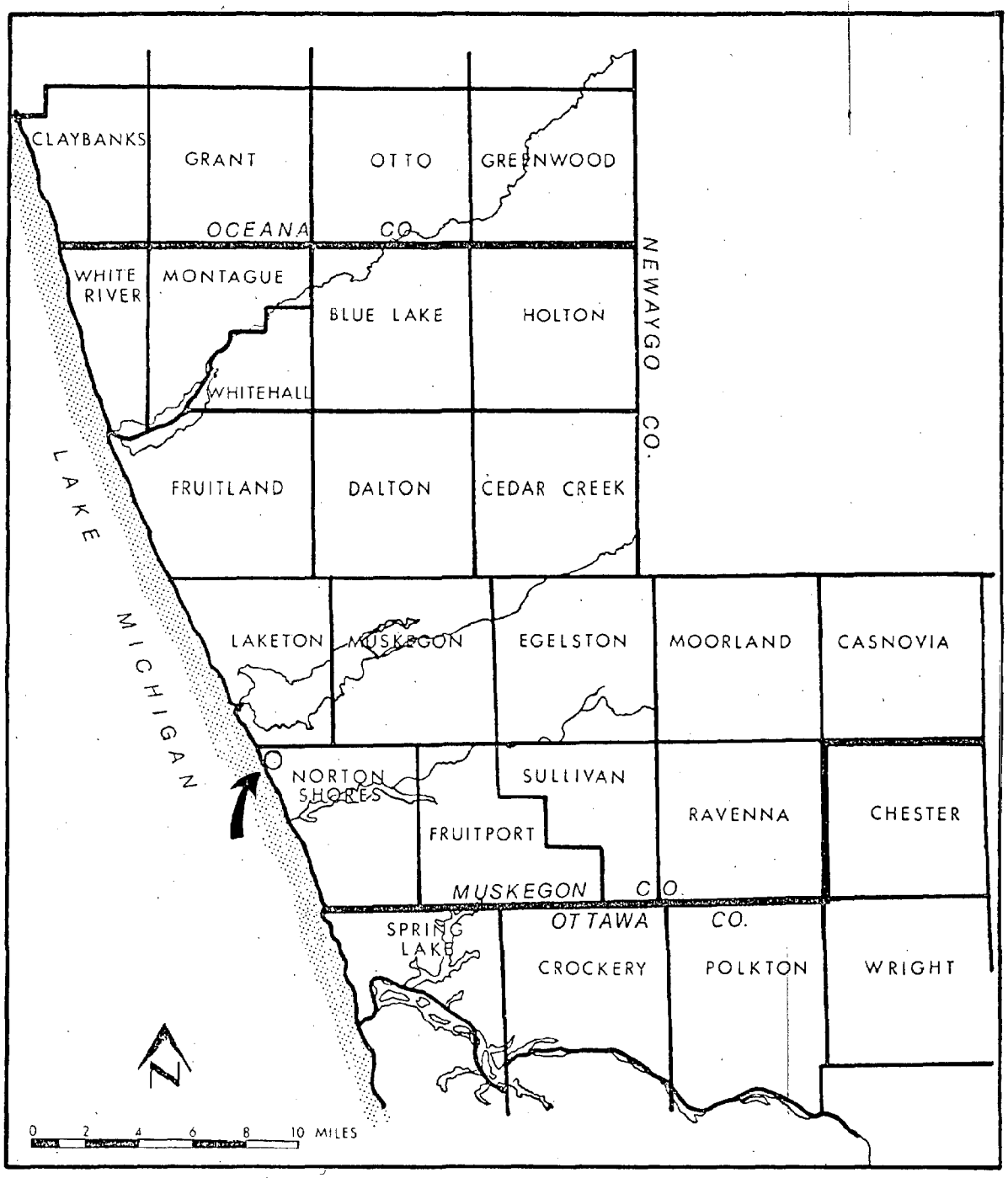


Figure III-8

General Location

Nugent Sand and CWC Mineral Resource Area

4. Nugent Sand and CWC Mineral Resource Area (cont.)

B. DESCRIPTION:

The Nugent Sand Company owns an estimated 440 acres west of Lincoln Road in the City of Norton Shores. The Campbell, Wyant & Cannon Foundry Company owns approximately 85 acres adjacent to and north of the Nugent Sand site. Both operations have been in existance for many years. Although technically owned by separate entities, mining operations have apparently merged so as to form one site. Of the total 525 estimated acres at this location, 220 acres have already been mined. Dunes in the area range from 730 feet above sea level at their highest point, to below 610 feet in the mined areas. The operators have apparently removed sand in some areas down to ground water level. They have, in fact, created a small 15 acre lake on Nugent Sand's portion of the site.

All mining activity is well screened from Lincoln Road and residential development east of the site. The mining operation is relatively well hidden even from the Lake Michigan side except for a 400 ft. section of beach, midway along the site's length, near where the small lake was dug.

Detailed information regarding the operator's future plans and the site's life expectancy is not yet available. The site has significant reserves still remaining. It is expected that the operators will continue to mine this area until these reserves are exhausted. This mining operation could last another twenty or more years.

Figure III-9 describes this general area and adjacent land uses. Photographs III-5 and III-6 show the extent of the mined area as seen from both sides of Winnetaska Road. Photograph III-7 examines current erosion control efforts implemented by the Nugent Sand Company.

4. Nugent Sand and CWC Mineral Resource Area (cont.)

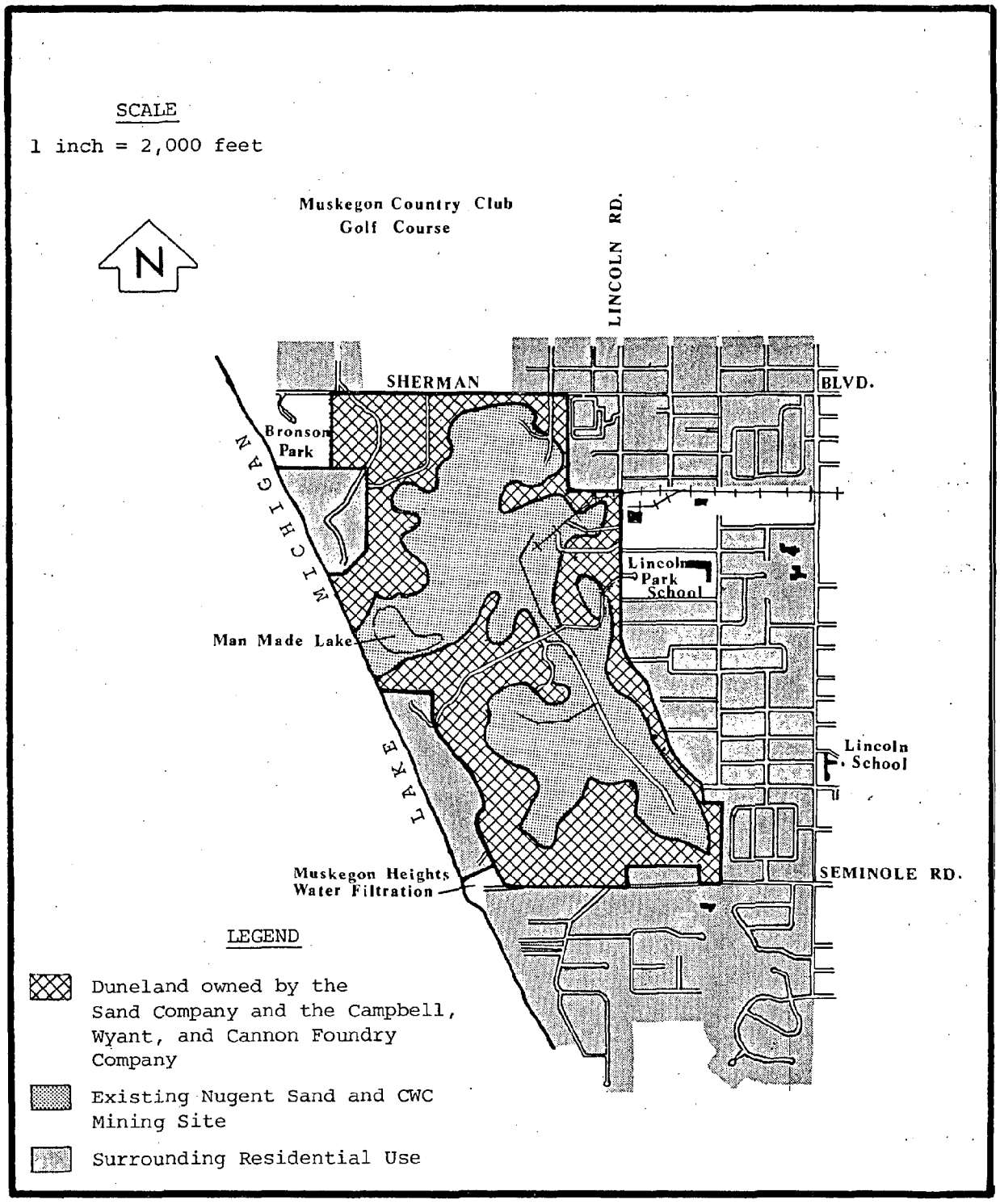
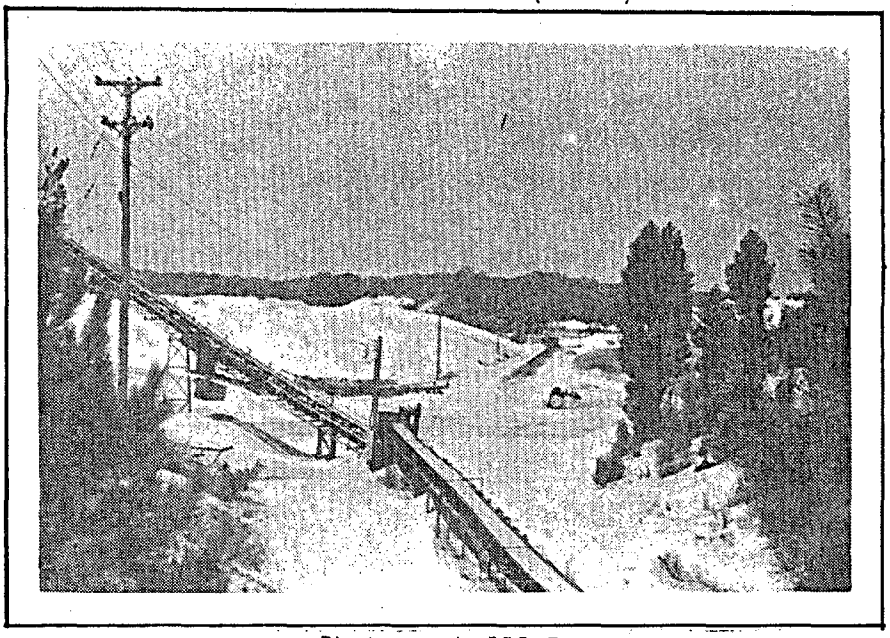


Figure III-7

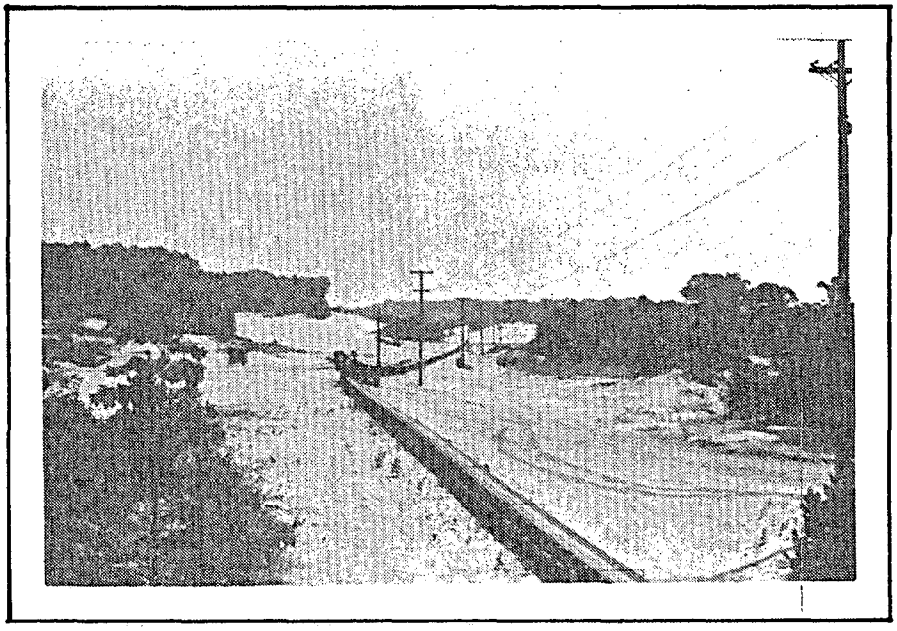
Site Description

Nugent Sand and CWC Mineral Resource Area

4. Nugent Sand and CWC Mineral Resource Area (cont.)

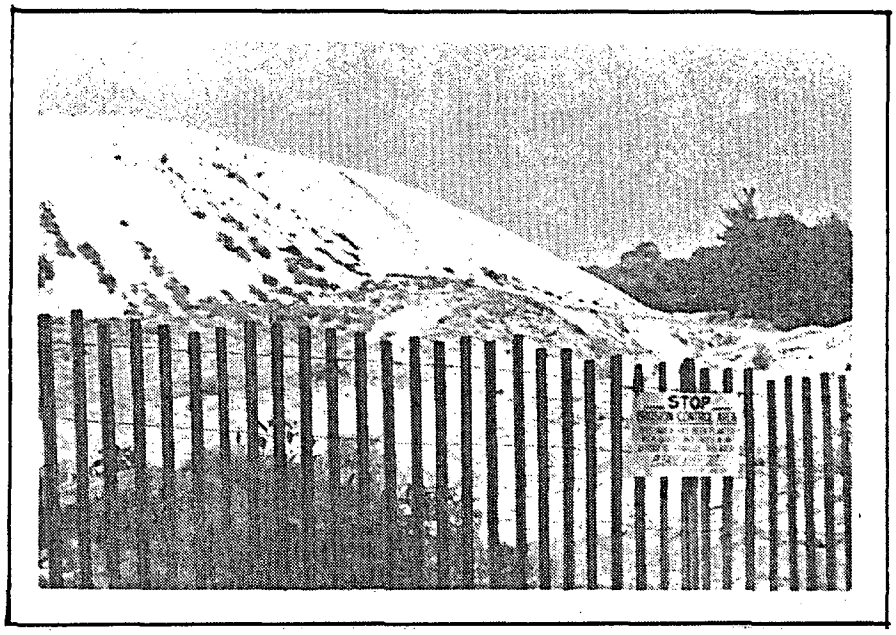


Photograph III-5
Nugent Sand Co., North of Winnetaska Road



Photograph III-6
Nugent Sand Co., South of Winnetaska Road

4. Nugent Sand and CWC Mineral Resource Area (cont.)



Photograph III-7
Nugent Sand Co., Erosion Control Efforts
near the western end of
Winnetaska Road

4. Nugent Sand and CWC Mineral Resource Area (cont.)

C. MAJOR CONCERNS:

The Nugent Sand Company and Campbell, Wyant & Cannon Foundry Company have done well in screening their mining operations. In fact, of the major mining sites located in Region 14, this particular site is the largest, and yet the least noticable, in terms of actual mining activity. Nugent Sand operators have, however, just recently begun the mining of sand on what is known as Tyler Dune, a heavily wooded dune which separates the Nugent Sand mining site from residential development in the Idlewild Resort. A local court decision allows the removal of this sand despite protests from residents in the Tyler Dune area. It seems, however, that the Company has chosen to voluntarily comply with a DNR request asking that they delay the mining of the Tyler Dune area until Nugent Sand has submitted their required Environmental Impact Statement.

Little is known about reclamation plans or subsequent uses expected for this site. The City of Norton Shores has entertained many ideas as to what might work for this location once mining has stopped. Barrie Greenbie and Leo Jakobson, from the University of Wisconsin, Department of Urban and Regional Planning, prepared a comprehensive land use plan for much of Norton Shores dune areas in September 1969. Their findings appeared as a fifth volume in a series of reports done concerning Muskegon County shorelands. This particular report was entitled The Urban Dunes Area, Volume V, Norton Shores Pilot Area Plan. The Greenbie and Jakobson report suggests that much of the mined areas might eventually be designated as a Dunes Intensive Development Area. These areas have already undergone extensive alteration due to mining activity and are thus thought more suitable for intensive urban use. The authors define this intensive use as high density residences, motels, marinas, restaurants, and other compatible facilities. Several years later, in June 1972, G. R. Rankin and Leo Jakobson prepared another planning report directed at a more narrowed area of Norton Shores. This document was entitled, Norton Shores, North Dunes District Plan. This report expanded upon the previous document providing even greater detail concerning proposed development concepts. The Nugent Sand and CWC sites received the focus of attention in this plan. The plan calls for a swimming lagoon, conservancy zone, and an urban parkway to be phased in as

4. Nugent Sand and CWC Mineral Resource Area (cont.)

sand reserves are eventually exhausted. This area is projected as eventually containing 1,360 dwelling units and a population of 4,080 people.

The City of Norton Shores has again solicited the services of Mr. Jakobson who is now working to prepare the City's Master Plan. The Nugent Sand and CWC site will undoubtedly be included as an important element in this long term planning effort.

D. MANAGEMENT NEEDS:

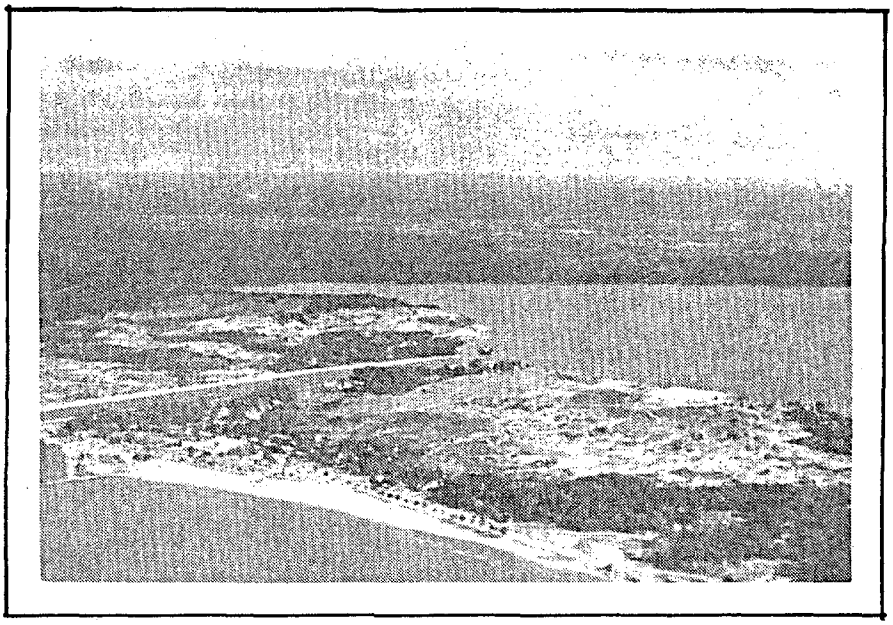
The Michigan Natural Resource Commission has recently adopted rules designating sand dune areas in the City of Norton Shores as part of its enforcement of P.A. 222, the Sand Dune Protection and Management Act of 1976. The Nugent Sand Company and the Campbell, Wyant & Cannon Foundry Company must eventually prepare an environmental impact statement, a progressive cell-unit mining and reclamation plan, and a 15-year mining plan in order to receive a DNR mining permit. With this information and the continued cooperation from these mining operators, the City of Norton Shores should have a pretty good handle as to what is going to happen in this area. DNR monitoring and surveillance should insure compliance with submitted plans.

E. APC STATUS:

The Nugent Sand and CWC Mineral Resource Area was considered as an early APC. The area was recognized as an APC by the West Michigan Shoreline Regional Development Commission to emphasize a need for sand mining legislation. The Commission also recognized the many opportunities that might eventually develop in this area as a result of past mining activities.

The site was originally considered a low priority APC because of its isolated nature and previous planning efforts. Sources indicate, however, that mining operations have been stepped up as a result, perhaps, of P.A. 222 and its inevitable enforcement. Priority for this area will increase, for the immediate future, until DNR can begin its enforcement of P.A. 222 and the City of Norton Shores has completed its Master Plan. Priority will shift from Low to Medium.

5. PIGEON HILL



Photograph III-8
Aerial View of "Pigeon Hill"
RECREATION AREA OF PARTICULAR CONCERN

5. Pigeon Hill

A. LOCATION: City of Muskegon, Muskegon County, T10N-R17W-Section 28.

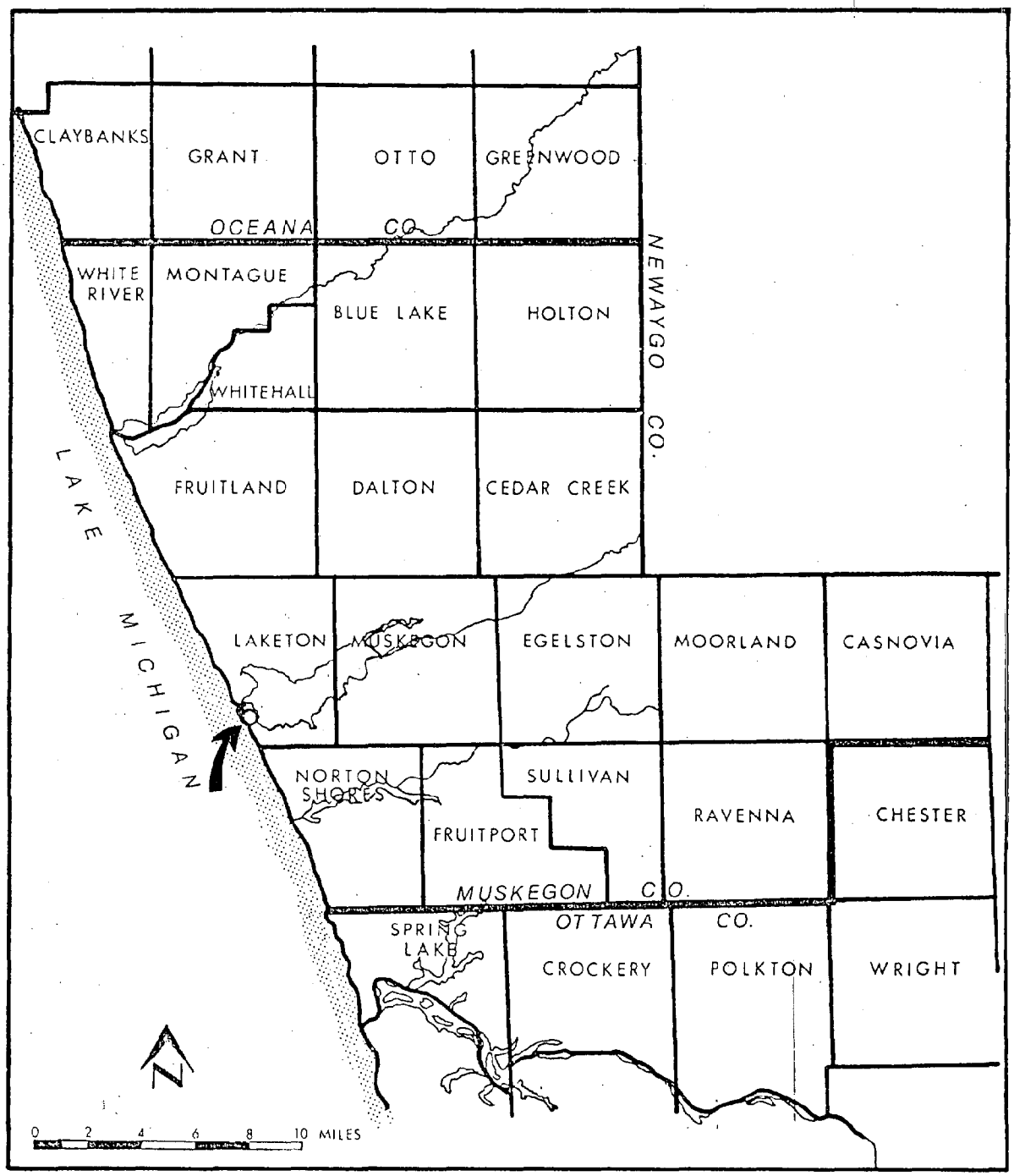


Figure III-10
General Location - Pigeon Hill

5. Pigeon Hill (cont.)

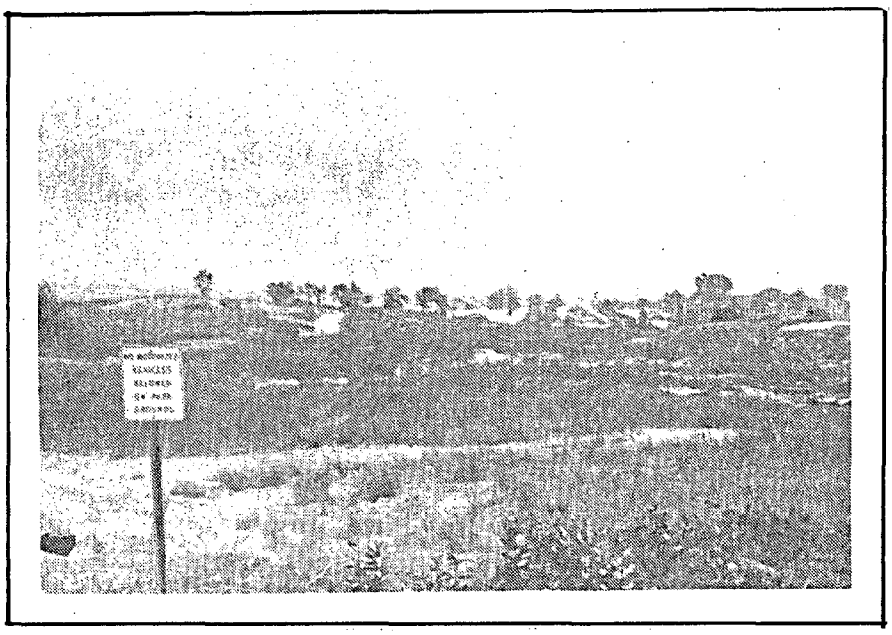
B. DESCRIPTION:

The Pigeon Hill area was at one time a dune area similar in character to that of Muskegon State Park, located just north of the Pigeon Hill site on the opposite side of the Muskegon Lake Channel. The Pigeon Hill area was mined-out many years ago leaving a sparsely vegetated rolling landscape which has remained essentially abandoned.

The area consists of approximately 170 acres and is basically divided into two large parcels. The largest parcel, nearly 100 acres, is owned by the City of Muskegon. The smaller parcel lies south of the City property and contains almost 70 acres. This smaller parcel is still owned by Sand Products Corporation, the mining company which extracted sand at this location beginning in the early 1940's.

The Pigeon Hill area was mined down to the ground water table and is in some spots below 580 ft. above sea level. Ridge areas adjacent to Bluffton School and residential properties found south of the site are in some places above 660 ft. in elevation. Most of the area is between 580 ft. and 590 ft. The Pigeon Hill area is mostly surrounded by private residential development. Although considerable in size, access to this site is somewhat limited. Fulton Street, running north of the site along the Muskegon Lake Channel, provides the only public access to the City's property (refer to Photograph III-9). The site does, however, share 2,150 ft. of Muskegon Lake frontage.

5. Pigeon Hill (cont.)



Photograph III-9
Access to "Peninsula Park" off Fulton Street

5. Pigeon Hill (cont.)

Figure III-11 will describe the area's general setting and adjacent land uses.

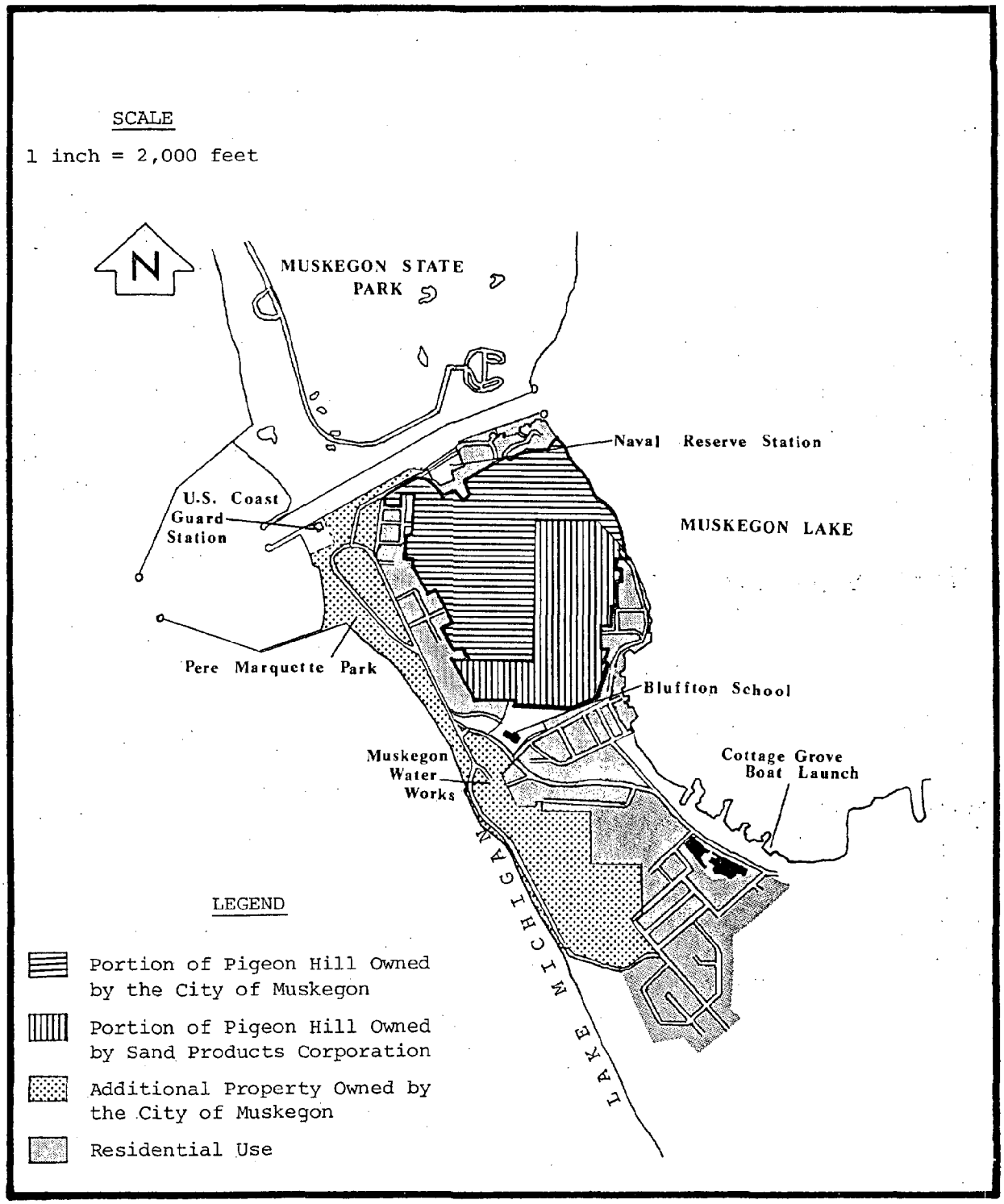


Figure III-11
Site Description
Pigeon Hill

5. Pigeon Hill (cont.)

C. MAJOR CONCERNS:

The Pigeon Hill area holds tremendous development potential for the City of Muskegon. The site will play a critical role in the redevelopment and revitalization of Muskegon's lakefront. Great care must be given to the design and implementation of proposed development concepts.

Concerns center upon just what kind of development should occur at the Pigeon Hill site. The area seems particularly suited to recreational uses and is therefore recognized and categorized as a Recreation Area of Particular Concern. The community seems fairly supportive regarding this proposed use, yet there remains some debate as to whether recreational activities should be limited to passive uses, like picnic areas and campgrounds, or developed for active recreation with marinas, swimming pools, hotel complex, etc.

The City of Muskegon has entertained many varying ideas concerning the development of the Pigeon Hill site. The most recent of these concepts was articulated by Leo Jakobson and associates in a report entitled, Muskegon Lake: A Study of Opportunities, published in June 1974. The following excerpt summarizes the suggested development plan: "The development proposals include creation of lagoons and boat-mooring facilities in the lower areas, surrounded by marinas and service facilities such as restaurants and hotels. A shopping plaza is also proposed, in conjunction with townhouse apartments, an entertainment complex, an indoor recreation center, and a convention center."

The development plans summarized in the above quotation have been received with mixed feelings. Much of what has been suggested holds considerable promise. Many people feel, however, that a development like that described could significantly hamper attempts to redevelop and promote downtown Muskegon. If done properly, the development of Pigeon Hill will, in fact, complement the revitalization of Muskegon's entire lakefront, including the City's Central Business District. Limited City resources might, however, modify the rather grandiose development scheme described above in favor of a more realistic approach.

5. Pigeon Hill (cont.)

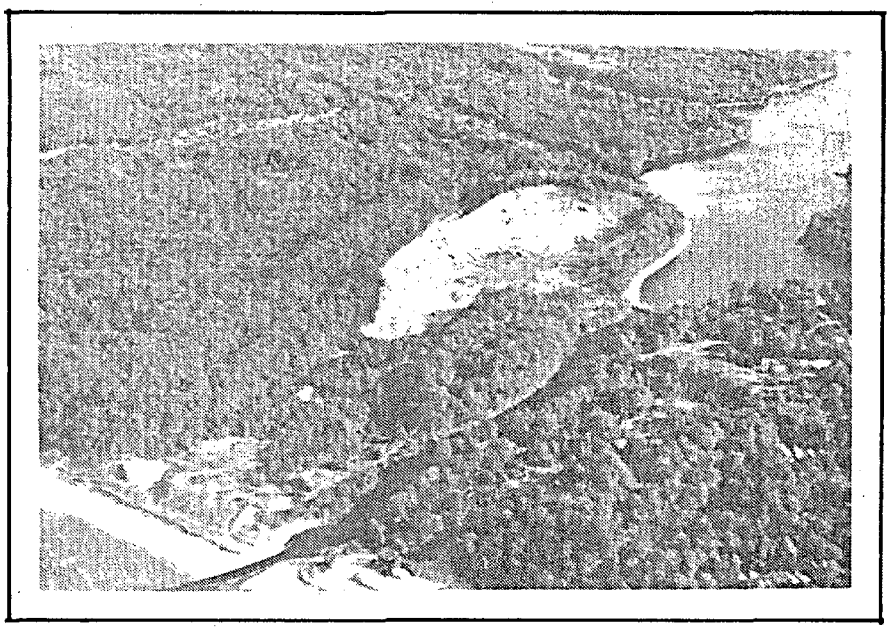
D. MANAGEMENT NEEDS:

The West Michigan Shoreline Regional Development Commission proposes a fresh look at the Pigeon Hill site. The City of Muskegon and the Region 14 Commission will assess present plans, suggest appropriate alternatives, re-evaluate economic and environmental impacts, and supply a detailed site plan for the Pigeon Hill area to be used in the implementation of a Muskegon Lake total development strategy. The City of Muskegon and the Region 14 Commission will undertake this planning responsibility during their upcoming 1978-79 fiscal year.

E. APC STATUS:

The Pigeon Hill site was recognized as an important APC from the very beginning. The Region 14 Commission assigned the area High Regional Priority. This priority designation is expected to remain High throughout the planning and implementation of development strategies for Muskegon's lakefront.

6. SWETT PROPERTY



Photograph III-10

Aerial View of the Swett Property
in the City of Norton Shores

RECREATION AREA OF PARTICULAR CONCERN

6. Swett Property

A. LOCATION: City of Norton Shores, Muskegon County, T9N-R17W Section 14.

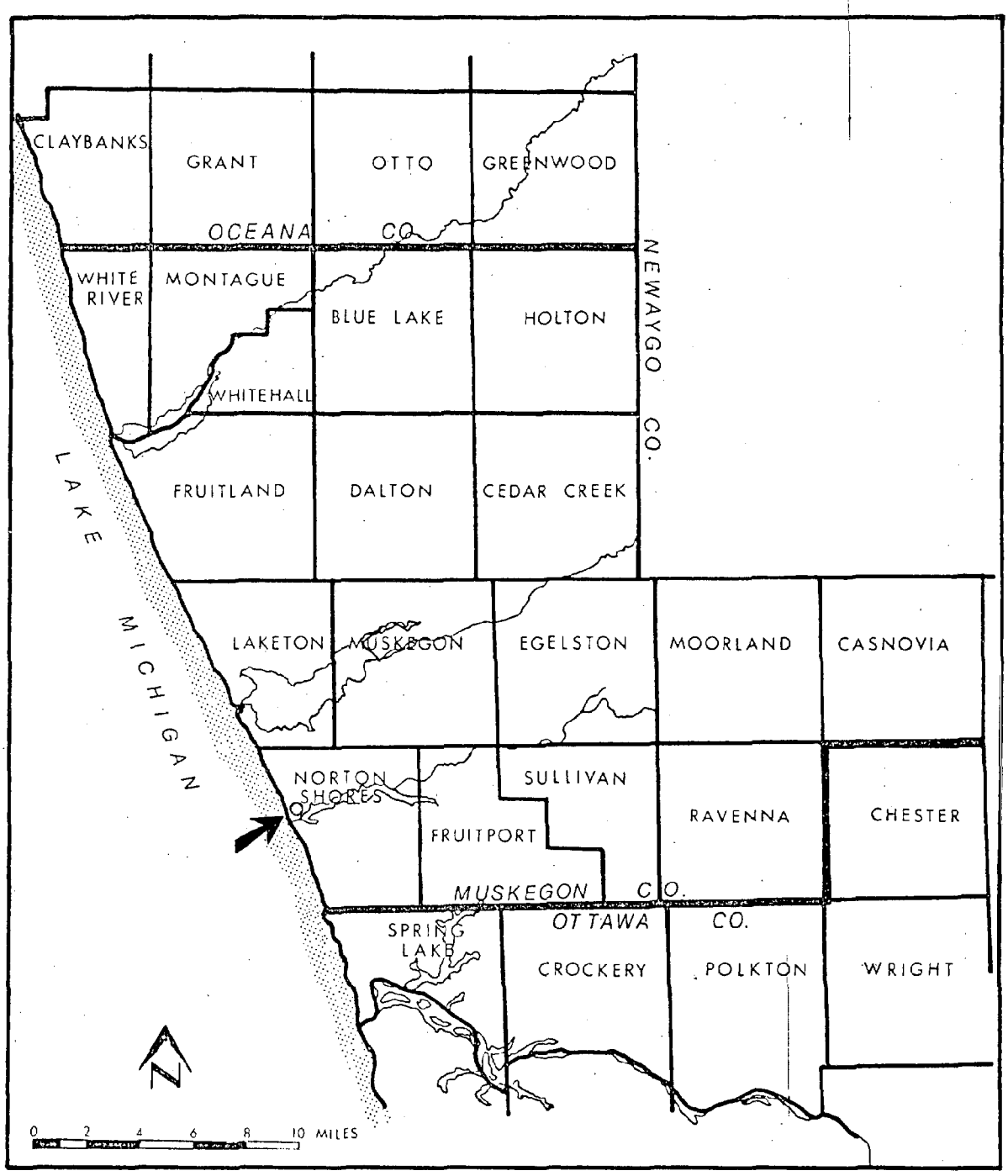


Figure III-12
General Location - Swett Property

6. Swett Property (cont.)

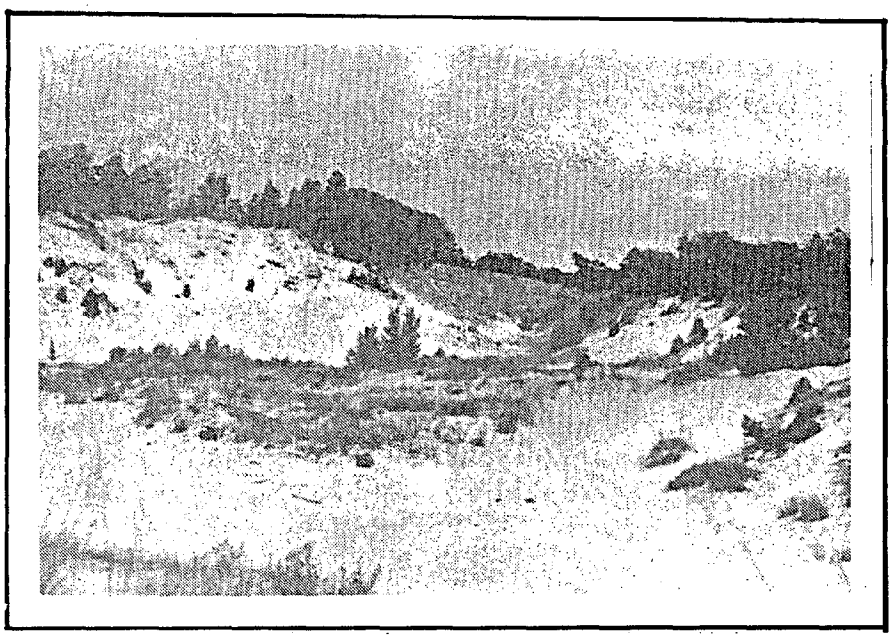
B. DESCRIPTION:

The area of land referred to as the Swett Property consists of 48 acres and is located north of Mona Lake Channel with approximately 600 ft. frontage on Mona Lake and 1,100 ft. on Lake Michigan. The easternmost portion of this land has been extensively mined for sand. The remaining area, approximately 33 acres, is heavily wooded and primarily undisturbed except for the entrance roads, two outbuildings, and an old residence.

The site currently borders an active sand mining area of approximately 36 acres, which is owned and operated by Textron, Inc. The only other adjacent parcel is owned by the Mona Shores School District and consists of 92 acres with 2,800 feet of Lake Michigan frontage. Within the same vicinity is a 10 acre parcel referred to as Whitey's Woods. (The school district land and Whitey's Woods are each recognized by the WMSRDC as Recreational Areas of Particular Concern). Just across the Mona Lake Channel is a large parcel owned by the Maranatha Bible and Missionary Conference.

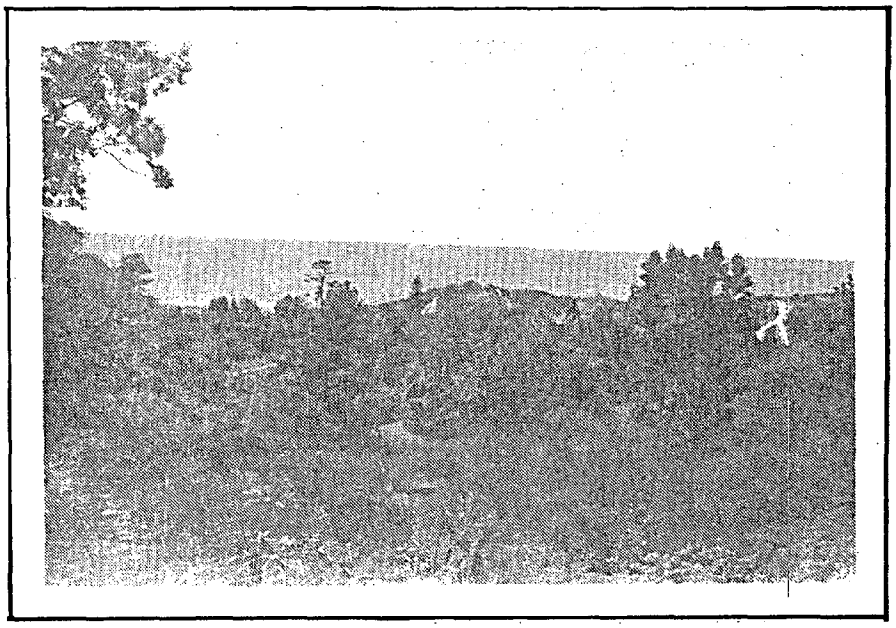
Photograph III-11 shows much of the disturbed area as seen at the site. The dune ridge in the background is still actively mined by Campbell, Wyant and Cannon Foundry Company, a subsidiary of Textron, Inc. Photograph III-12 shows the relatively undisturbed areas still remaining at this site. Figure III-13 describes the area's general setting and ownership pattern.

6. Swett Property (cont.)



Photograph III-11

Scene as viewed midway into Swett Property looking east in the direction toward Lake Harbor Road showing the extent of past and present sand mining activity.



Photograph III-12

Scene as viewed looking west showing extensive natural area and Lake Michigan in background.

6. Swett Property (cont.)

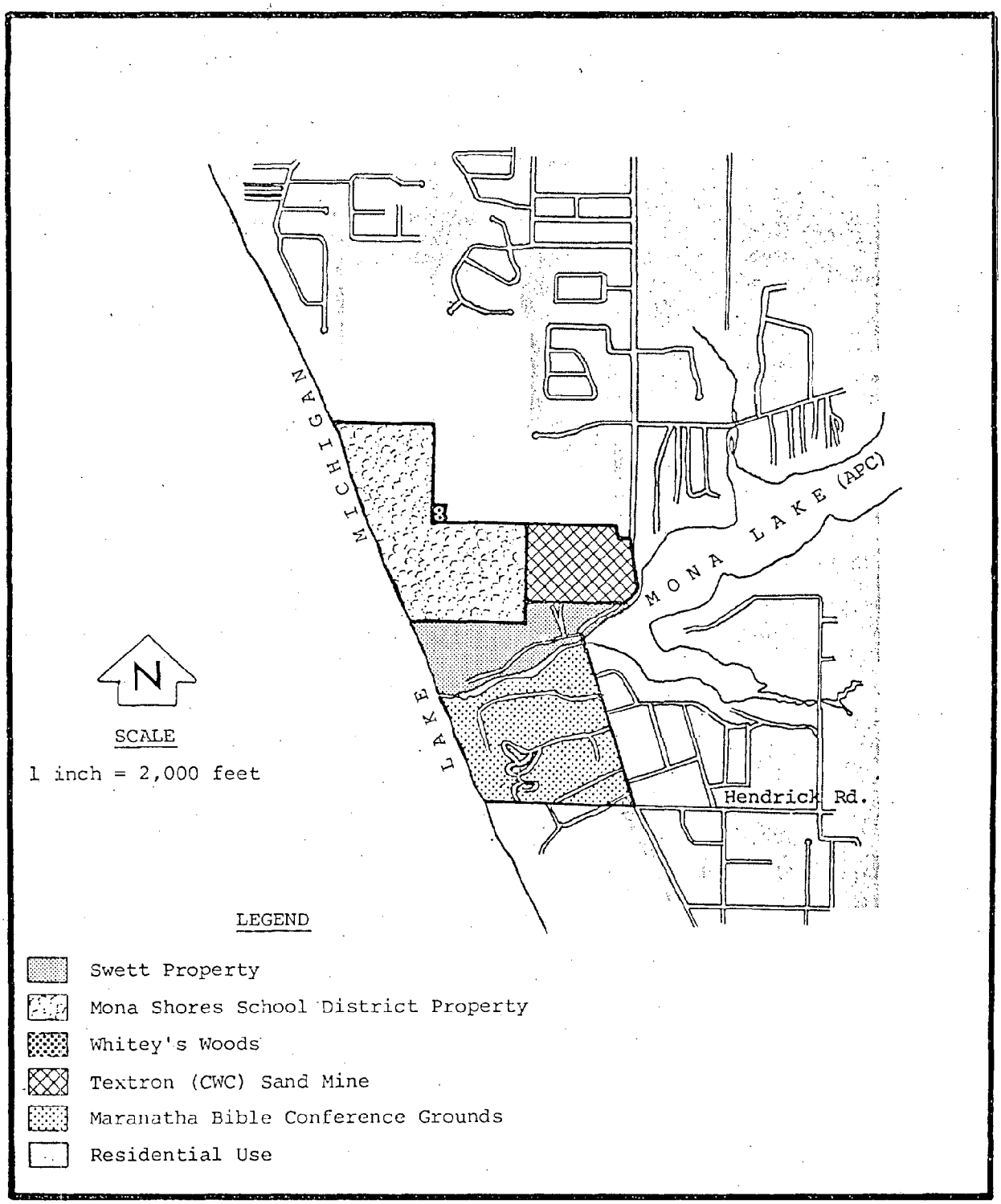


Figure III-13

Site Description - Swett Property

6. Swett Property (cont.)

C. MAJOR CONCERNS:

The City of Norton Shores has worked for many years to purchase the Swett Property so as to provide recreational access to Lake Michigan, Mona Lake, and Mona Lake Channel. The City of Norton Shores has applied for Land and Water Conservation Funds offered by the Michigan Department of Natural Resources. It appears that the DNR will provide funds to purchase this property on a 50-50 match basis. The property has been valued at approximately $300,000. The City will apparently offer capital improvement funds as its 50% share of the total purchase.

The Swett Property has been recognized as an area of particular concern because it holds tremendous opportunities for recreational use. Acquisition of the Swett Property would give the City its only local access to Lake Michigan, even though Norton Shores borders approximately seven miles of Lake Michigan shoreline. This site is a key element in the City's overall development strategy. The area's eventual use and subsequent management is a major concern which warrants prudent and careful planning. Other concerns center upon possible conflicts from adjacent land uses and improved access.

D. MANAGEMENT NEEDS:

In addition to the funds needed for acquisition, the City of Norton Shores has applied and is expected to receive 1979 CZM Planning Funds as being administered by Michigan's Coastal Zone Management Program. These funds are expected to total $35,000 with $7,000 being supplied as match by the City. These funds are to be used to plan the development of this site once it is acquired by Norton Shores.

The City of Norton Shores has no immediate long range plans for the Swett Property other than to provide public access. The use of Water and Conservation funds in acquiring the site places certain restrictions on how it might be developed. The City will use its CZM money to prepare a total site plan which will describe anticipated relationships to adjacent lands including the Mona Shores School District property, "Whitey's Woods," and Textron's current mining site. The City's planning efforts will more

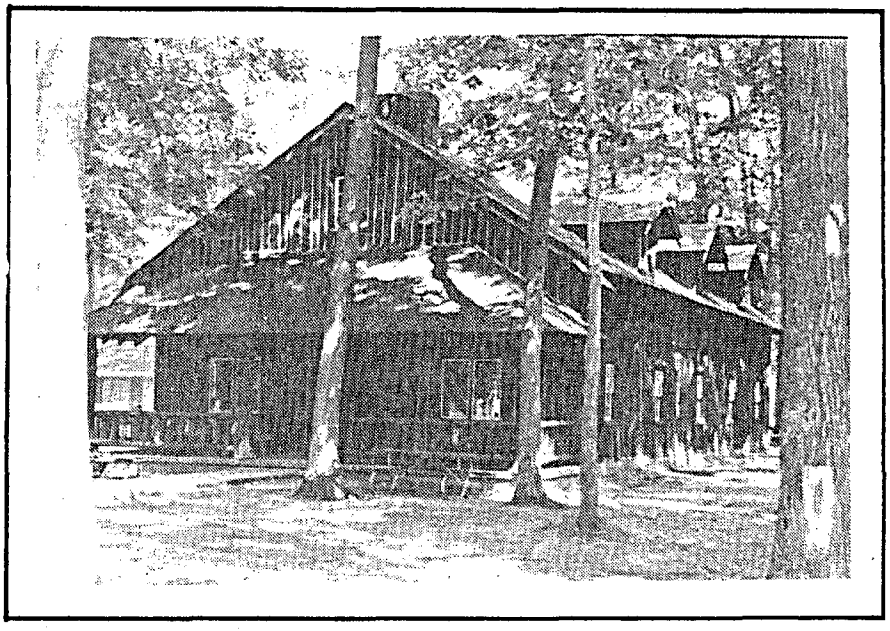
6. Swett Property (cont.)

than likely concentrate on providing access to the site with particular attention given the improvement of Lake Harbor Bridge and its practical alternatives.

E. APC STATUS:

The Swett Property was recognized by the WMSRDC as a Medium Priority APC in August 1976. Continuous efforts by the City of Norton Shores directed at purchasing this property has stimulated a great deal of interest among citizens throughout Muskegon County. The development of this site and adjacent lands could have very significant impacts upon the entire regional community. Regional priorities have therefore shifted into high gear in support of Norton Shores efforts.

7. PIONEER COUNTY PARK



Photograph III-13
Pioneer Park Lodge

RECREATION AREA OF PARTICULAR CONCERN

7. Pioneer County Park

A. LOCATION: Laketon Township, Muskegon County, T10N-R17W-Section 6.

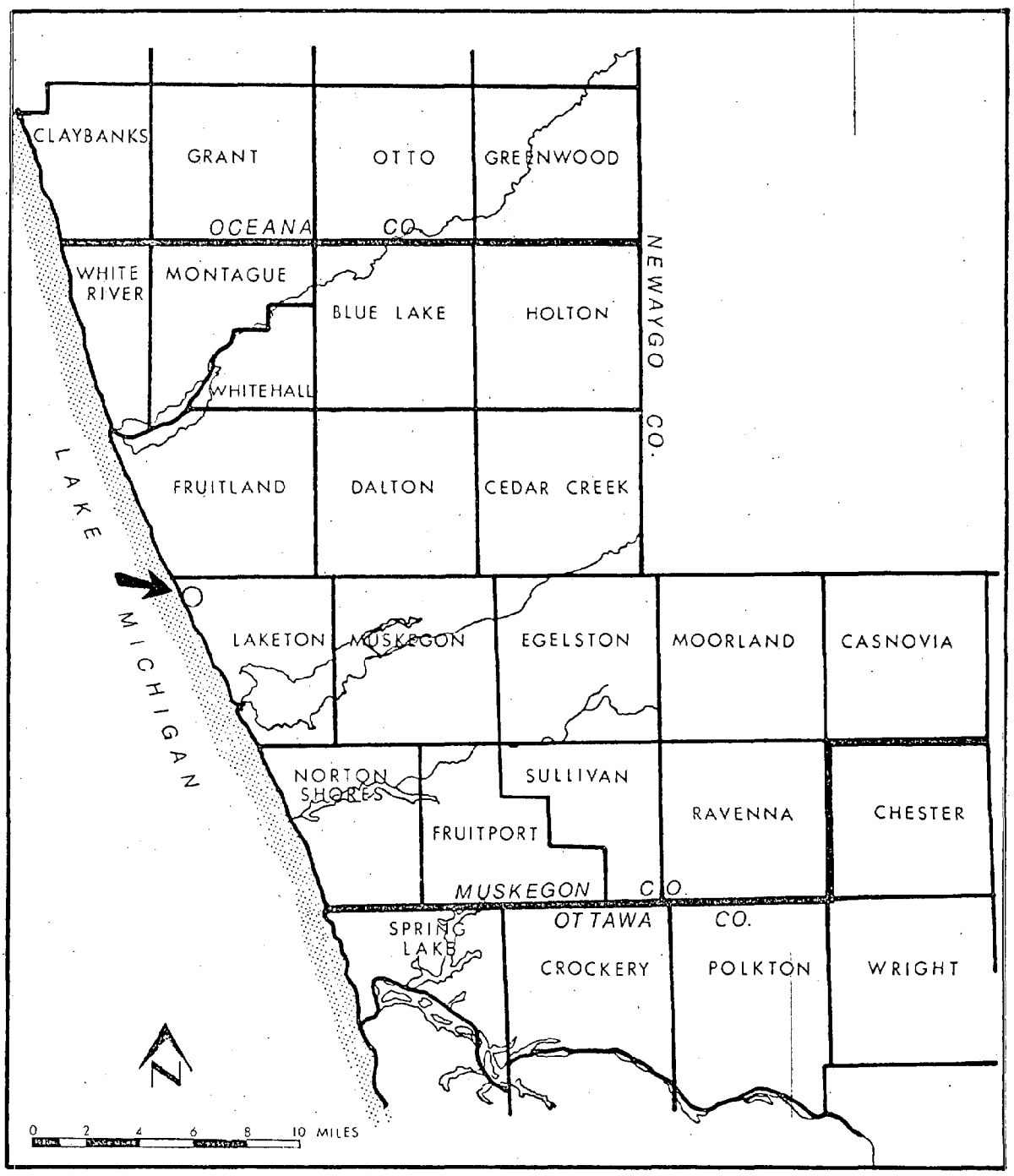


Figure III-14
General Location Pioneer County Park

7. Pioneer County Park (cont.)

B. DESCRIPTION:

Muskegon County's Pioneer Park consists of 145 acres and has approximately 2,200 feet frontage on Lake Michigan. The Park is heavily wooded, grass covered, with blacktopped access road and parking lots. The park has been developed for multi-purpose recreation facilities including concession stands, playground, picnic area, 302-trailer and tent campsites (with electricity), tennis courts, baseball diamond, etc. The entire park is surrounded primarily by vacant land with several homes concentrated along Lake Michigan and Scenic Drive. Figure III-15 shows the location of various park facilities.

C. MAJOR CONCERNS:

The Pioneer Park has proven to be a valuable resource for Muskegon County. It is an attractive park located in close proximity to Muskegon's major population centers. The Park is open and used all year round. It experiences heavy use during the summer months and is at times overcrowded. Park expansion is a major concern.

A secondary concern associated with the park stems from the shoreline's general erosion problems. The Michigan Department of Natural Resources has designated most of Laketon Township Lake Michigan shoreline as a "High Risk Erosion Area." Although recreational use seems appropriate for such areas, erosion problems do at times concern park users and administrators. Pioneer Park, together with other owned public lands in this same general vicinity, has been considered as a possible location for testing innovative erosion control structures. Pioneer Park is grouped with these other public lands as a composite APC - High Risk Erosion Area, which will be discussed later in this chapter.

Photograph III-14 will give you some idea as to the severity of erosion along Pioneer Park.

D. MANAGEMENT NEEDS:

The Muskegon County Metropolitan Planning Commission has just recently prepared a Muskegon County Recreation Plan. This plan identifies Pioneer

7. Pioneer County Park (cont.)

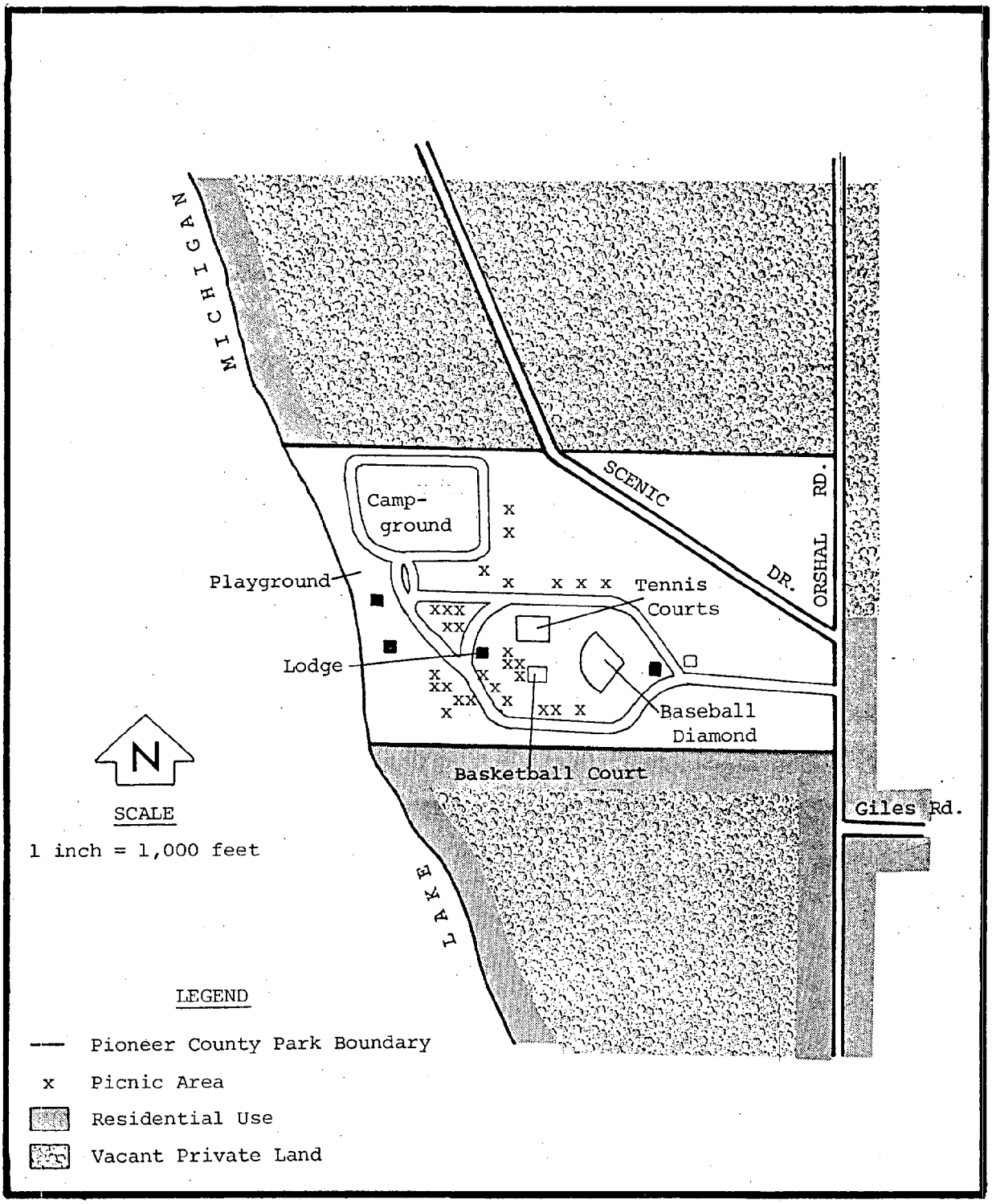


Figure III-15
Site Description
Pioneer County Park

7. Pioneer County Park (cont.)

Photograph III-14
Shoreline Erosion at Pioneer County Park

7. Pioneer County Park (cont.)

Park as a Regional Park, a park which serves multi-governmental units. The plan establishes several short-term objectives to be met by the County within the next five years. The following is just one of the objectives listed:

> "Acquisition of acreage to further expand county regional park acreage. Emphasis will be given to acreage having lake or river frontage, adjacent to existing parks, or containing unique environmental features such as sand dunes."

Pioneer Park seems a likely candidate for expansion given its heavy use and its location along Lake Michigan. The Muskegon County Metropolitan Planning Commission has, in fact, indicated that it will prepare a Master Plan for Pioneer Park in 1979.

E. APC STATUS:

The Muskegon County Pioneer Park was recognized as a Recreation Area of Particular Concern in July 1976. This APC was viewed as an important resource. The Regional Commission did, however, assign it low priority simply because its present management seemed particularly appropriate. Since 1976, the Muskegon County Metropolitan Planning Commission has prepared the Recreation Plan referred to in the previous section. The Region 14 Commission supports the intentions outlined in the plan. Regional Priority will jump from Low to Medium in anticipation of the Muskegon County Metropolitan Planning Commission's Master Plan for Pioneer Park.

8. CEDAR POINT TOWNSHIP PARK

Treacherous Beach Access at Cedar Point Park

Photograph III-15

RECREATION AREA OF PARTICULAR CONCERN

8. Cedar Point Township Park

A. LOCATION: Golden Township, Oceana County, T15N-R18W-Section 4.

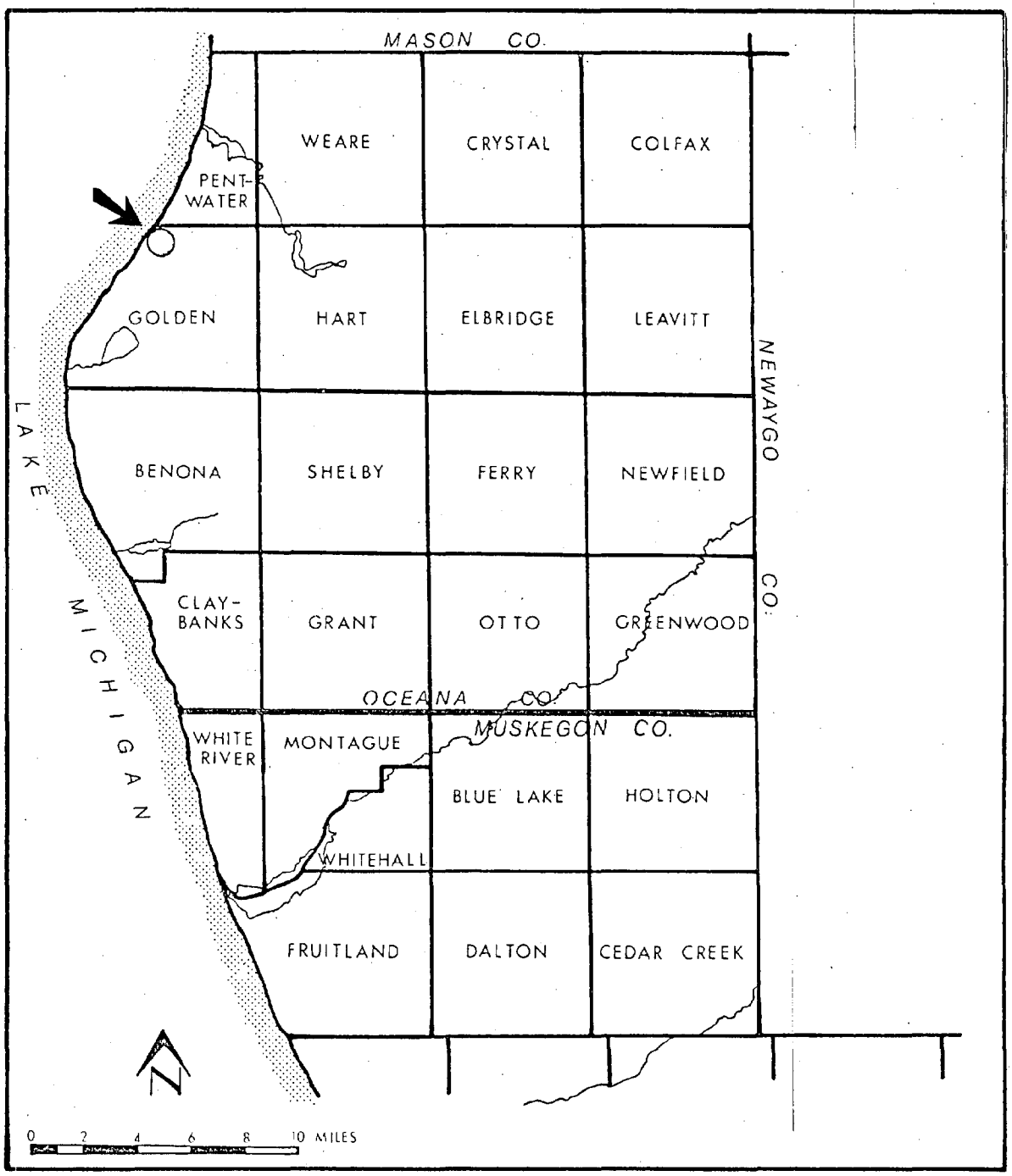


Figure III-16
General Location - Cedar Point Park

8. Cedar Point Township Park (cont.)

B. DESCRIPTION:

The Cedar Point Township Park is owned and maintained by Oceana County. The park is approximately fifteen acres in size. The area is wooded with good ground cover. There is no specific parking area and facilities are limited. The park has a picnic and swimming area, a handpump for water, and pit type toilets. The park is surrounded by privately owned land, sparsely developed for residential use. Figure III-17 provide a description of the park site.

C. MAJOR CONCERNS:

The importance of the Cedar Point Township Park is well recognized and articulated in the Recreation Plan for Oceana County, prepared by the WMSRDC in 1977. This park lies between two major recreation attractions: Silver-Lake State Park, and the Village of Pentwater - Pentwater Lake (Both areas are also recognized as APC's). As such, the land surrounding Cedar Point Park is subject to increasing development pressure. Park expansion is considered a major concern and is envisioned as a County objective.

D. MANAGEMENT NEEDS:

We need to more fully explore the possibility of expanding the park. A detailed comprehensive plan which outlines future park development would seem appropriate. An acquisition proposal, site plan, improved access, and improved facilities are each important planning elements.

E. APC STATUS:

The Cedar Point Township Park was originally assigned low Regional Priority. Interest in this park has continued ever since it was nominated as APC. Regional Priority has increased from low to medium. The West Michigan Shoreline Regional Development Commission seeks to provide whatever assistance Oceana County might need regarding the future development of its Cedar Point Park.

8. Cedar Point Township Park (cont.)

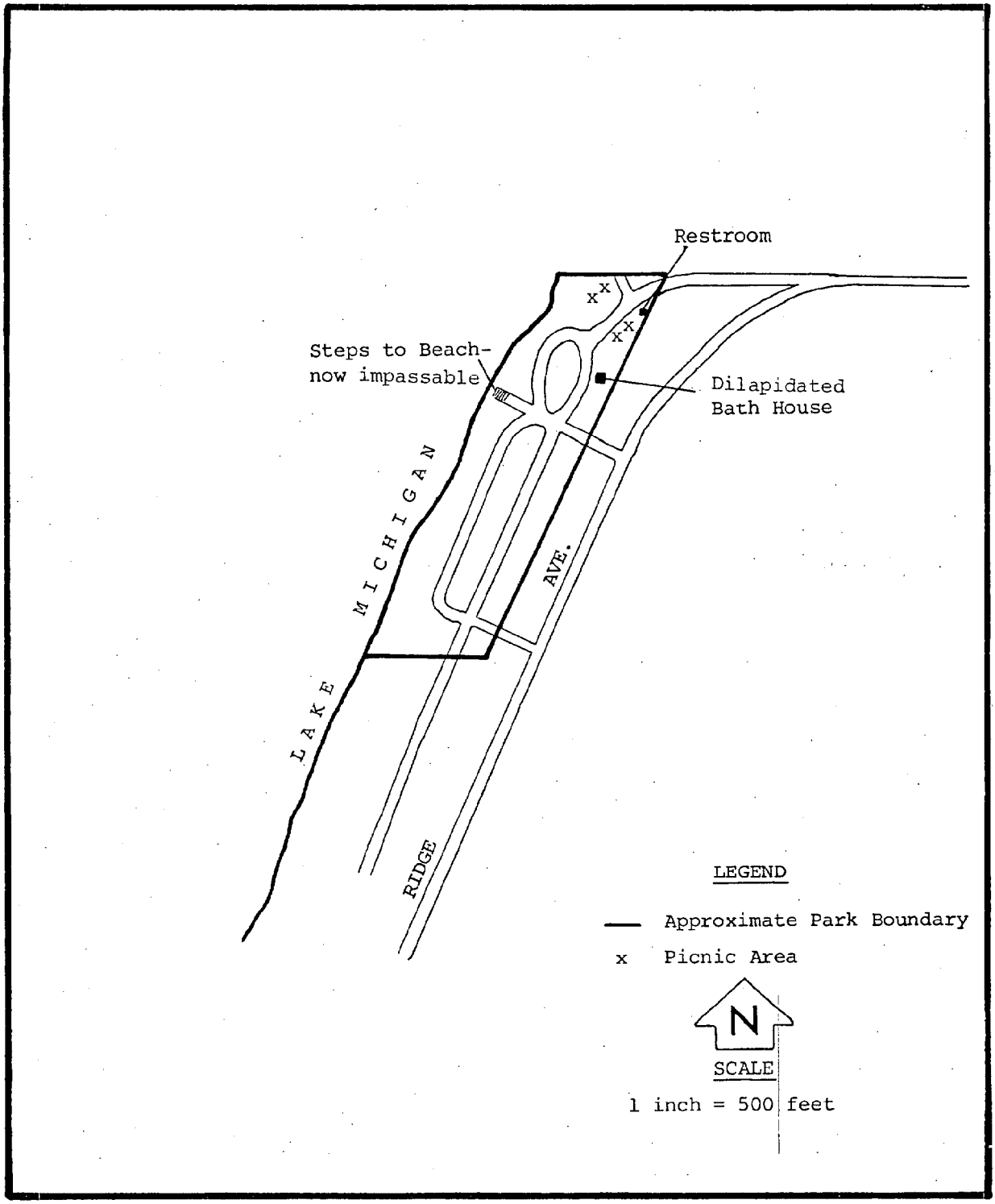
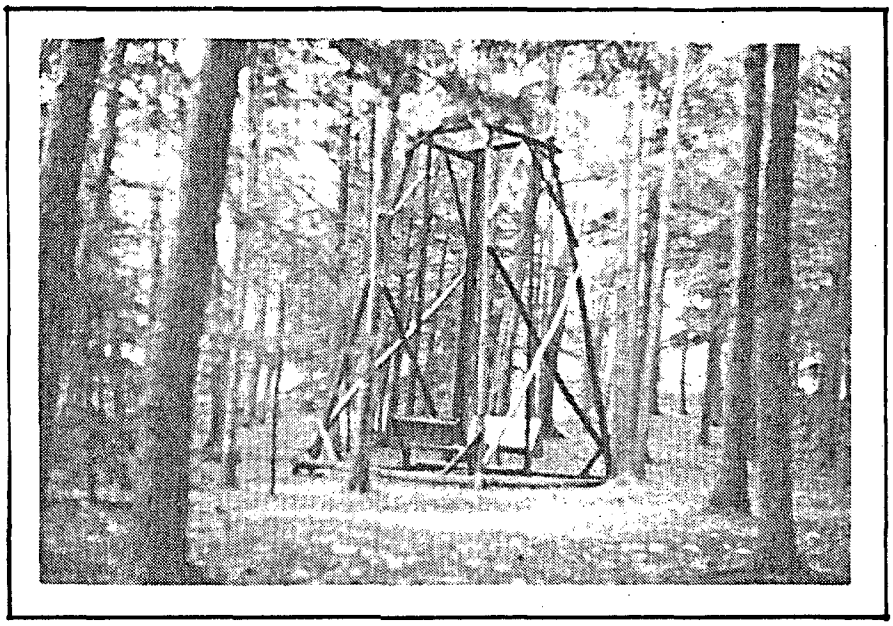


Figure III-17
Site Description
Cedar Point Park

9. WHITEY'S WOODS



Chair Swing in Privately Owned and Developed Picnic Area
Photograph III-16
RECREATION AREA OF PARTICULAR CONCERN

9. Whitey's Woods

A. LOCATION: City of Norton Shores, Muskegon County, T9N-R17W-Section 14.

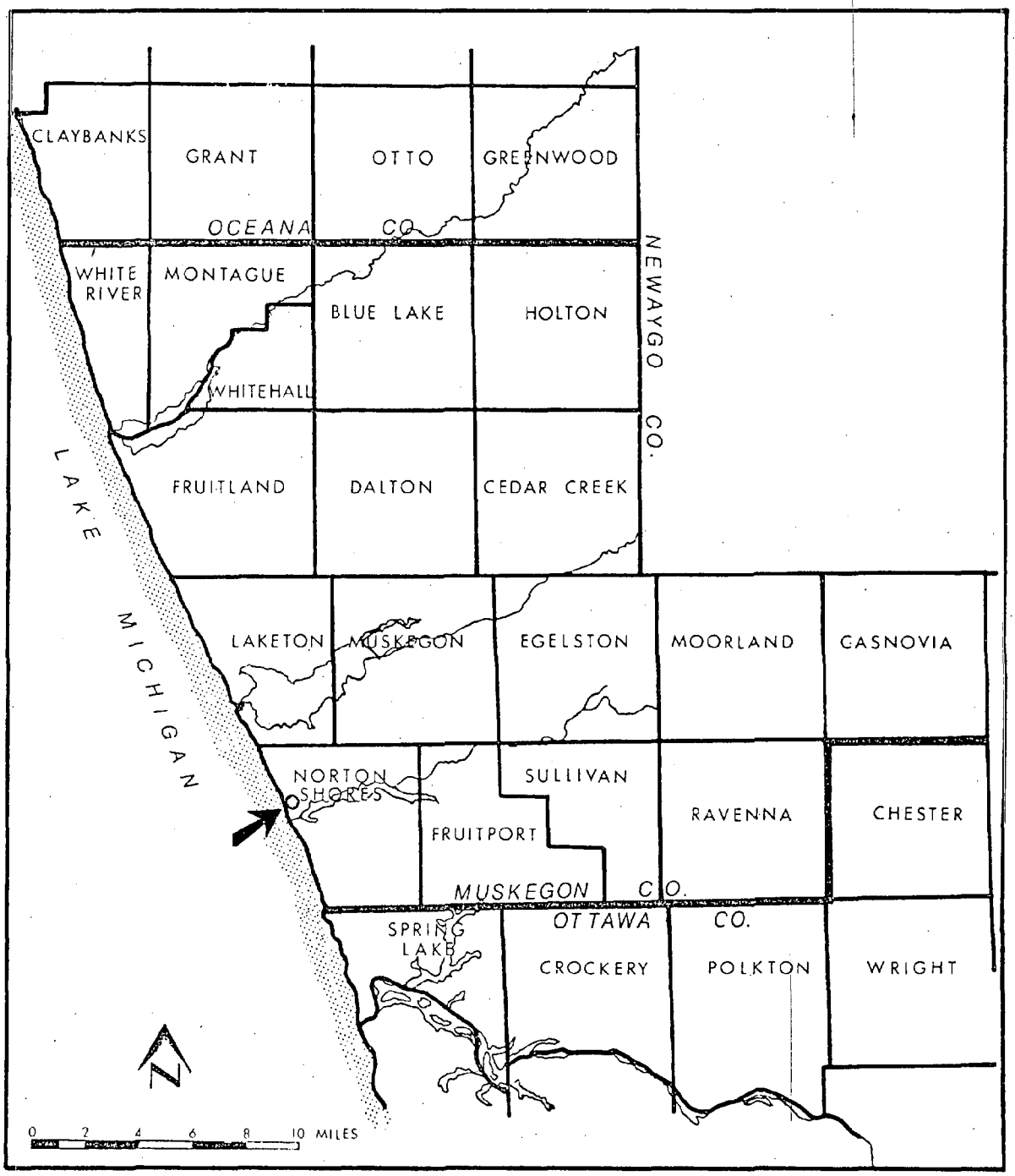


Figure III-18
General Location - Whitey's Woods

9. Whitey's Woods (cont.)

B. DESCRIPTION:

Whitey's Woods is a privately owned recreation area set aside by its owner for his own enjoyment as well as that of local residents. The entire parcel is 10 acres in size. The site is located in a very heavily wooded sand dune area with nature trails, picnic area, and two campsites. The Indian Tepee located on the site is a familiar landmark to local residents.

This APC, referred to as "Whitey's Woods," is entirely surrounded by undeveloped vacant land. It borders the Mona Shores School District property on its west and south side. It is in the same general vicinity as the Swett Property and the Textron Sand Mining site previously described. Figure III-19 graphically illustrates land ownership patterns and existing land use.

C. MAJOR CONCERNS:

Much of the City of Norton Shores is subject to development pressure. Vacant dune and shoreland areas are particularly susceptible to this pressure. This specific ten acre parcel is, however, completely surrounded by large undeveloped land holdings. Whitey's Woods is essentially landlocked with no formal access other than by established trails over privately owned property.

The acquisition of the Swett Property by the City of Norton Shores could have a direct effect upon much of the area to its north including Whitey's Woods. Improved access to the Swett Property might lead to improved access to both the Mona Shores School District land and Whitey's Woods. Much of this area might then be developed. The kind and extent of this development is, of course, a major concern.

D. MANAGEMENT NEEDS:

It is important that the City of Norton Shores take under consideration what might happen to area's like Whitey's Woods once the Swett Property is developed. It is for this reason that the City has chosen to look at this entire vicinity as part of its long range planning efforts. It must be decided early whether or not areas like Whitey's Woods should be preserved

9. Whitey's Woods (cont.)

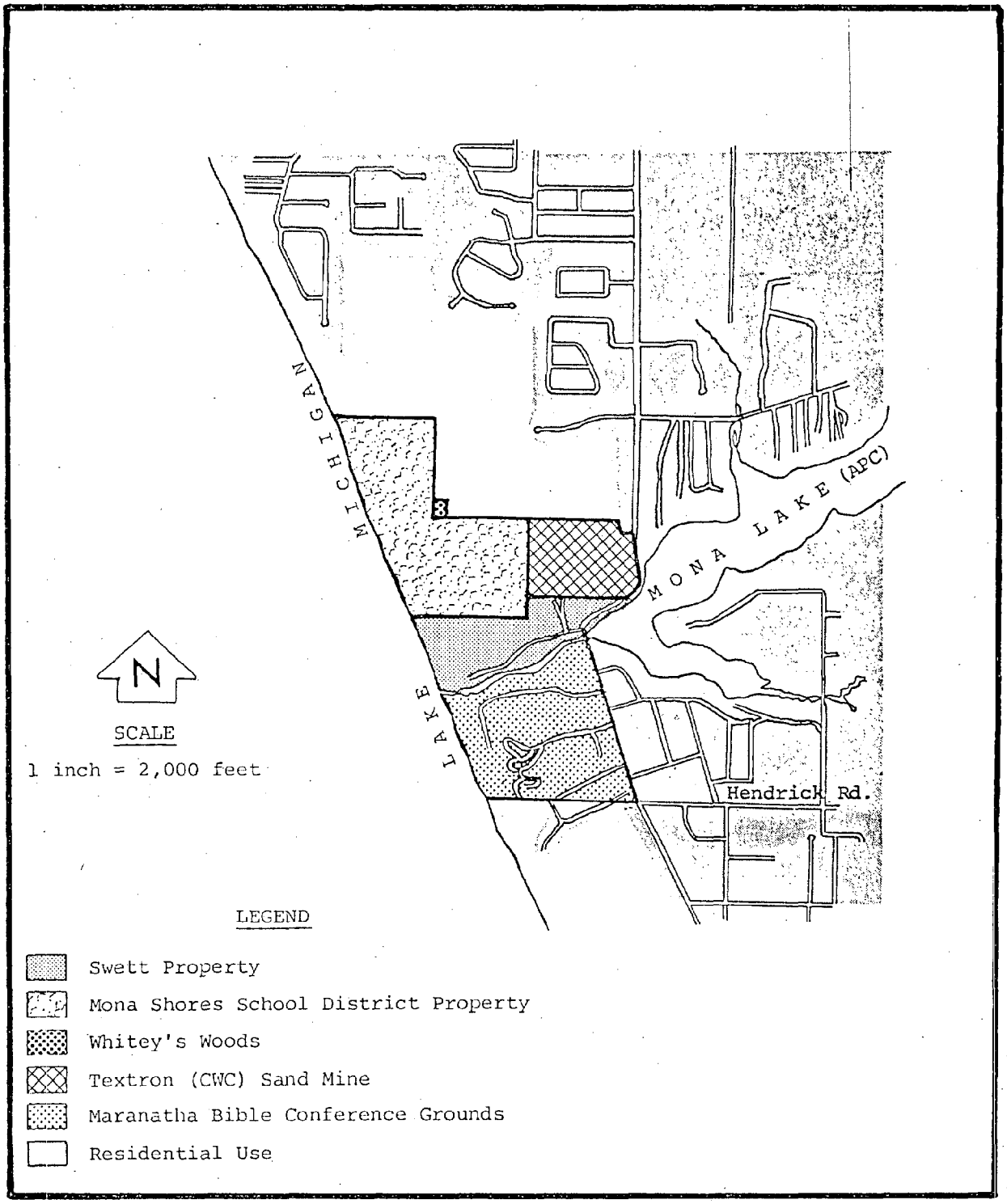


Figure III-19

Site Description - Whitey's Woods

9. Whitey's Woods (cont.)

for recreation use or developed for other more demanding purposes.

Barrie Greenbie and Leo Jakobson from the University of Wisconsin Department of Urban and Regional Planning, proposed several development concepts for the shoreland area between Muskegon Lake and Mona Lake. These concepts appeared in a document prepared for the City of Norton Shores and Muskegon County entitled, Norton Shores Pilot Area Plan, published September, 1969. This plan designates the areas surrounding the Swett Property as "Dunes Open Space and Limited Development Area." The following excerpt describes the intended meaning behind this designation.

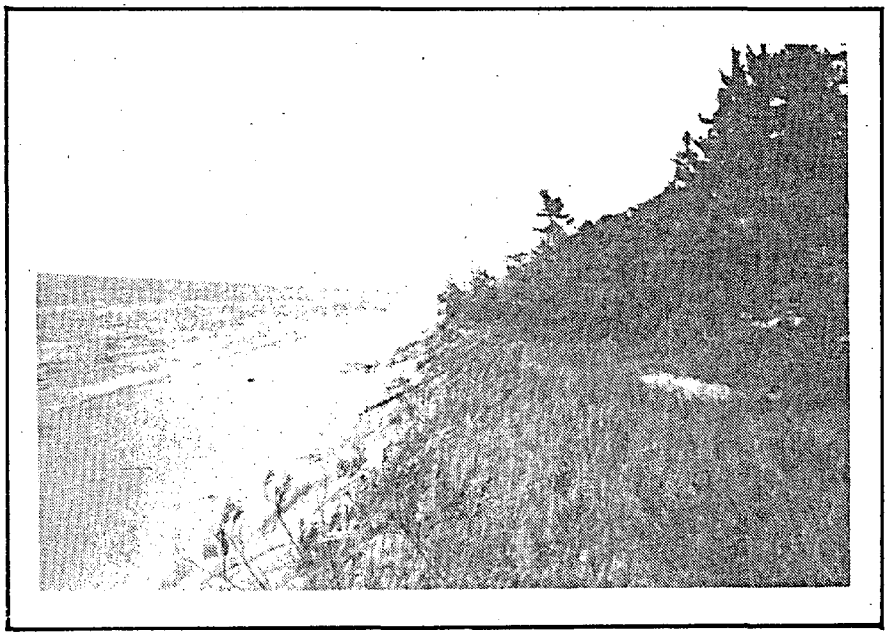
> "The Open Space and Limited Development Areas in public ownership generally should be kept for park purposes and open space. Those in private ownership may be developed under strict controls designed to preserve the natural plant cover."

Mr. Jakobson is now in the process of preparing a Master Plan for the City of Norton Shores. He and the City will review past proposals in light of the current situation. Whether the concepts described in the previously mentioned report remain valid has yet to be determined.

E. APC STATUS:

Whitey's Woods was originally assigned low Regional Priority simply because its current use seemed stable and appropriate. This area will be the subject of increased interest once the City of Norton Shores finally acquires the Swett Property. Regional Priority will move from Low to High in support of the City of Norton Shores and its proposed planning efforts.

10. CHEYENNE HILLS, FAWN PARK



Eroded Bluff in Cheyenne Hills and Fawn Park Vicinity
Photograph III-17
HIGH RISK EROSION AREA OF PARTICULAR CONCERN

10. Cheyenne Hills, Fawn Park

A. LOCATION: Benona Township, Oceana County T14N-R19W-Sections 13 & 24.

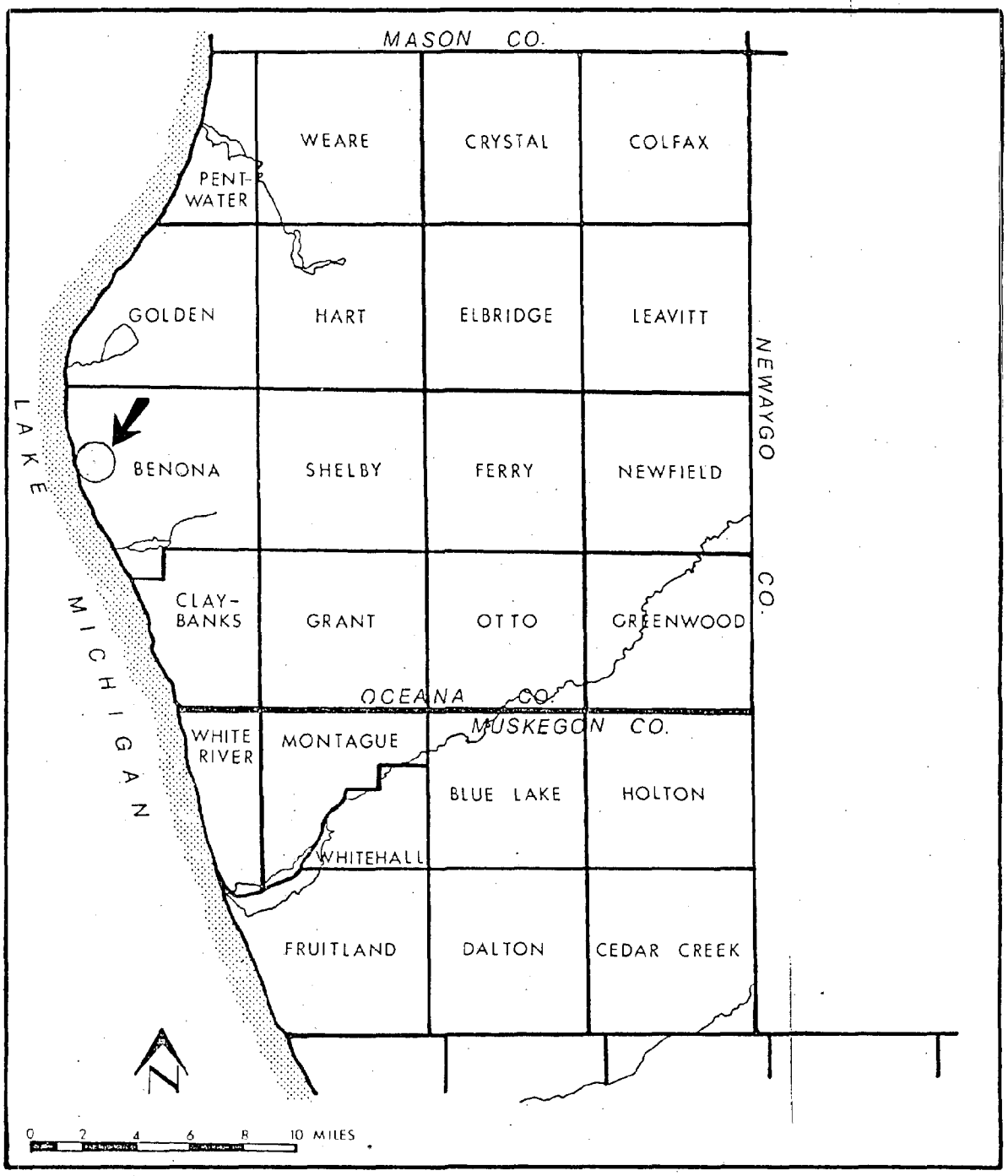


Figure III-20

General Location - Cheyenne Hills, Fawn Park

10. Cheyenne Hills, Fawn Park (cont.)

B. DESCRIPTION:

Cheyenne Hills and Fawn Park (the latter now is called Deerwood Subdivision) are two adjacent subdivisions along Lake Michigan, the first being north of the second. Both areas have been developed for residential use.

This shoreline area has been subjected to severe wind and wave erosion. The Michigan Department of Natural Resources has designated this area, along with most of Benona Township, as a High Risk Erosion Area. The DNR estimates that the bluff in this vicinity is receding on the average by as much as 7.7 feet per year (recession rates were calculated by comparing 1939 and 1974 aerial photographs). Erosion control structures have proven to have minimal effect upon the natural tendencies inflicted by pounding waves and blowing sand. The Cheyenne Hills and Fawn Park area is characterized by its high steep bluff and narrow beach. Figure III-21 examines the location of existing structures and their proximity to the eroding bluff.

C. MAJOR CONCERNS:

Concerns center upon the area's erosion problems. Structural controls need to be coordinated by local property owners in order to maximize their net effectiveness. Nonstructural management controls, such as building setbacks and restrictive construction standards, could be developed and enforced to help eliminate future hardships associated with erosion damage.

D. MANAGEMENT NEEDS:

It would appear that most property owners in this area are more or less satisfied with the current conditions. No one likes their beach eroded away, or their home or cottage threatened. But when forced to choose between staying where they are, or moving inland, most residents will remain.

Homes and cottages might be relocated but that will depend upon individual owners. The township could institute a program which would transfer development rights, in particularly hazardous areas, to locations

10. Cheyenne Hills, Fawn Park (cont.)

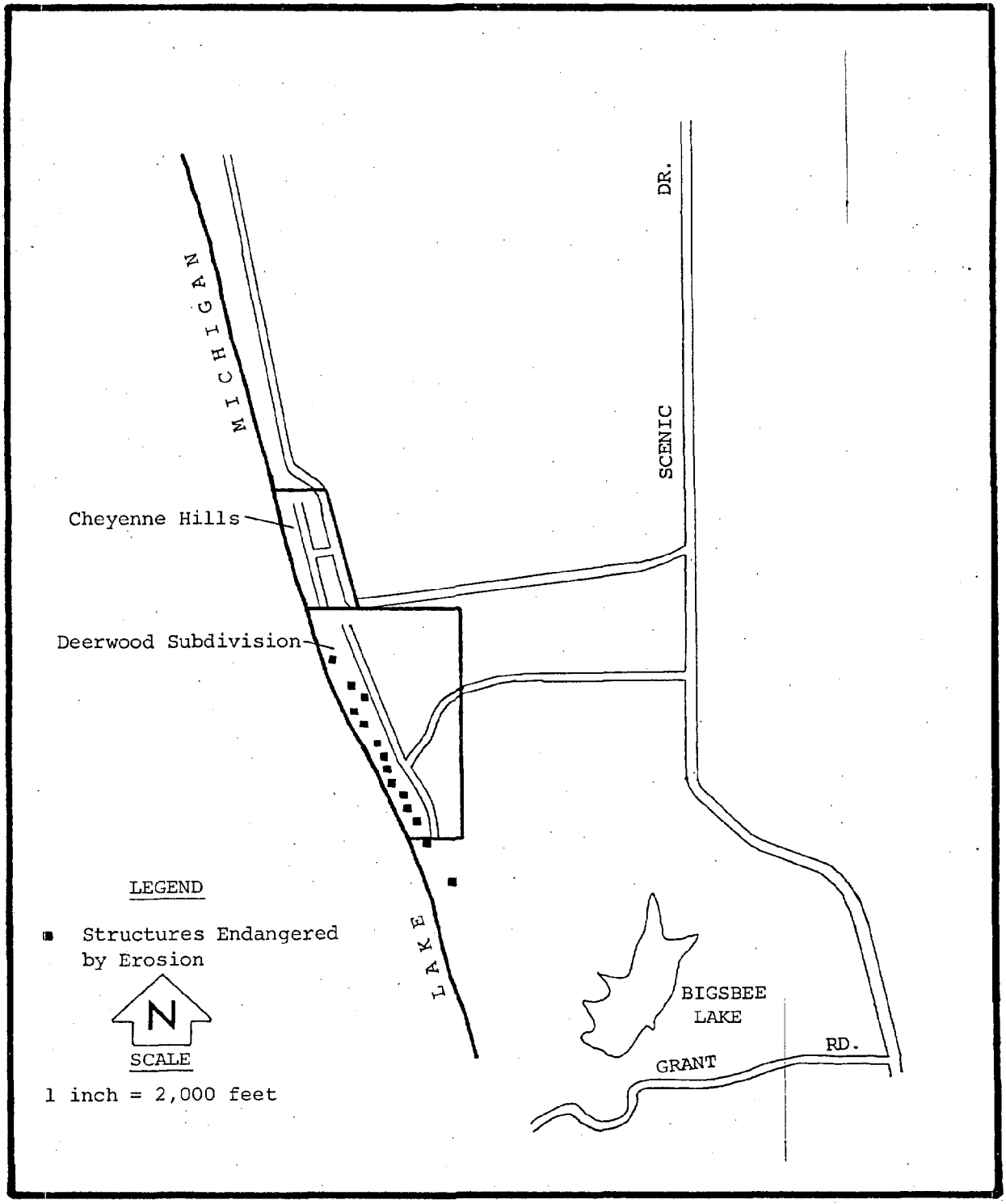


Figure III-21
Site Description
Cheyenne Hills, Fawn Park

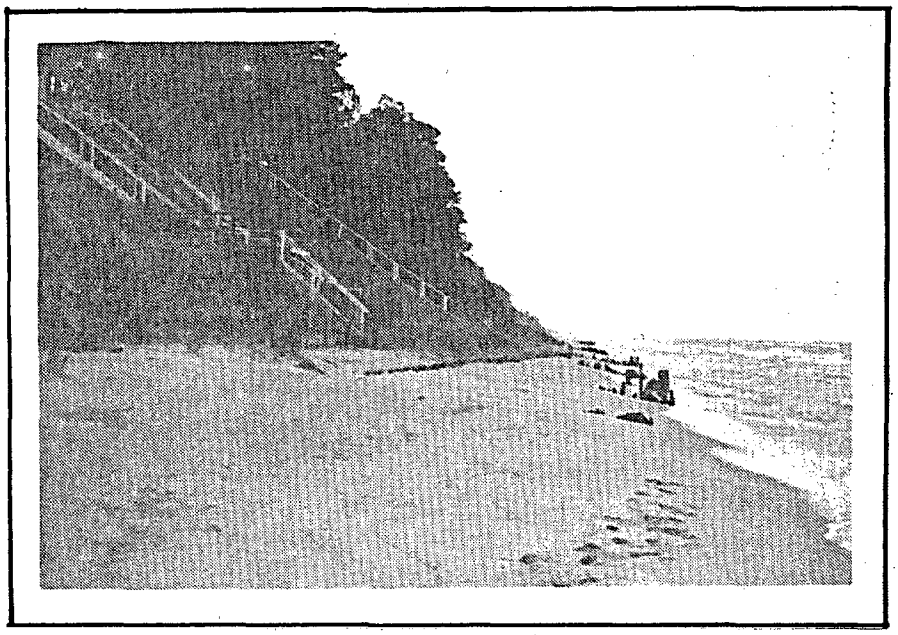
10. Cheyenne Hills, Fawn Park (cont.)

which are less dangerous, but that is unlikely. The township could acquire open space areas and preserve them for recreation, but that too, is highly unlikely. The home and cottage owners in this area might more easily coordinate their own erosion control systems to maximize the chances for their success.

E. APC STATUS:

The Cheyenne Hills, Fawn Park subdivisions were considered as High Risk Erosion Areas of Particular Concern in hopes that some assistance might eventually be given Benona Township and the affected property owners. This area was originally assigned low priority, reflecting the township's interest regarding nonstructural erosion control alternatives. Since this area was nominated, Lake Michigan levels have lowered, which has resulted in reduced erosional activity. We can be sure the Lake Michigan levels will rise again, but just when is uncertain. Property owners have lost the sense of urgency which at one time motivated considerable concern. Regional Priority will remain low until the community shows some interest in Region 14's planning assistance.

11. IDLEWOOD BEACH



The Idlewood Beach Bluff
Photograph III-18
HIGH RISK EROSION AREA OF PARTICULAR CONCERN

11. Idlewood Beach

A. LOCATION: Park Township, Ottawa County T5N-R16W-Section 28.

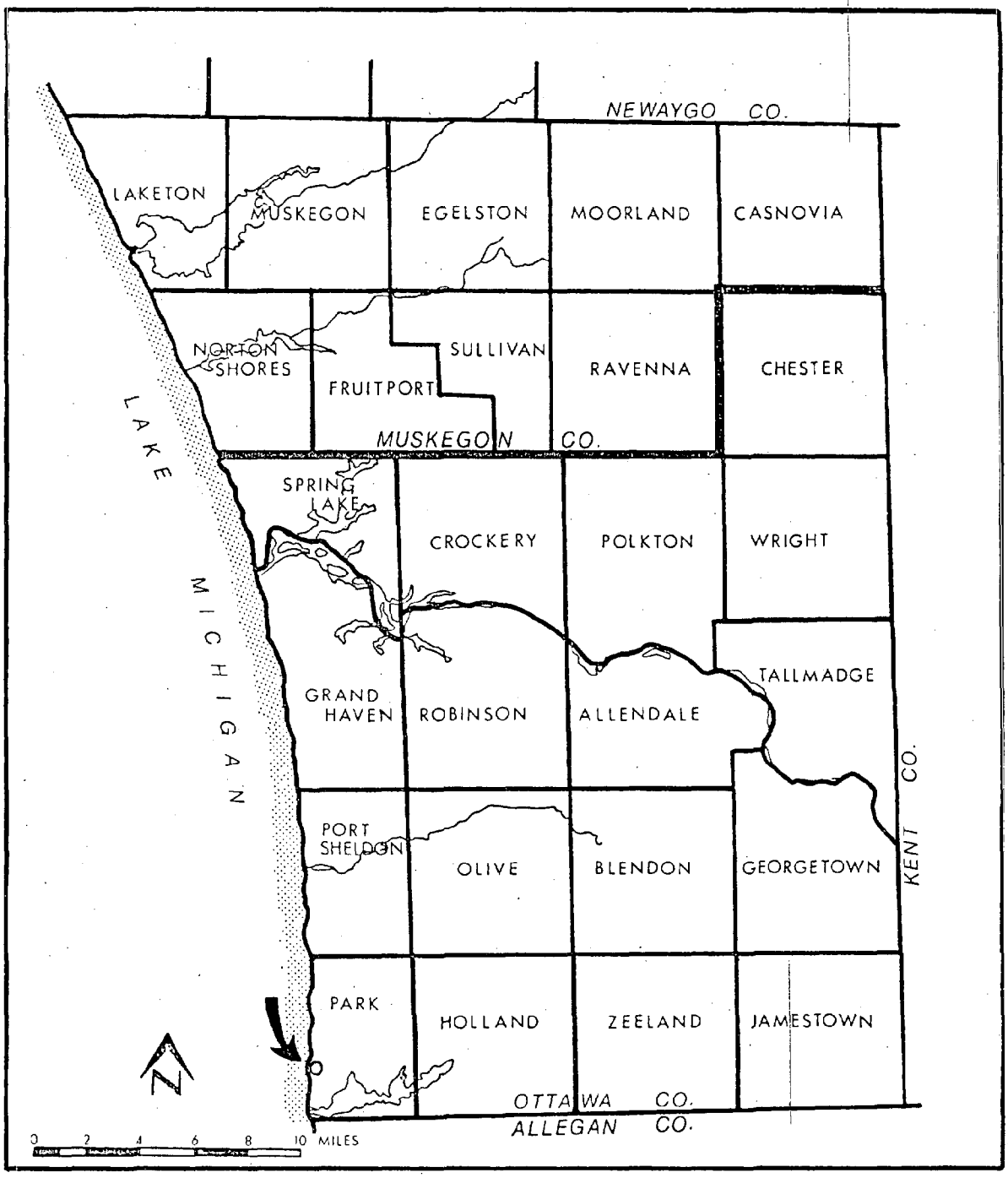


Figure III-22
General Location - Idlewood Beach

11. Idlewood Beach (cont.)

B. DESCRIPTION:

Idlewood Beach is yet another subdivision along Lake Michigan which is subject to excessive beach and foredune erosion. This particular stretch of lakefront properties is heavily developed for residential use.

The Michigan Department of Natural Resources has designated most of Park Township's shoreline as a High Risk Erosion Area. The DNR estimates that the bluff in the Idlewood area is receding on the average by as much as 4.5 feet per year (recession rates were calculated by comparing 1939 and 1974 aerial photographs). The use of structural erosion controls has provided temporary relief to those home and cottage owners which can afford such devices. Figure III-23 graphically describes the existing situation.

C. MAJOR CONCERNS:

Erosion problems are, of course, the major concern for the area. The use of structural erosion controls should be coordinated by local property owners so that one such owner is not adversely affected by his neighbor's attempts to combat erosional forces. Nonstructural management controls, which emphasize appropriate building setbacks and institute workable performance standards for new construction, should be developed and enforced so as to minimize future problems associated with shoreline erosion.

D. MANAGEMENT NEEDS:

Lowered Lake Michigan levels have been encouraging to local shoreline residents. These residents are pretty much satisfied with current conditions. However, we know from past experience that the lake will eventually rise again and thus increase associated erosional problems.

For the time being, it seems appropriate that the local property owners consider consolidating their erosion control efforts in a unified and coordinated program. Looking at the long term, Park Township might investigate the use of innovative nonstructural management controls aimed at currently undeveloped shoreline areas to eliminate what could become a future erosion problem.

11. Idlewood Beach (cont.)

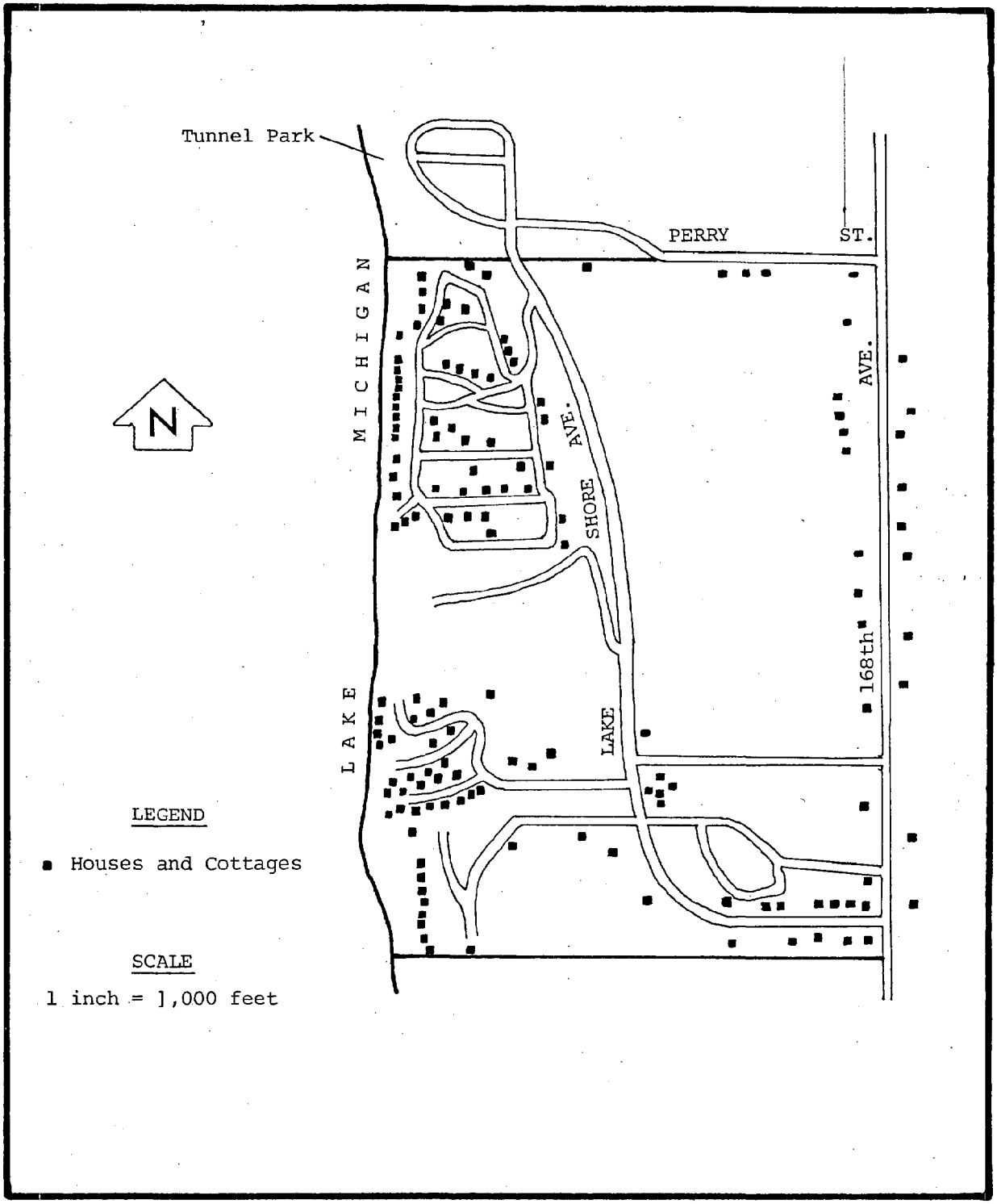


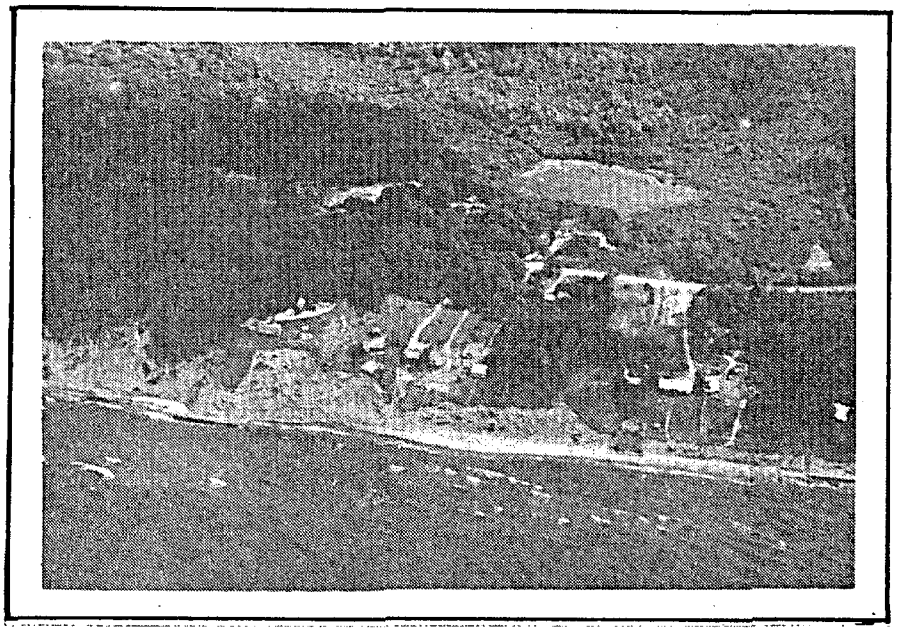
Figure III-23
Site Description
Idlewood Beach

11. Idlewood Beach (cont.)

E. APC STATUS:

The Idlewood Beach area was recognized as an APC simply because of its high shoreline recession rate. The Commission had hoped that such recognition might someday bring assistance to the Idlewood area. The Region 14 Commission, being a planning agency, is only able to help the Township regarding alternative nonstructural management techniques. Current residents and prospective property owners are, however, more interested in physically stopping shoreland erosion processes than in mitigating future damage by instituting stricter construction standards and building setbacks. The Region 14 Commission therefore assigned the Idlewood Beach APC Low Regional Priority. Regional Priority will probably remain Low unless stimulated by increased local interest.

12. POSTMA SUBDIVISION



Photograph III-19

HIGH RISK EROSION AREA OF PARTICULAR CONCERN

12. Postma Subdivision

A. LOCATION: Port Sheldon Township, Ottawa County T6N-R16W-Section 21.

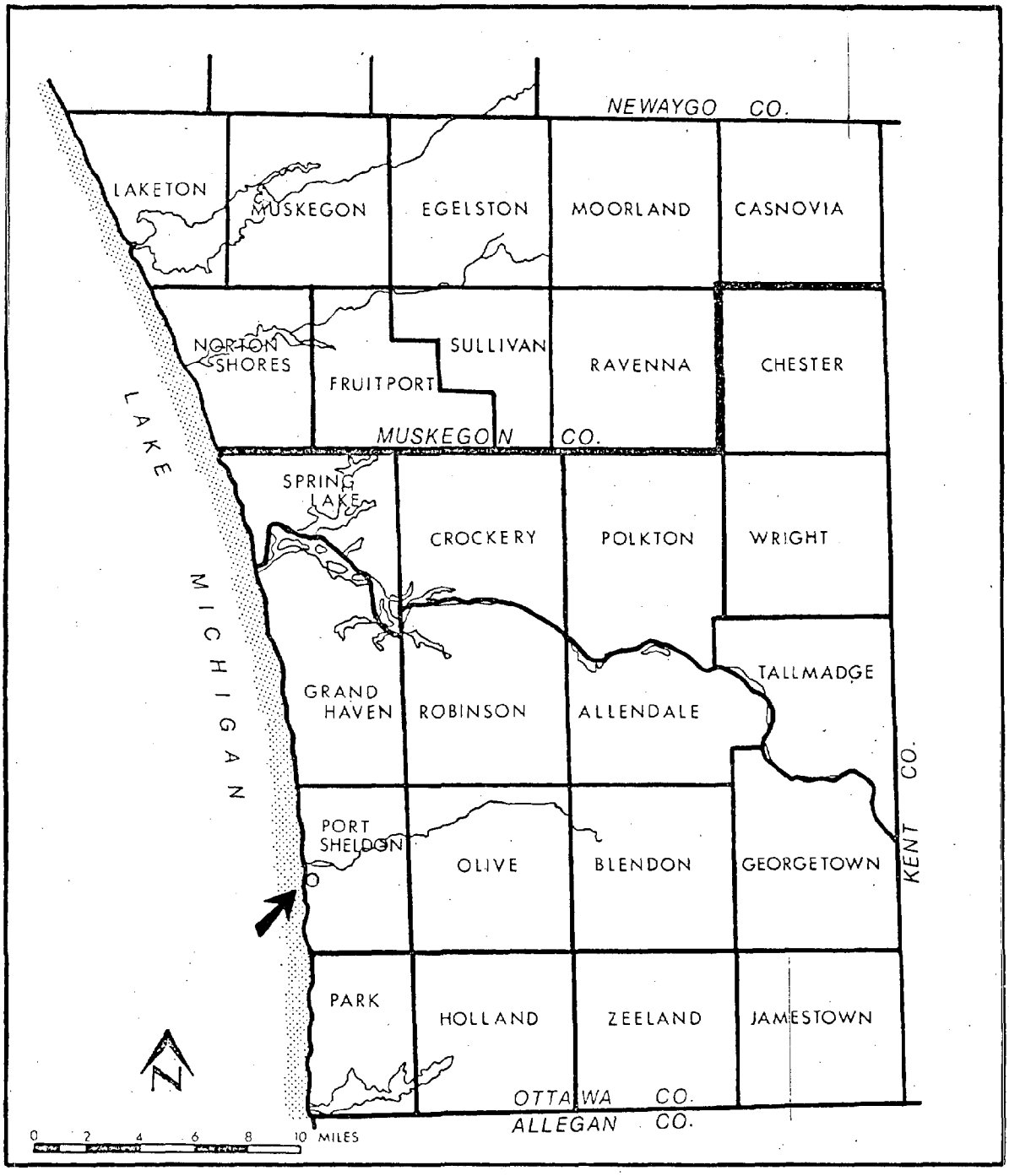


Figure III-24
General Location - Postma Subdivision

12. Postma Subdivision (cont.)

B. DESCRIPTION:

The Postma Subdivision, and areas to its immediate south, are subjected to excessive beach and foredune erosion. Most lakefront properties have already been developed for residential use.

The Michigan Department of Natural Resources has designated all of Port Sheldon Township's shoreline as a High Risk Erosion Area. The DNR estimates that the bluff in the Idlewood area is receding on the average by as much as 4.7 feet per year (recession rates were calculated by comparing 1939 and 1974 aerial photographs). Banks have experienced severe slumping due to wave attack. Erosion control structures are in constant need of repair. There are several homes and cottages threatened. Figure III-25 describes the area in question.

C. MAJOR CONCERNS:

Beach and dune erosion is the major concern for this APC. Erosion control structures are at present being constructed by property owners with little regard for implications elsewhere up or down the beach. The use of erosion controls should be coordinated between neighbors to increase their effectiveness and minimize adverse consequences. Nonstructural management techniques should be investigated.

D. MANAGEMENT NEEDS:

Lakefront residents in Postma Subdivision and along shoreline properties to the immediate south should perhaps consider a comprehensive erosion control program. The Township might want to investigate possible management alternatives like the institution of performance standards, setbacks, and the transfer of development rights for those areas currently vacant.

E. APC STATUS:

The Postma Subdivision and shoreline to its immediate south have been considered an APC because of their high erosion hazard. The Commission has assigned the area Low Regional Priority because of limited interest in nonstructural management techniques. Regional Priority will remain Low unless stimulated by increased local interest.

12. Postma Subdivision (cont.)

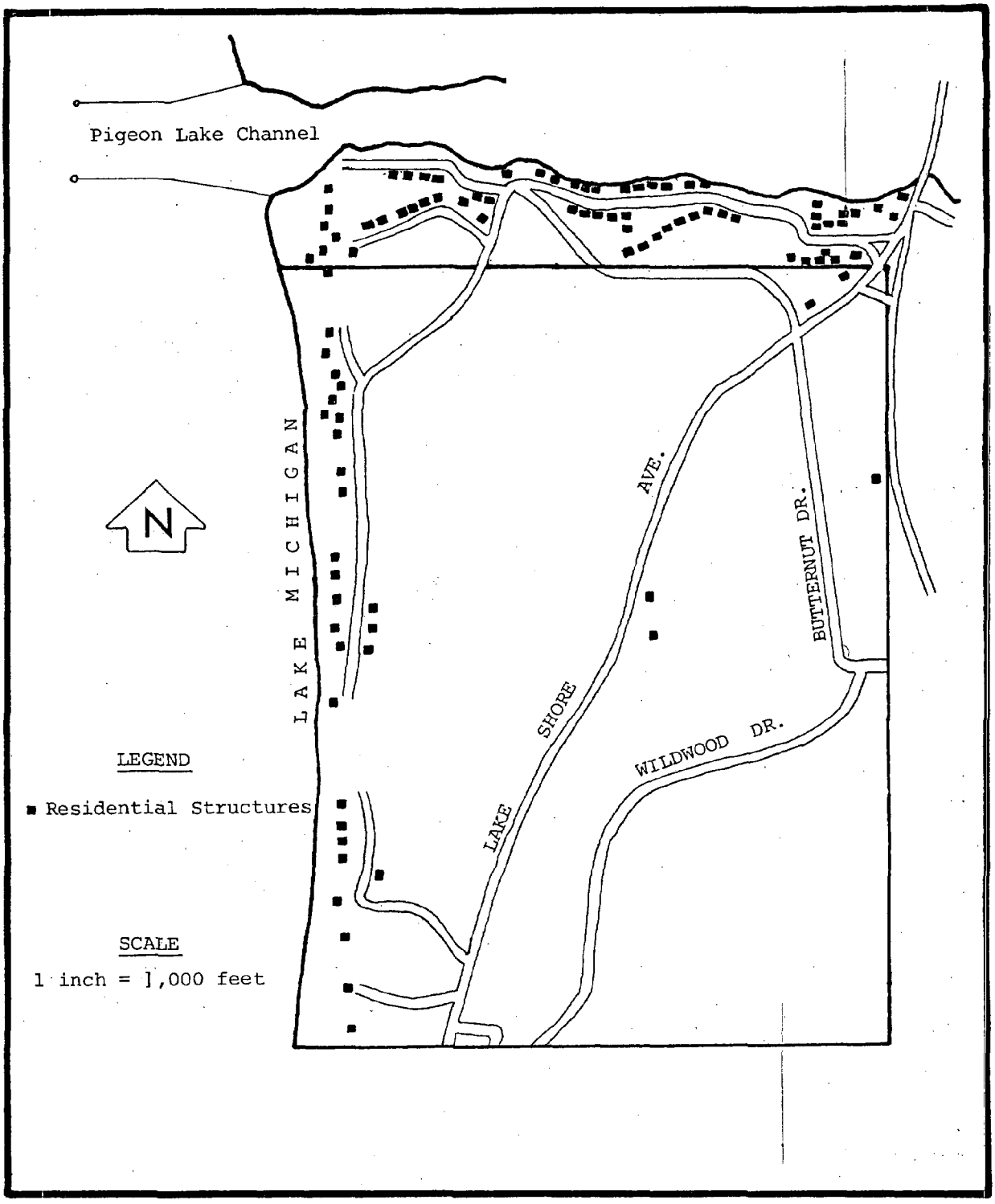
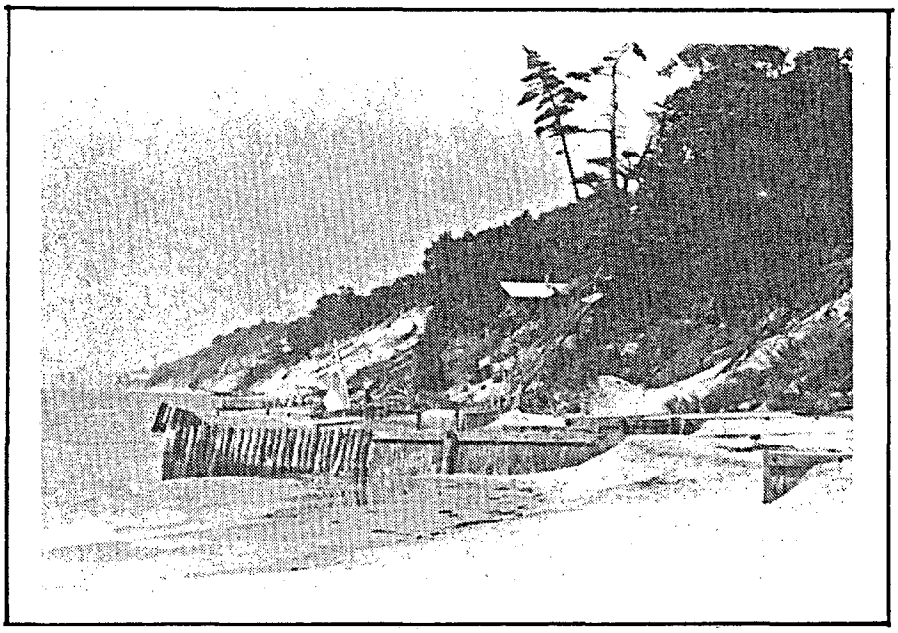


Figure III-25
Site Description
Postma Subdivision

13. GRAY DUNES SUBDIVISION



Photograph III-20
Shoreline as seen from the beach at Gray Dunes Subdivision

HIGH RISK EROSION AREA OF PARTICULAR CONCERN

13. Gray Dunes Subdivision

A. LOCATION: White River Township, Muskegon County T12N-R18W-Section 15.

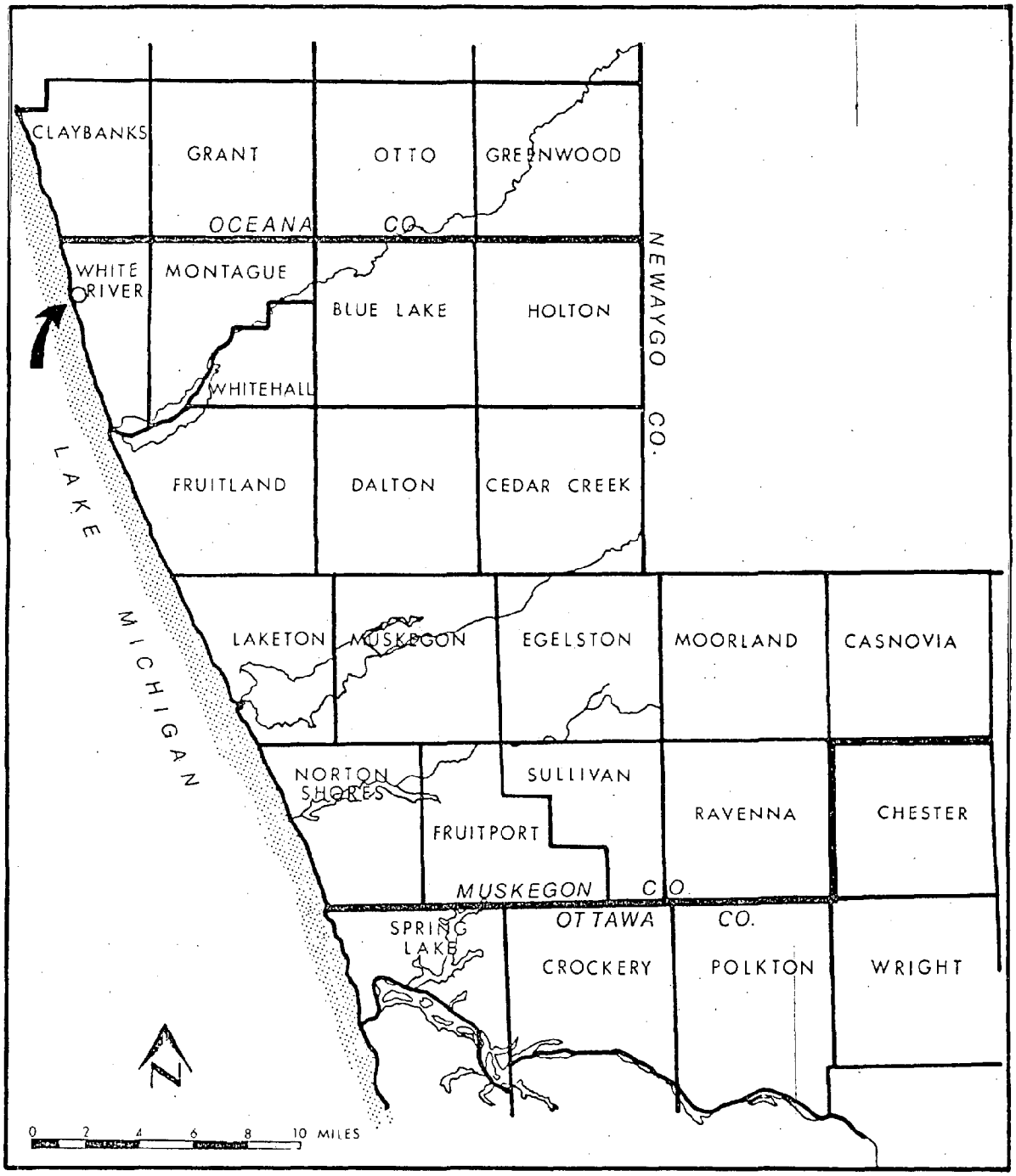


Figure III-26
General Location - Gray Dunes Subdivision

13. Gray Dunes Subdivision (cont.)

B. DESCRIPTION:

The Shoreline in the vicinity of Gray Dunes Subdivision is heavily developed for residential use. This area is subjected to excessive beach and foredune erosion caused by both wind and waves.

The Michigan Department of Natural Resources has designated almost the entire White River Township shoreline as a High Risk Erosion Area. The DNR has used aerial photographs to estimate bluff recession in the Gray Dunes area. The bluff in this area is eroding on the average by as much as 6.0 feet per year. Some erosion control structures show considerable deterioration. Erosion problems have forced some property owners to move houses back from the receding bluff. Dunes in this area are high and characterized by a steep escarpment. Figure III-27 provides a general look at the Gray Dunes area.

C. MAJOR CONCERNS:

Beach and dune erosion is the major concern. Existing erosion control structures have proven ineffective in handling continuous erosion processes. Some property owners have actually constructed several different structures in the last few years only to have each of them fail. There are a dozen homes and cottages in this area which are in eminent danger.

D. MANAGEMENT NEEDS:

A comprehensive erosion control program needs to be developed and implemented. The Township might investigate nonstructural planning alternatives which could help reduce dangers imposed by improper development of shoreland properties.

E. APC STATUS:

Lake Michigan Shoreline, in the vicinity of Gray Dunes Subdivision, is considered an APC because of its excessive erosion hazard. The Commission has assigned this area Low Regional Priority. Regional Priority will probably remain at the Low category until interest in nonstructural management techniques increases.

13. Gray Dunes Subdivision (cont.)

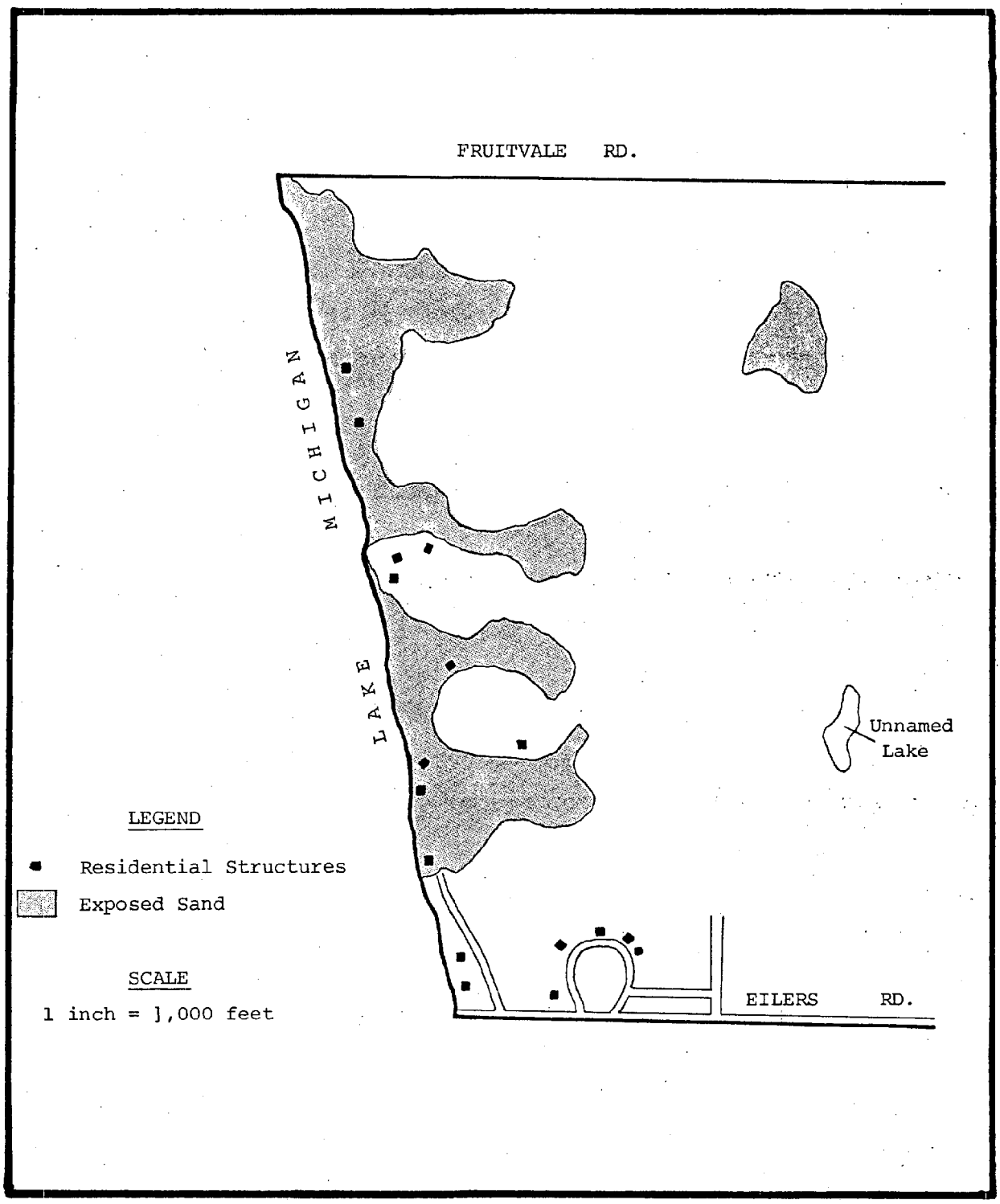
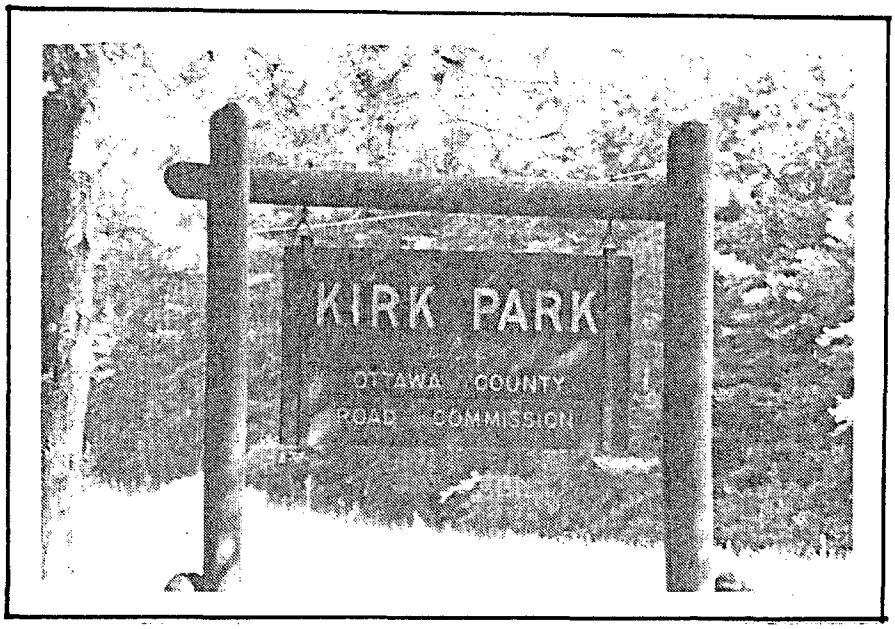


Figure III-27
Site Description
Gray Dunes Subdivision

14. KIRK PARK



Photograph III-21
Entrance to Kirk Park

HIGH RISK EROSION AREA OF PARTICULAR CONCERN

RECREATION AREA OF PARTICULAR CONCERN

14. Kirk Park

A. LOCATION: Grand Haven Township, Ottawa County T7N-R16W-Section 33.

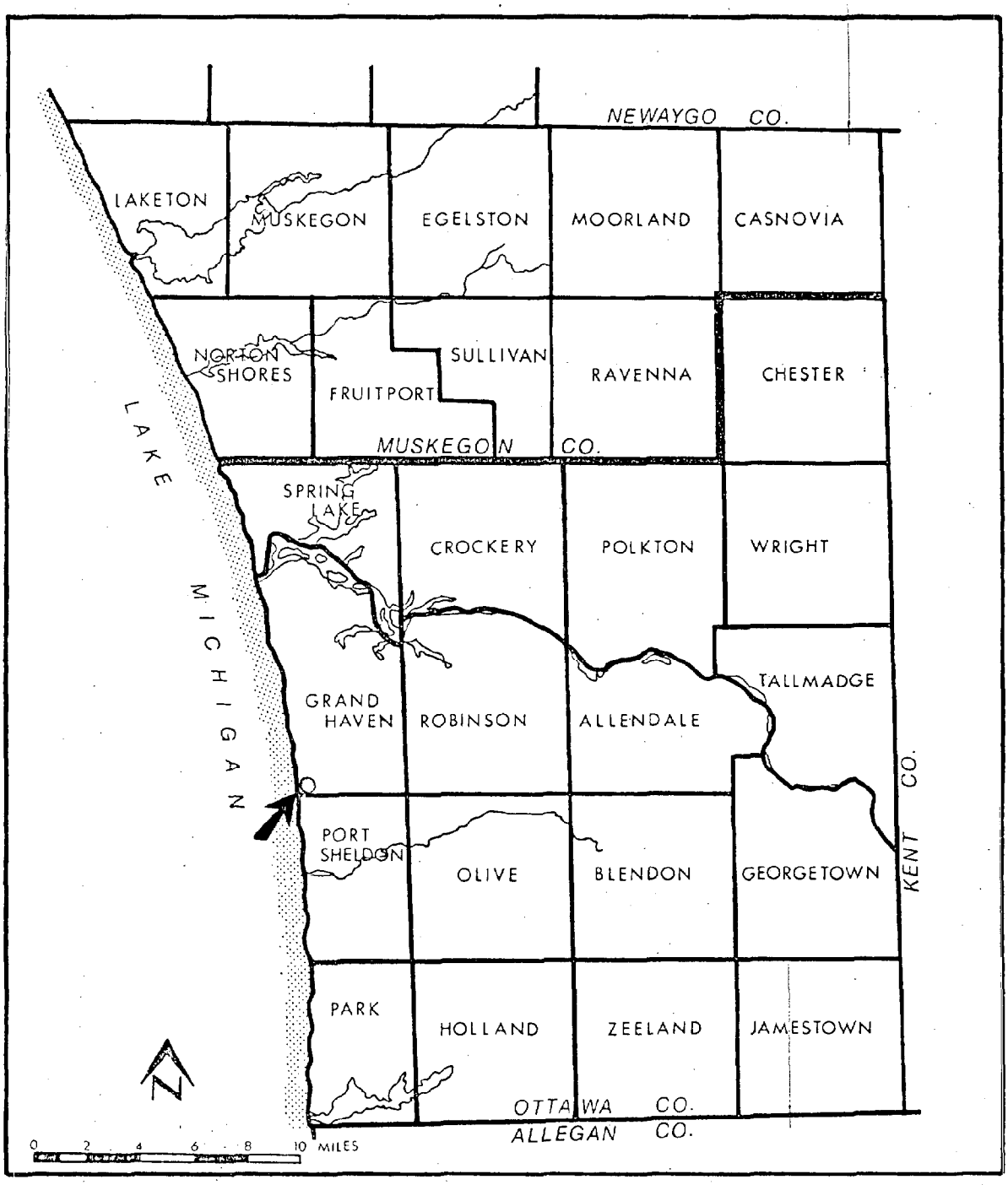


Figure III-28
General Location - Kirk Park

14. Kirk Park (cont.)

B. DESCRIPTION:

Kirk Park is an Ottawa County owned and operated park of approximately 30 acres. The park is very heavily wooded and has a picnic area, playground, cabin, nature trails, an historic monument, and approximately 900 feet of Lake Michigan frontage. The park is surrounded by private vacant land. Aside from being a recreational area of significant interest, Kirk Park is also an area of severe beach and foredune erosion.

The Michigan Department of Natural Resources has designated all of Grand Haven Township's shoreline as a High Risk Erosion Area. The DNR estimated that the bluff in this area has receded on the average by as much as 3.1 feet per year. This erosion has left a very steep, sandy bluff. Figure III-29 shows the location of various park facilities.

C. MAJOR CONCERNS:

Kirk Park is recognized by the Region 14 Commission as a High Risk Erosion Area of Particular Concern, and a Recreation Area of Particular Concern. Each category of concern has its own related issues.

Erosion problems at Kirk Park are the result of both natural and human associated causes. Wave and wind are, of course, erosional processes which would exist whether or not the area was developed as a park. There is, however, significant problems caused by excessive foot traffic over fragile and unstable vegetated areas. The Ottawa County Road Commission, which is responsible for park maintenance, has taken very specific steps to eliminate unnecessary slope disturbances. Given time, the action evoked by the County should help to stabilize erosion problems in much of the park's upland areas. As far as shoreline recession is concerned, it's probably best that the County leave well enough alone. If the State of Michigan or the U.S. Army Corp of Engineers were looking to locate an erosion control demonstration project, Kirk Park might be considered because of its public ownership.

Kirk Park is a very viable, heavily used, recreation resource. There are few such areas available to Ottawa County residents. Park expansion is generally considered a County objective.

14. Kirk Park (cont.)

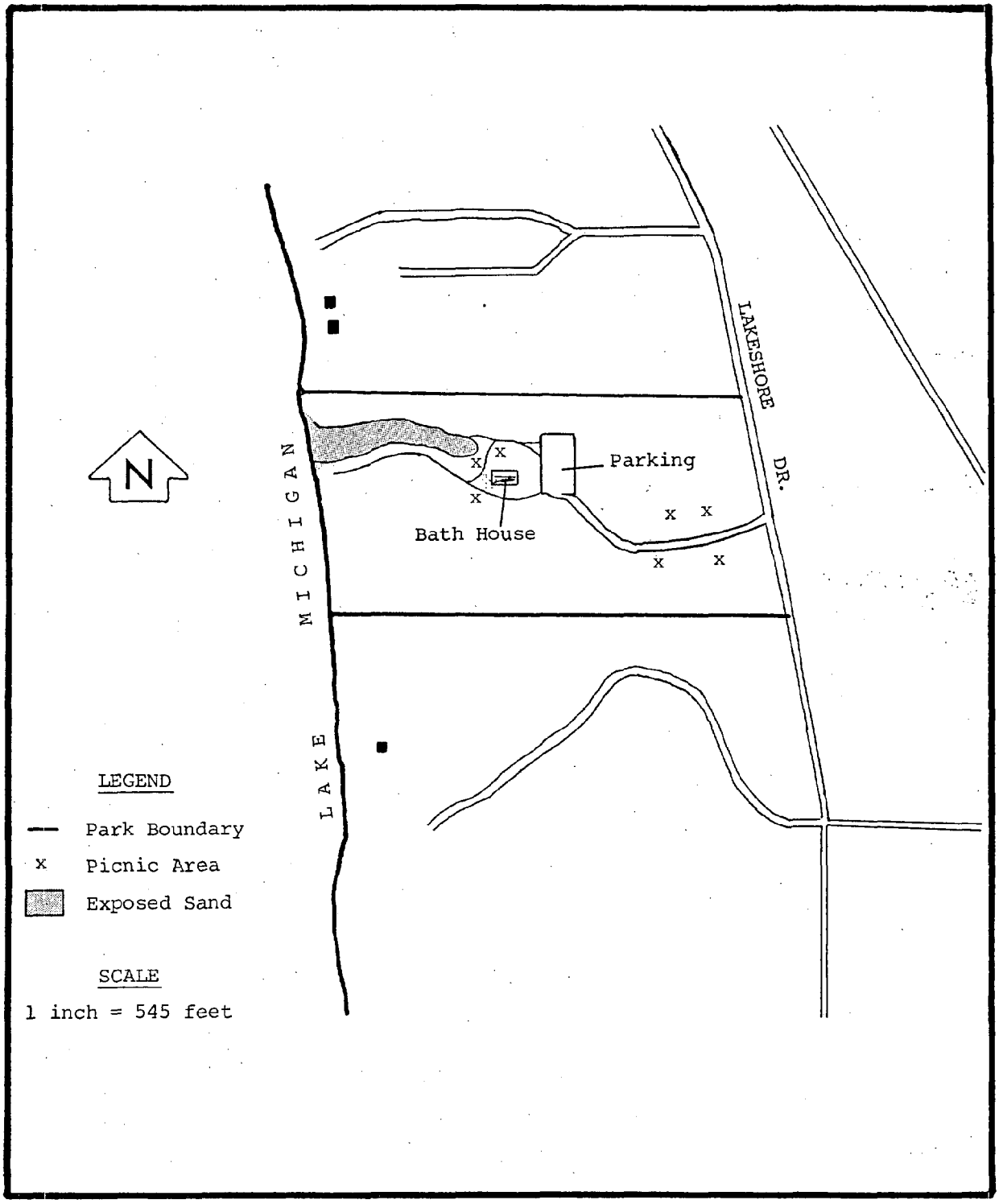


Figure III-29
Site Description
Kirk Park

14. Kirk Park (cont.)

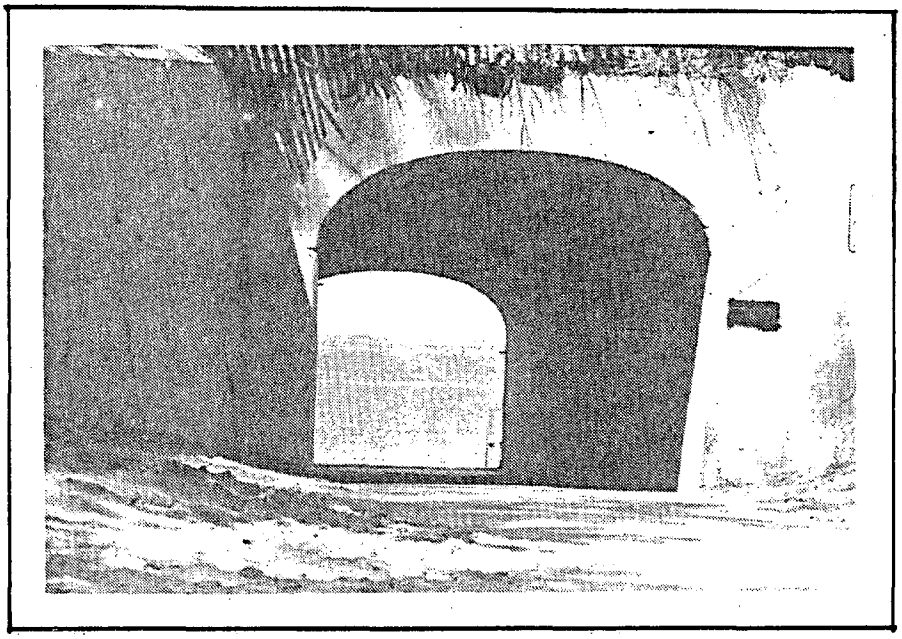
D. MANAGEMENT NEEDS:

Continued erosion control is a necessity. The planning of such controls should most likely preceed the acquisition of additional park acreage. In fact, the County should probably formulate a comprehensive management strategy which outlines phased acquisition and relates eventual recreation development to existing park facilities.

E. APC STATUS:

Ottawa County has shown a great deal of interest in expanding Kirk Park. It at one time looked hopeful that Kirk Park would be selected for a shoreline erosion control demonstration project being conducted by the U.S. Army Corps of Engineers. The Region 14 Commission therefore assigned the Kirk Park APC High Regional Priority. Since this original prioritization, the Corps has dropped its demonstration projects suggested for the West Michigan area and the County Road Commission has done well to stabilize upland erosion problems. The Ottawa County Board of Commissioners have, on the other hand, turned down a recent proposal to purchase additional adjacent duneland using Land and Water Conservation Funds on a 50-50 match basis. Regional Priorities have therefore been reduced to the Low category awaiting future developments.

15. TUNNEL PARK



Photograph III-21
The "Tunnel" at Tunnel Park

HIGH RISK EROSION AREA OF PARTICULAR CONCERN

RECREATION AREA OF PARTICULAR CONCERN

15. Tunnel Park

A. LOCATION: Park Township, Ottawa County T5N-R16W-Section 21.

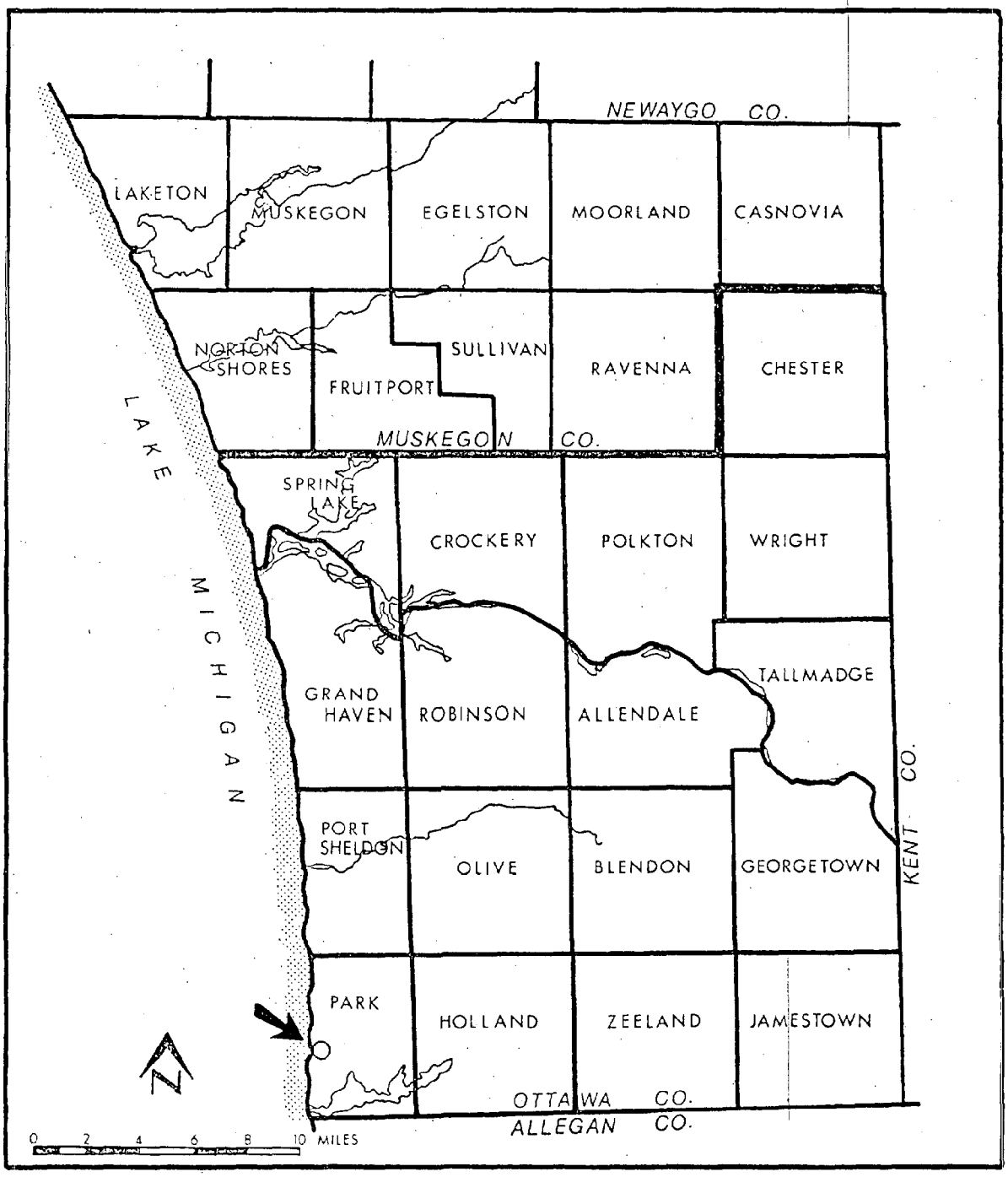


Figure III-30
General Location - Tunnel Park

15. Tunnel Park (cont.)

B. DESCRIPTION:

Tunnel Park is owned and maintained by Ottawa County. The park totals approximately 17 acres and contains a picnic area, bathhouse, playground, baseball diamond, 730 feet of beach, and a tunnel running through the dune to the beach. Aside from being an important recreational area, Tunnel Park is subjected to severe beach and foredune erosion.

The Michigan Department of Natural Resources has designated the shoreline in this vicinity as a High Risk Erosion Area. Although there are no specific estimates of bluff recession rates for this particular location, the shoreline is expected to have receded at least 30 feet in the last 30 years. Upland areas are particularly unstable and dune migration is ongoing. Figure III-31 shows Tunnel Park's general layout.

C. MAJOR CONCERNS:

Tunnel Park is both a High Risk Erosion Area of Particular Concern, and a Recreation Area of Particular Concern. Continued erosion and concentrated park use each pose specific problems. The Ottawa County Road Commission has, however, done a great deal to stabilize erosion and maintain park facilities. In fact, revegetation efforts at Tunnel Park are held as an example of just what can be done to control erosion on what would normally be a migrating dune. The dune face pictured in Photograph III-21 is protected from foot traffic by a fence which runs parallel to the beach. The dune itself is made stable by the beach grass planted several years before by the Ottawa County Road Commission.

D. MANAGEMENT NEEDS:

Present management of Park facilities appears more than adequate to preserve associate amenities. The County has developed a systematic erosion control program. Park expansion is not expected and longevity of existing facilities is anticipated.

E. APC STATUS:

Tunnel Park's importance as a recreation facility in Ottawa County caused the Regional Development Commission to give it APC status. The

15. Tunnel Park (cont.)

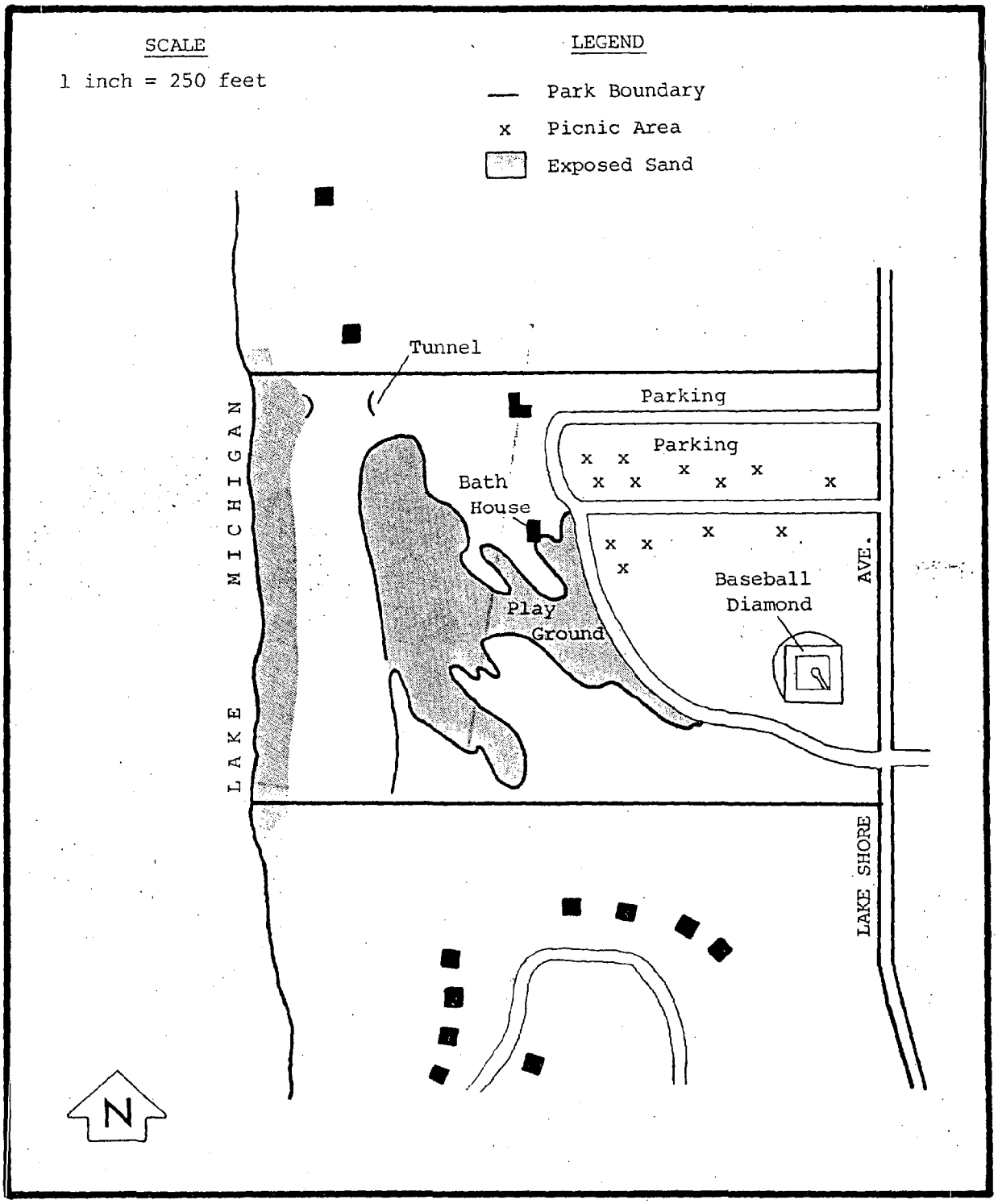
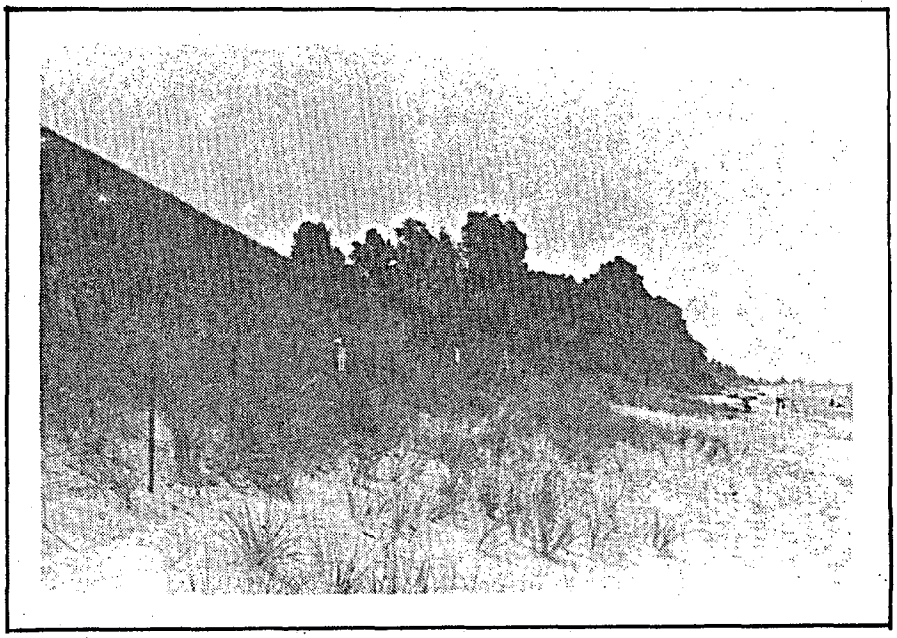


Figure III-31
Site Description
Tunnel Park

15. Tunnel Park (cont.)

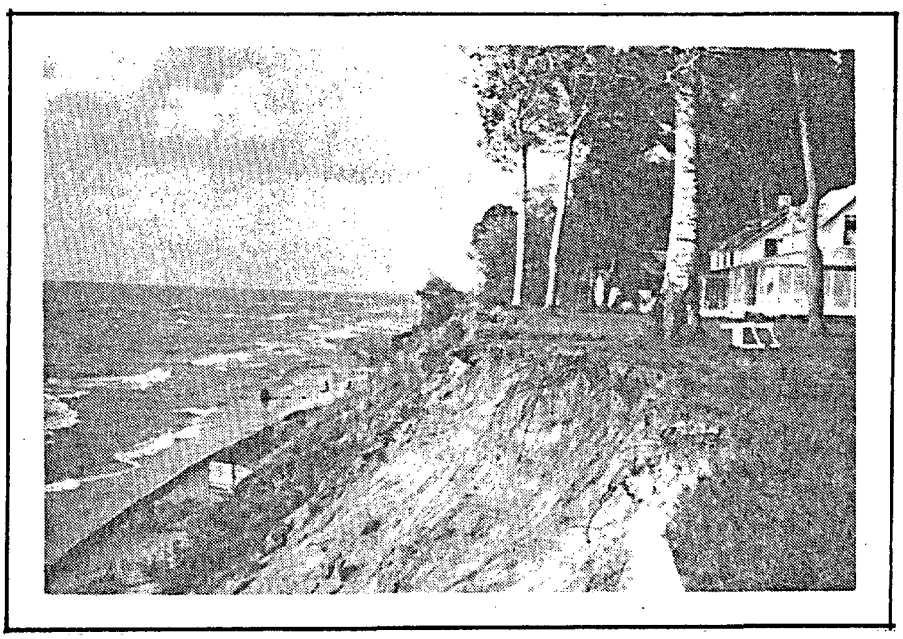


Photograph III-21
Revegetation at Tunnel Park

15. Tunnel Park (cont.)

County's prudent management of this valuable recreation area gave the Region 14 Commission little worry. The Region 14 Commission assigned this area Low Regional Priority. Continued County efforts have caused the Region 14 Commission to reaffirm its original Low Priority assignment regarding the Tunnel Park APC.

16. MICHILLINDA BEACH



Erosion in the Michillinda Area
Photograph III-23
HIGH RISK EROSION AREA OF PARTICULAR CONCERN

16. Michillinda Beach

A. LOCATION: Fruitland Township, Muskegon County T11N-R18W-Sections 11, 13, and 24.

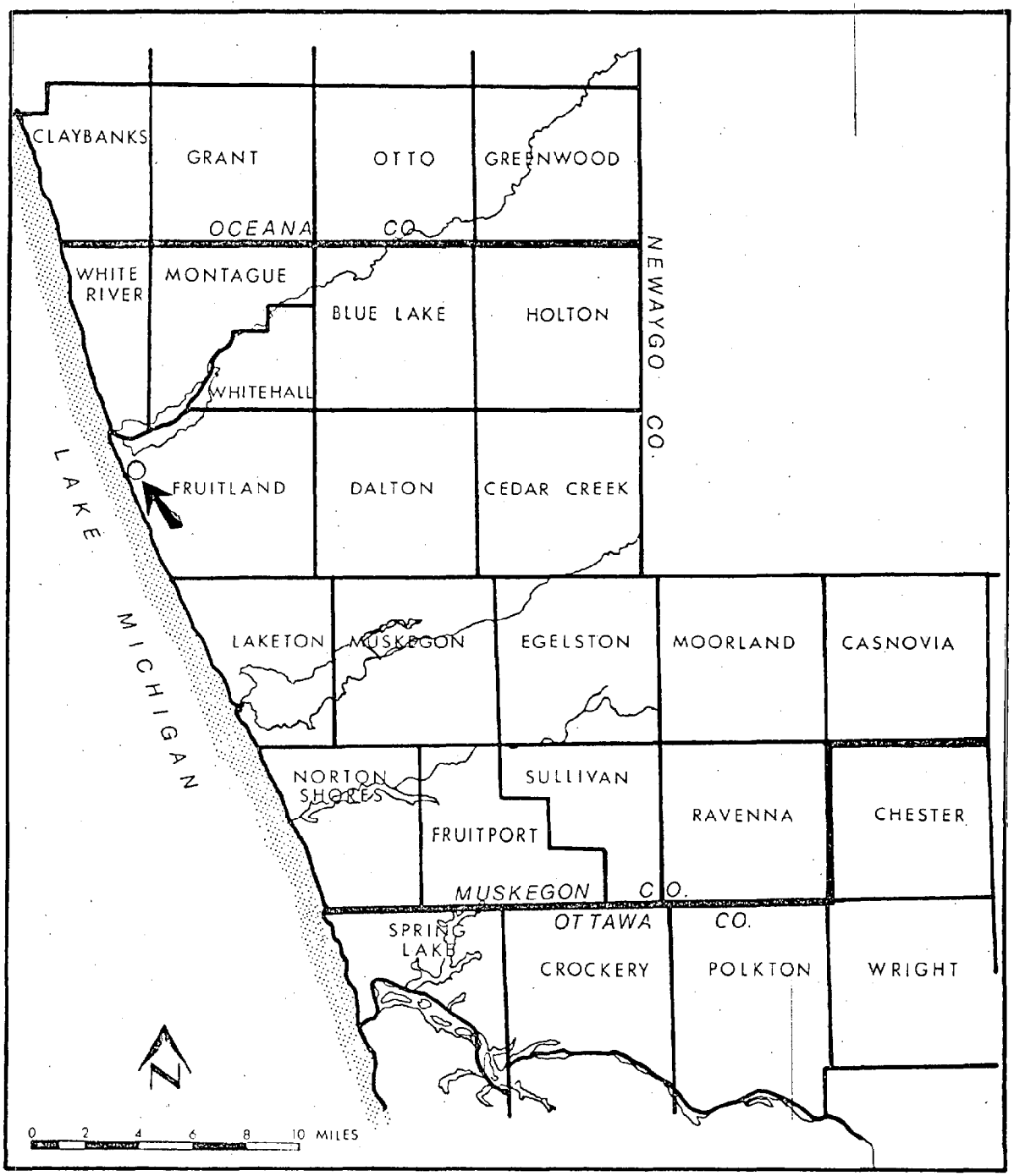


Figure III-32
General Location - Michillinda Beach

16. Michillinda Beach (cont.)

B. DESCRIPTION:

The Michillinda Beach subdivision is just one of several areas south of White Lake's channel which is subjected to excessive erosion. Other areas include Sylvan Beach, Beachmont Woods Plat, John Austin's Subdivision, and several single owner parcels as well as considerable property owned by the State of Michigan near Duck Lake.

The Michigan Department of Natural Resources has designated much of Fruitland Township's shoreline, including the areas listed above, as a High Risk Erosion Area. The DNR has compared aerial photographs taken in 1939 with similar photography taken in 1974 and have estimated that the bluff in some parts of this general vicinity have receded on the average by almost 6 feet per year. Beach in this area is often narrow and in some parts of some years non-existent. Banks are high and subjected to severe slumping. Most erosion control structures have afforded little protection. Several homes and cottages are threatened. Figure III-33 provides a general description of the Michillinda area.

C. MAJOR CONCERNS:

Erosion and its control is the primary concern centered upon the Michillinda area. It would appear that community members need to cooperate in their efforts in order to effectively combat nature's erosive forces.

D. MANAGEMENT NEEDS:

Michillinda management needs are really no different than any of the High Risk Erosion Areas previously discussed. It might be useful if the community formulated a comprehensive erosion control program.

Fruitland Township has just recently passed shoreline zoning amendments. The Township worked closely with the Department of Natural Resources and has incorporated the DNR's suggestions concerning shoreline setbacks for undeveloped shoreland areas.

16. Michillinda Beach (cont.)

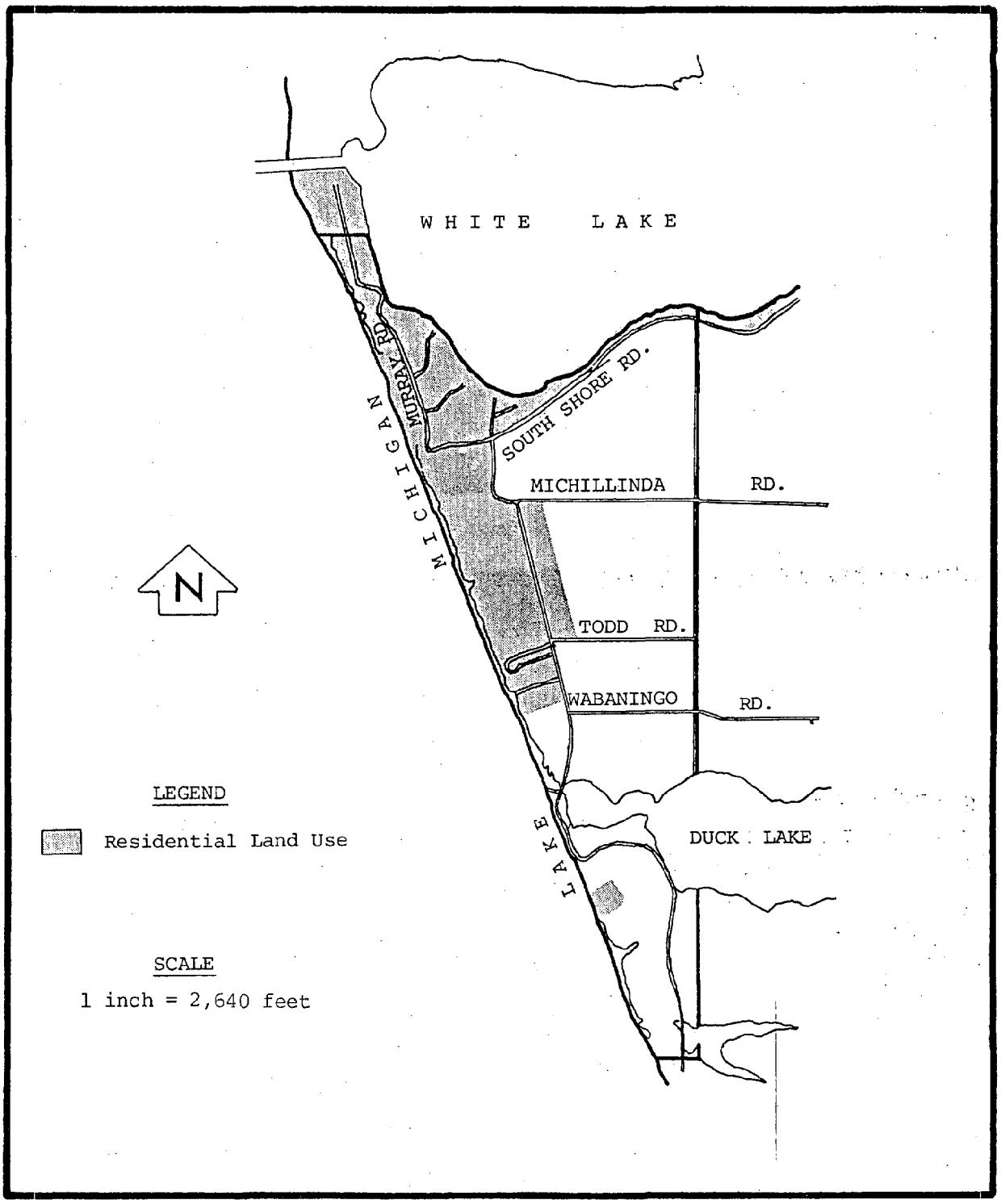


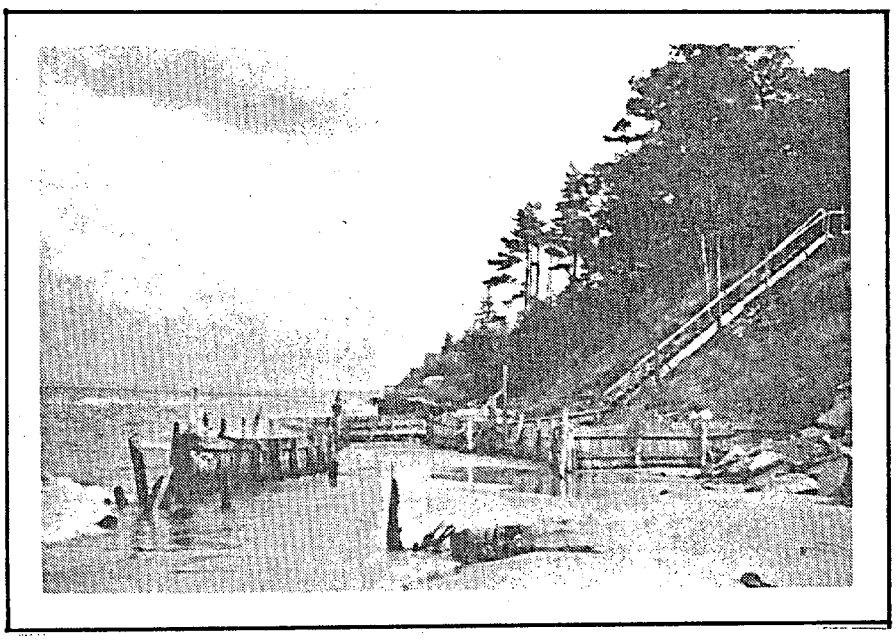
Figure III-33
Site Description
Michillinda Beach

16. Michillinda Beach (cont.)

E. APC STATUS:

The Michillinda area was considered an APC because of its high bluff recession rate. Fruitland Township was already working to include shoreland development provisions in its zoning ordinance. The APC was assigned Low Regional Priority because the Commission could do little more for the property owners than what was already being done. The Michillinda APC will remain a Low Regional Priority reflecting Fruitland Township's capable management efforts.

17. JUNIPER BEACH & SAHARA SANDS



Erosion in the Juniper Beach and Sahara Sands Vicinity
Photograph III-24
HIGH RISK EROSION AREA OF PARTICULAR CONCERN

17. Juniper Beach & Sahara Sands

A. LOCATION: Golden Township, Oceana County T15N-R19W-Sections 7 & 18.

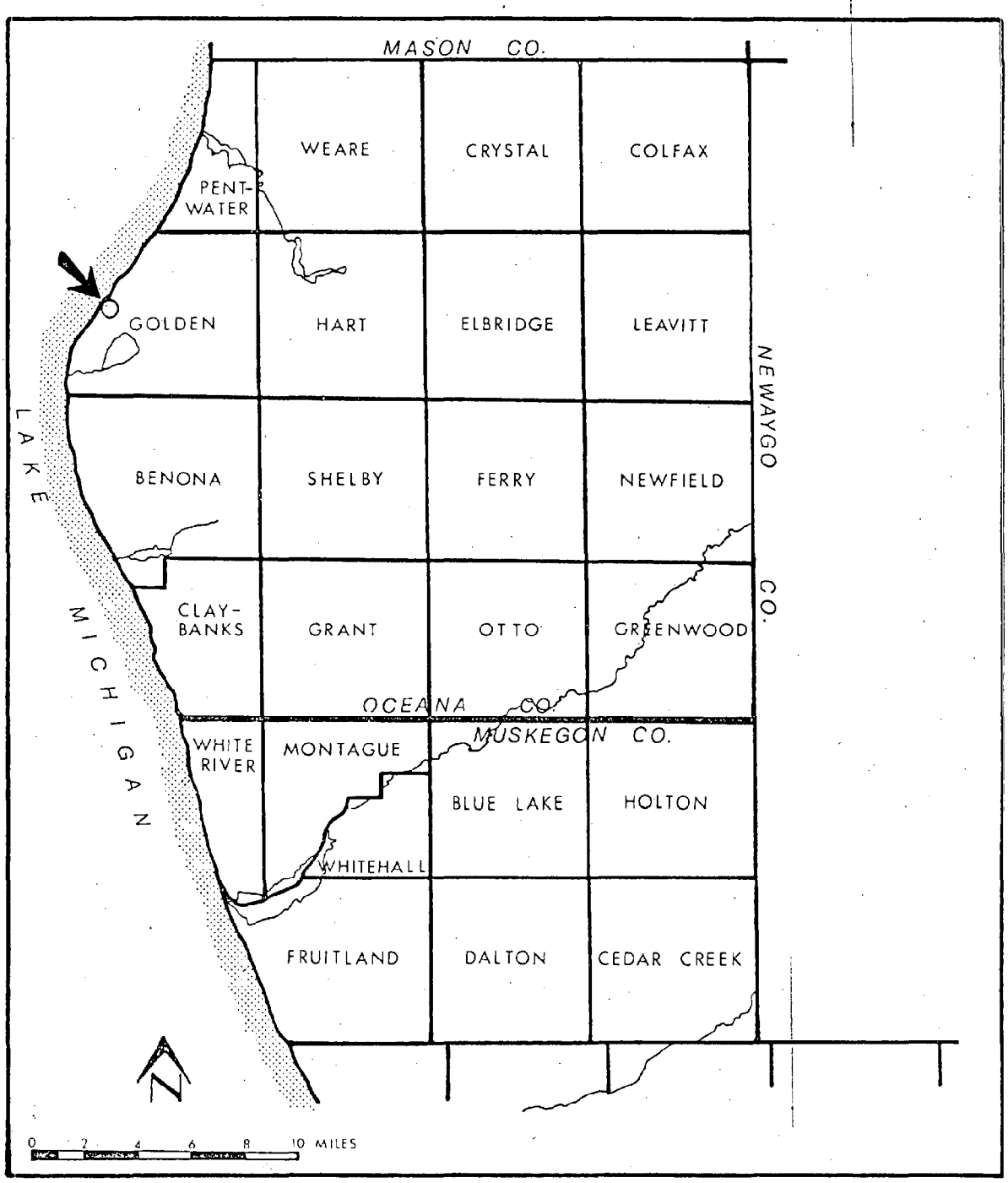


Figure III-34
General Location - Juniper Beach & Sahara Sands

17. Juniper Beach & Sahara Sands (cont.)

B. DESCRIPTION:

Juniper Beach & Sahara Sands are two small shoreline subdivisons immediately north of Silver Lake State Park in Golden Township. These two adjacent subdivisons share a shoreline erosion problem worth some consideration. The Michigan Department of Natural Resources at one time estimated that the bluff in this area had receded on the average by as much as 2 feet per year. Banks show severe slumping. Erosion control structures show obvious damage. Many of the cottages in this vicinity are threatened. Figure III-35 describes the area's general situation.

C. MAJOR CONCERNS:

Erosion is the major concern. Cooperative erosion control efforts are needed. Setbacks should be imposed regarding currently undeveloped lots.

D. MANAGEMENT NEEDS:

This area's management needs mirror those of previously discussed High Risk Erosion Areas. Planning efforts might more productively focus upon the formulation of a community-wide erosion control program.

E. APC STATUS:

The Juniper Beach and Sahara Sands subdivisions were recognized as a Region 14 APC reflecting the community's concern about its erosion problems. The APC was eventually assigned Low Regional Priority as action rests mainly with local property owners. The Juniper Beach & Sahara Sands APC will most likely remain a Low Regional Priority unless something new develops.

17. Juniper Beach and Sahara Sands (cont.)

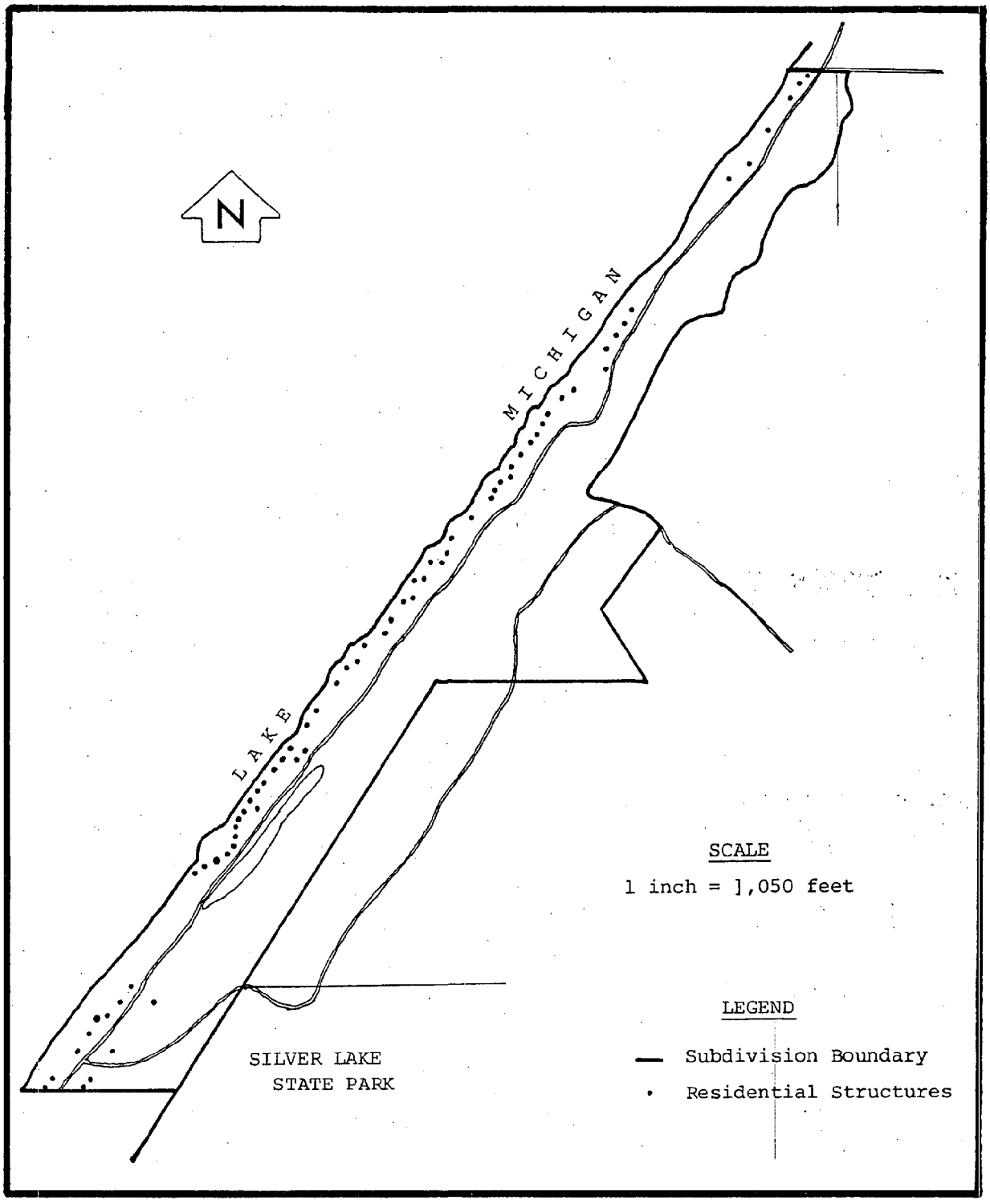
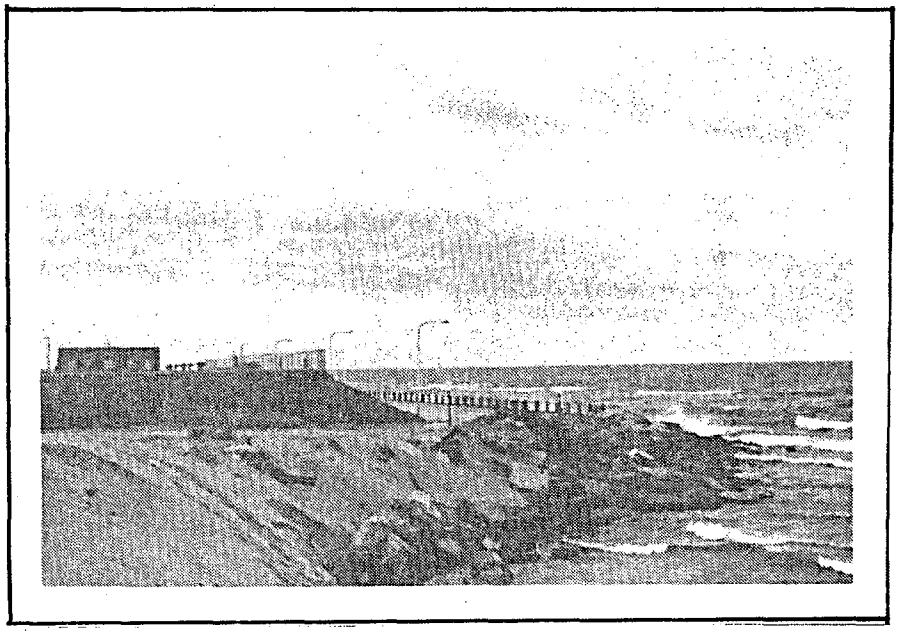


Figure III-35
Site Description
Juniper Beach and Sahara Sands

18. Pioneer Park, Muskegon State Park,
Pere Marquette Park, and Bronson Park



Photograph III-25
"Rip Rap" protecting Beach Road at Pere Marquette Park

HIGH RISK EROSION AREA OF PARTICULAR CONCERN

18. Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park

A. LOCATION: Laketon Township and the City of Muskegon, Muskegon County, T10N-R17W-Sections 6, 7, 17, 20, 21, 28, & 33. T9N-R17W-Section 3.

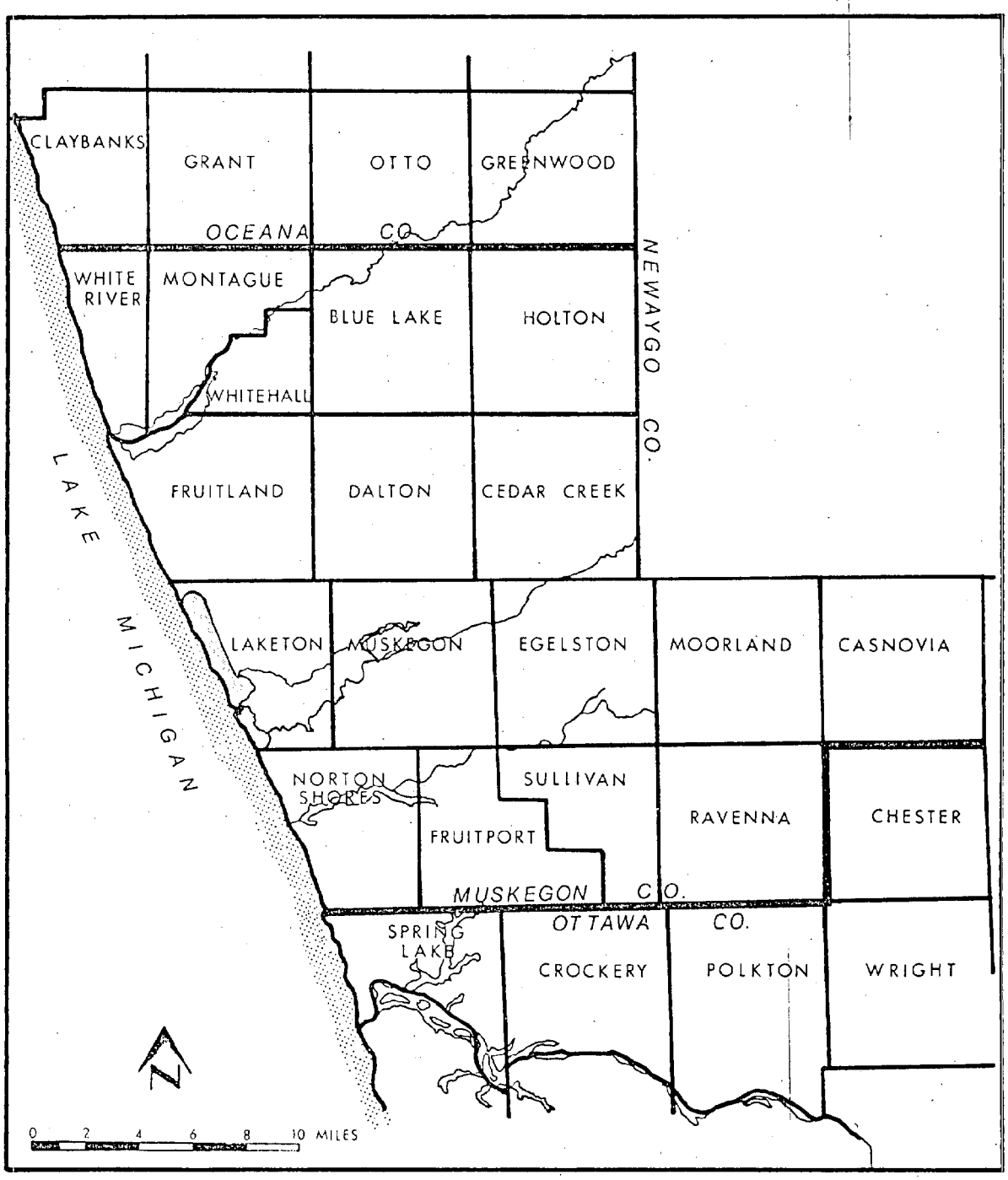


Figure III-36

General Location - Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park

18. Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park (cont.)

B. DESCRIPTION:

Within Laketon Township and the City of Muskegon are several public parks, each sharing considerable Lake Michigan shoreline. These park areas include: Pioneer Park, owned and maintained by Muskegon County; Muskegon State Park, owned by the State and operated by the Department of Natural Resources; Pere Marquette Park and Bronson Park, both owned and maintained by the City of Muskegon. Together these parks make available almost 6 miles of Lake Michigan Shoreline.

This shoreline is considered a High Risk Erosion Area by Michigan's Department of Natural Resources. The DNR has estimated that some locations in this general area have lost on the average, more than 2 feet of bluff per year. The area has a narrow beach. Banks are slumping severely in some places.

Figure III-37 describes existing land uses along this stretch of Lake Michigan.

C. MAJOR CONCERNS:

Erosion of public shoreline properties is the major concern affecting this particular APC. The location of so many publicly owned shoreline areas provides a rather unique opportunity regarding the possible use of innovative erosion control techniques.

D. MANAGEMENT NEEDS:

The existence of considerable publicly owned Lake Michigan shoreline was recognized as an opportunity regarding the possible use of innovative erosion controls. Instead of building structures to combat erosive forces, these same processes might be used to build and maintain natural landforms. A management package which capitalized on the use of natural erosion controls seems particularly appropriate for this APC.

E. APC STATUS:

The Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park APC was considered a possible pilot project area for testing

18. Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park (cont.)

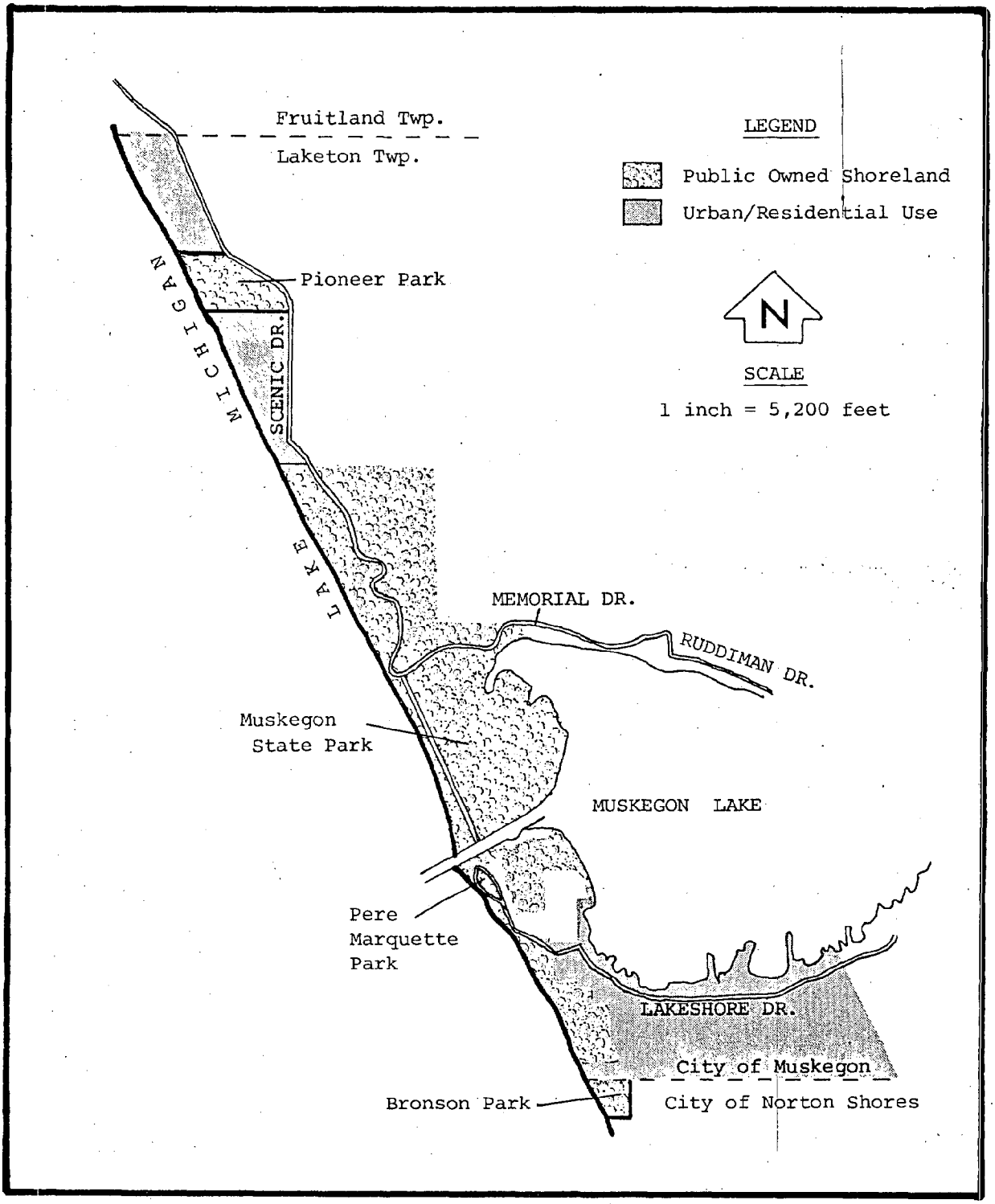
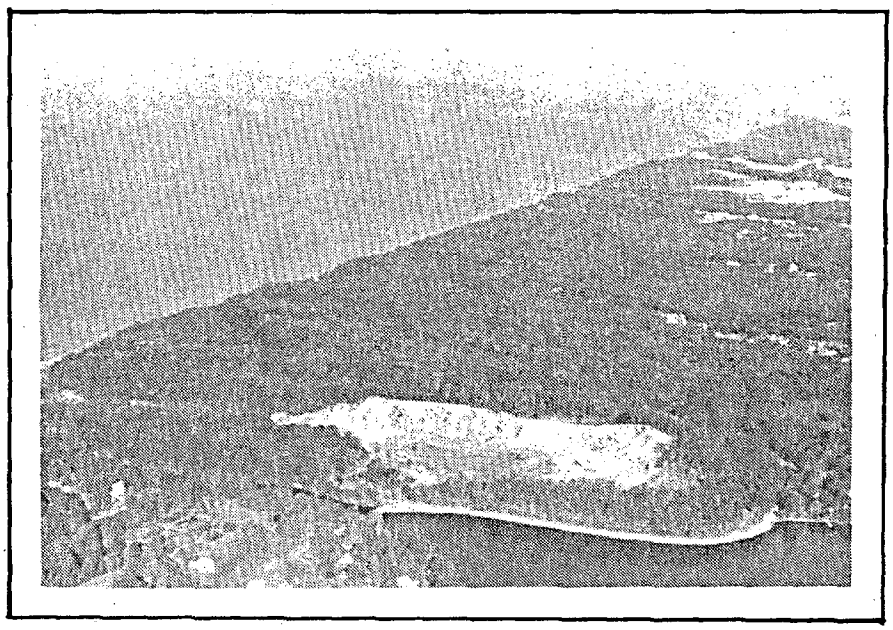


Figure III-37
Site Description
Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park

18. Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park (cont.)

innovative erosion control techniques. The Region 14 Commission recognized this APC in hopes of stimulating some support from the U.S. Army Corps of Engineers. This support never really materialized, so the area was eventually assigned Low Regional Priority. Unless the local community shows some renewed interest, this APC will remain a Low Regional Priority.

19. MONA SHORES SCHOOL DISTRICT PROPERTY



The Mona Shores School District Property Located Just North of the Swett Property and the Textron Sand Mine Pictured

Photograph III-26

HIGH RISK EROSION AREA OF PARTICULAR CONCERN

RECREATION AREA OF PARTICULAR CONCERN

19. Mona Shores School District Property

A. LOCATION: City of Norton Shores, Muskegon County, T9N-R16W-Section 14.

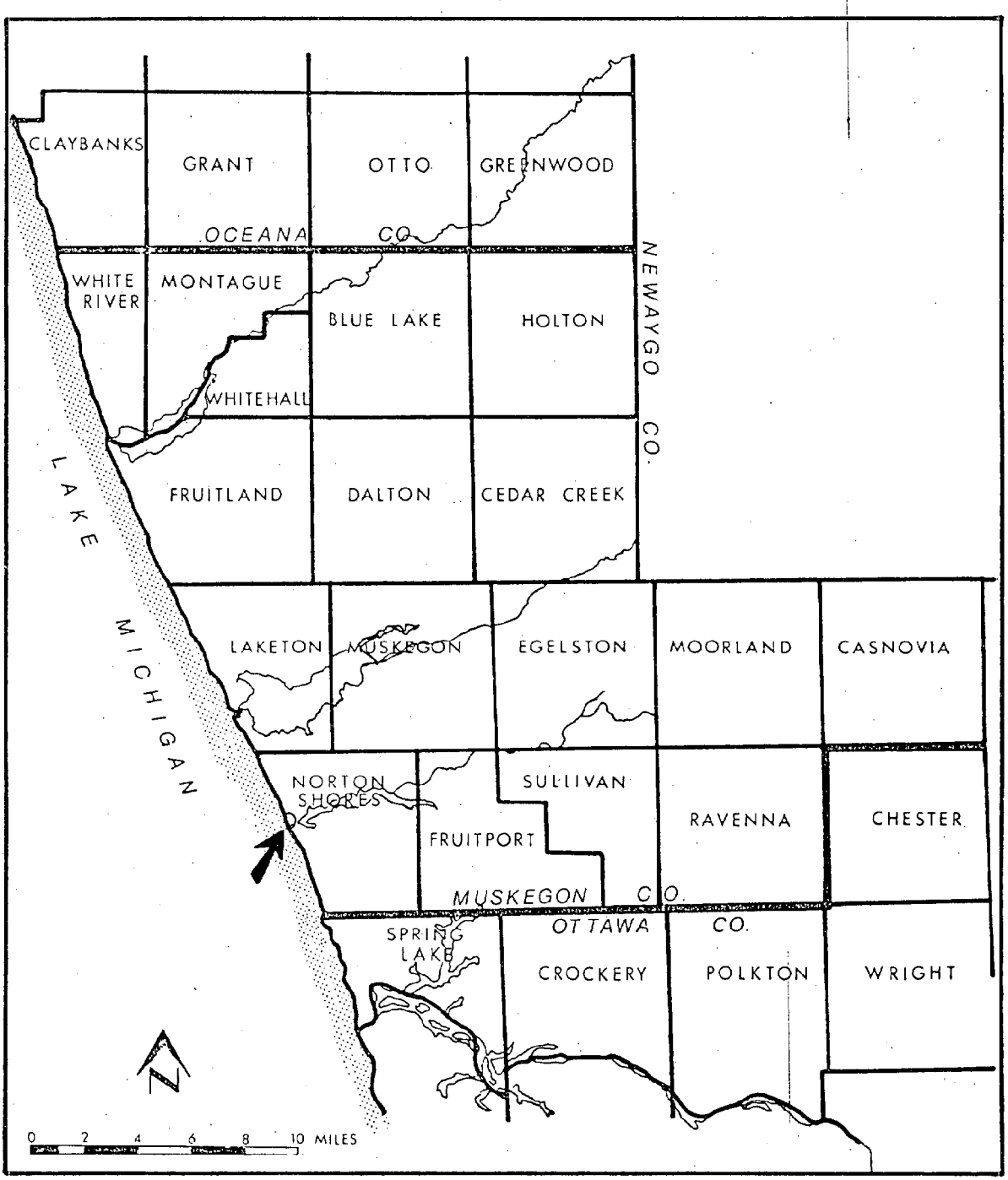


Figure III-38

General Location - Mona Shores School District Property

19. Mona Shores School District Property (cont.)

B. DESCRIPTION:

The Mona Shores School District Property has approximately 2,800 feet of Lake Michigan frontage. This 92 acre parcel is a very heavily wooded duneland area which remains primarily in a natural state. The Mona Shores Property lies right in the middle of a very significant management area for the City of Norton Shores. This property is located north of, and adjacent to, the Swett Property, which will soon be acquired by the City and developed as a recreation area. The Swett Property is a previously discussed APC. Whitey's Woods, another APC already mentioned, also borders the Mona Shores land.

Besides being recognized as a recreation resource, the Mona Shores School District Property is a concern because of its high erosion rate. The Michigan Department of Natural Resources designated all of Norton Shores' shoreline as a High Risk Erosion Area. Futhermore, the DNR has estimated that the bluff in the Mona Shores area has receded on the average by more than 4 feet per year.

Figure III-39 identifies existing land ownership patterns and corresponding uses.

C. MAJOR CONCERNS:

Concerns about the Mona Shores School District Property are divided between its erosion problems and ensuing development pressures which might result from the acquisition and management of the adjacent Swett Property by the City of Norton Shores.

D. MANAGEMENT NEEDS:

Although erosion in this area is severe, its effects are at present relatively inconsequential. Erosion will, however, play a very significant role if this area is eventually developed. The development of this area is therefore more important at this point than are the recognized erosion problems.

19. Mona Shores School District Property (cont.)

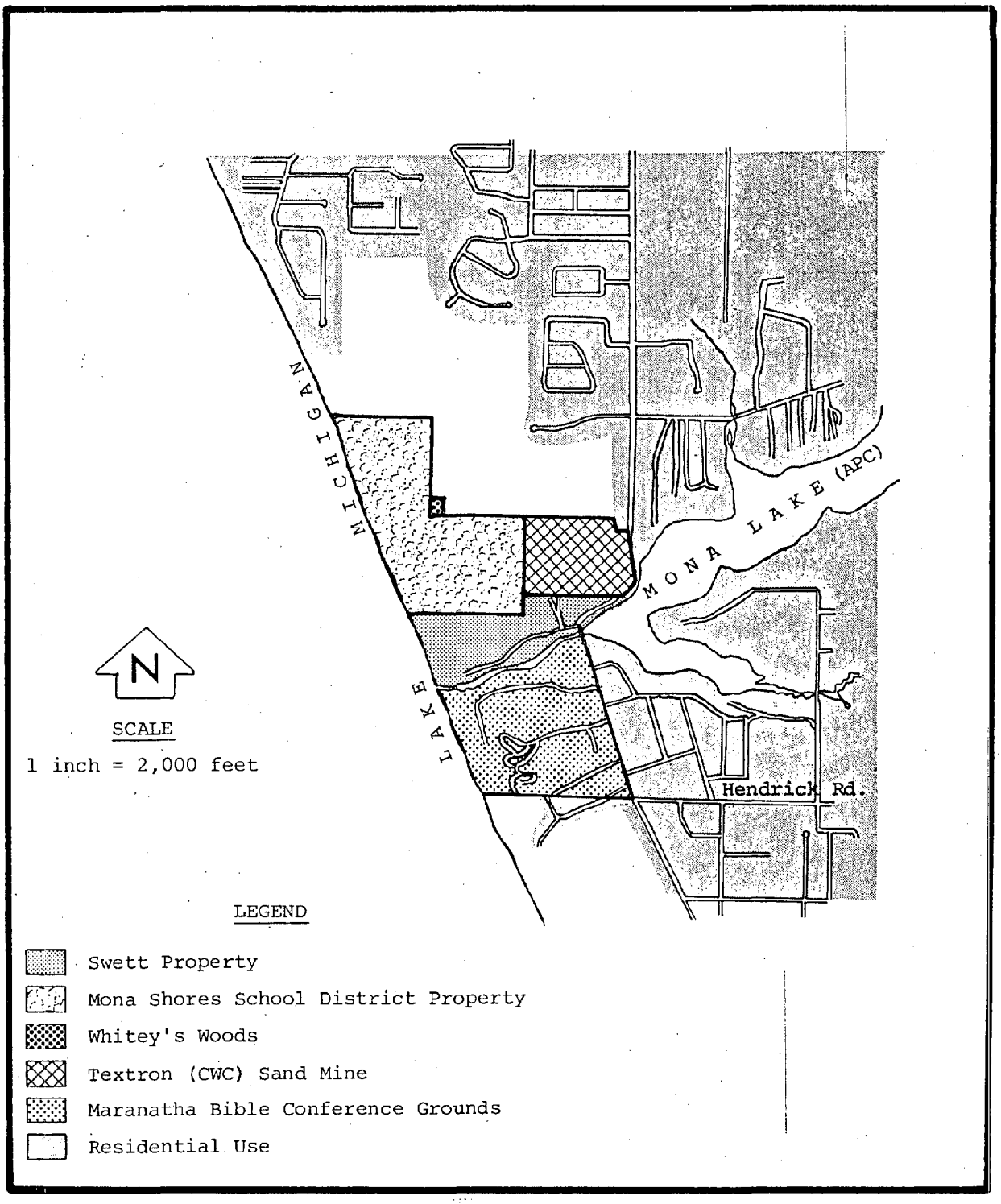


Figure III-39

Site Description - Mona Shores School District Property

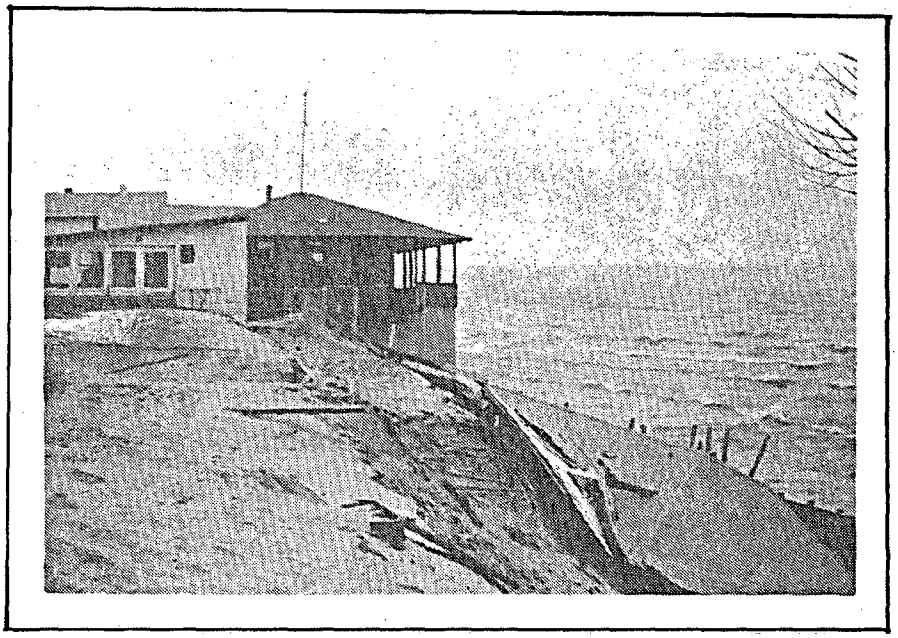
19. Mona Shores School District Property (cont.)

The area north of the Mona Lake Channel, which includes this and other recognized APC's, requires a comprehensive management plan. The City of Norton Shores intends to prepare such a plan during its 1978-1979 fiscal year.

E. APC STATUS:

The Mona Shores School District Property was recognized as a Region 14 APC because of its potential as a recreation resource, and its severe erosion problems. A pilot erosion control project was at one time suggested for the area but its limited access made such a project impractical. Existing passive recreation seemed an appropriate use for this particular area. This APC was therefore assigned Low Regional Priority. Renewed local interest, and plans by the City of Norton Shores to acquire the Swett Property, have caused the Region 14 Commission to assign this APC High Regional Priority in support of the City's planning and management efforts.

20. STICKNEY RIDGE



Scene Common in the Stickney Ridge Area
Photograph III-27
HIGH RISK EROSION AREA OF PARTICULAR CONCERN

20. Stickney Ridge

A. LOCATION: Grand Haven Township, Ottawa County T8N-R16W-Section 32.

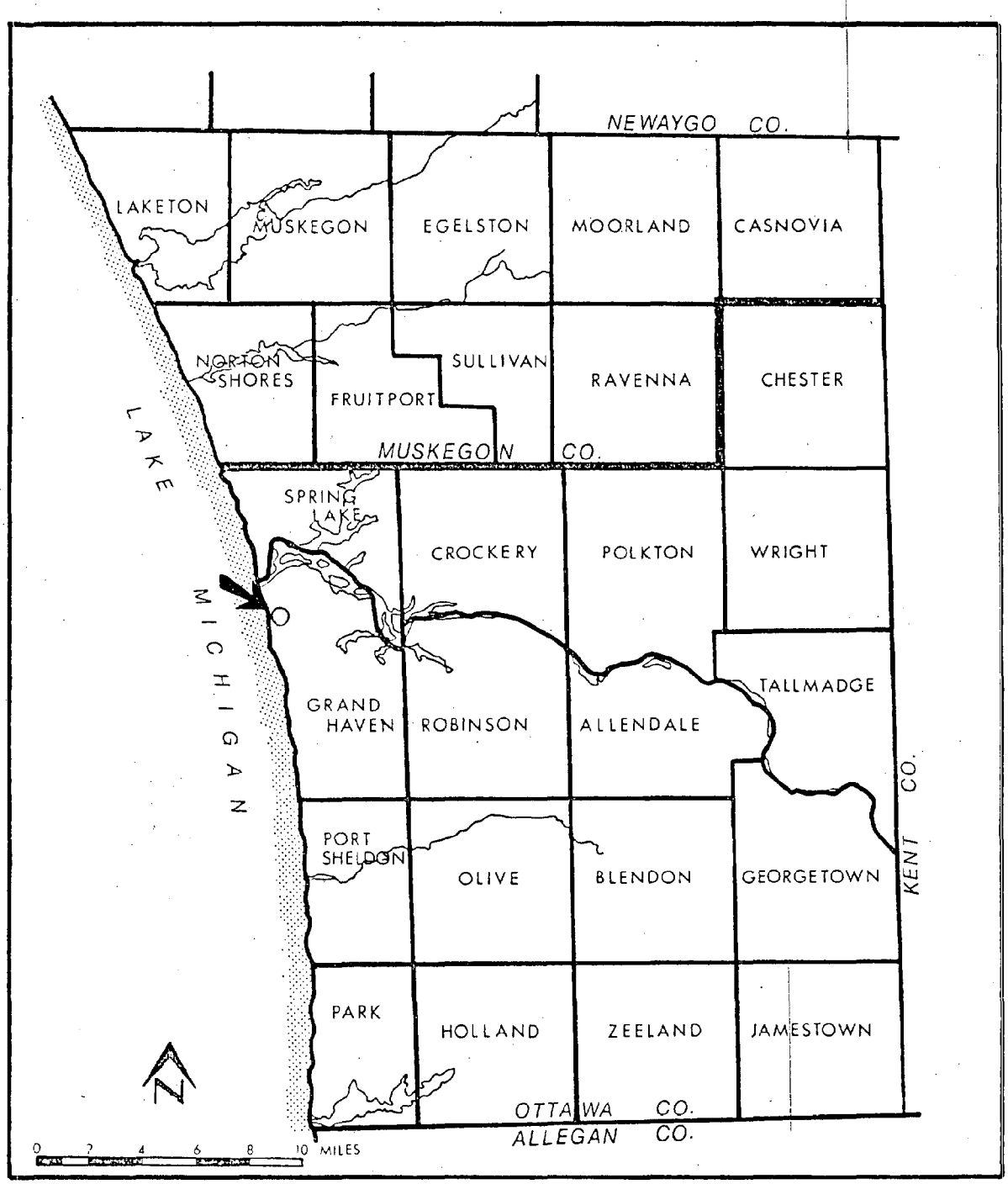


Figure III-40
General Location - Stickney Ridge

20. Stickney Ridge (cont.)

B. DESCRIPTION:

So called "Stickney Ridge" consist of about a dozen or so houses which border Lake Michigan on a low, yet steep bluff found in Grand Haven Township. This small, rather inconspicuous area, is famous for its erosion problems. These problems have received particular notoriety because several cottages have in recent years actually fallen into Lake Michigan and were totally destroyed.

The Michigan Department of Natural Resources has never estimated a recession rate for the Stickney Ridge area. It has, however, designated all Lake Michigan Shoreline in Grand Haven Township as a High Risk Erosion Area. The beach near Stickney Ridge is very narrow to non-existent. Banks are severely eroded and slumping. Erosion control structures need constant attention and repair.

Figure III-41 describes the general Stickney Ridge area.

C. MAJOR CONCERNS:

Erosion and the further loss of homes and property in the Stickney Ridge area is the major concern. A comprehensive erosion control program coordinated among all property owners in the area might prove beneficial.

D. MANAGEMENT NEEDS:

Those dwellings currently endangered along Stickney Ridge have two possible alternatives: 1) they might be moved further inland away from Lake Michigan, 2) property owners can construct and maintain more effective erosion controls. As for the first alternative, some cottages simply can't be moved or they have no place to go. As for the second alternative, it isn't really clear whether or not the property owners can afford more effective erosion controls or whether practical controls even exist. A coordinated neighborhood effort to control erosion might prove the most advantageous.

E. APC STATUS:

The Stickney Ridge area was recognized as an APC because of its

20. Stickney Ridge (cont.)

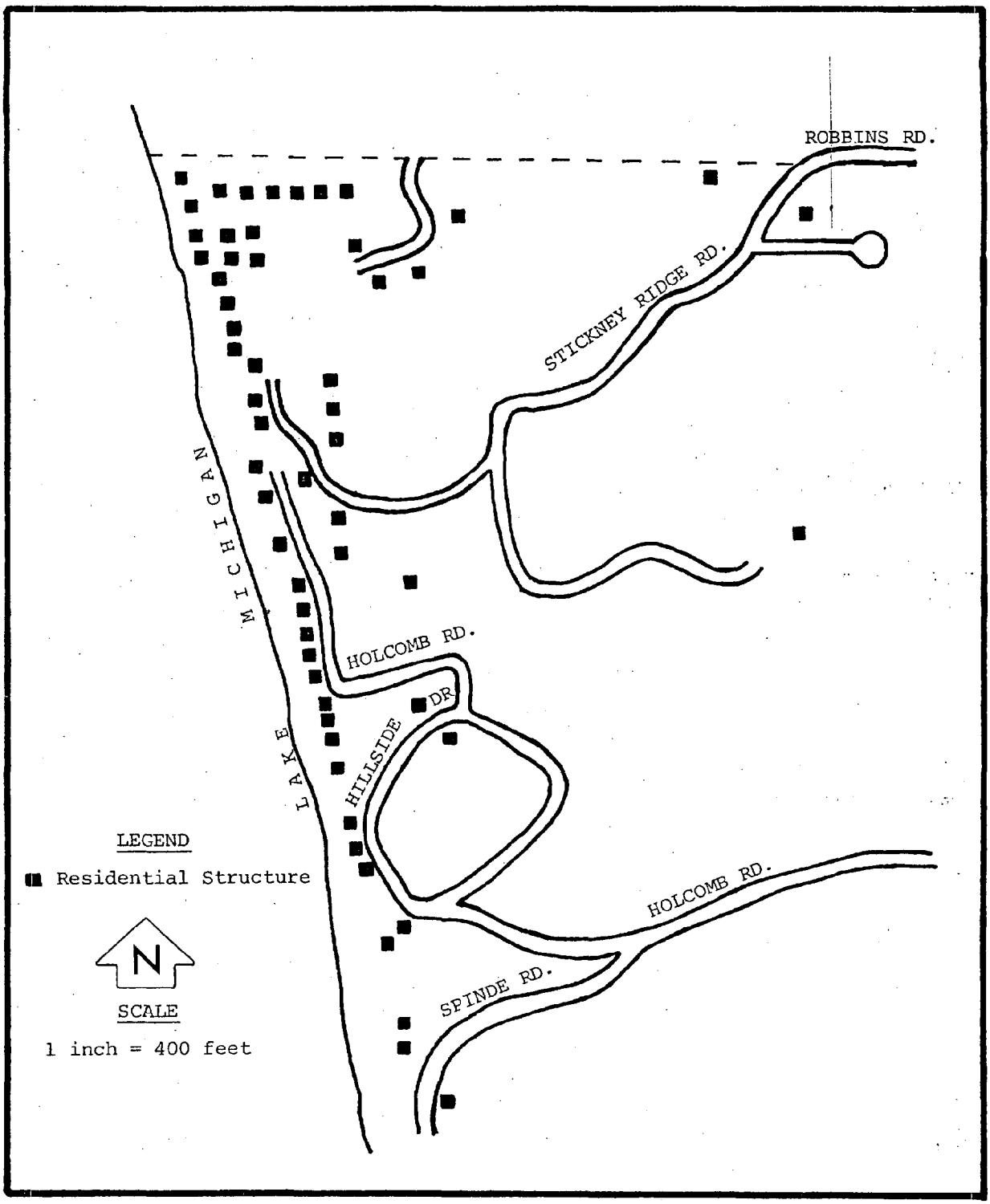
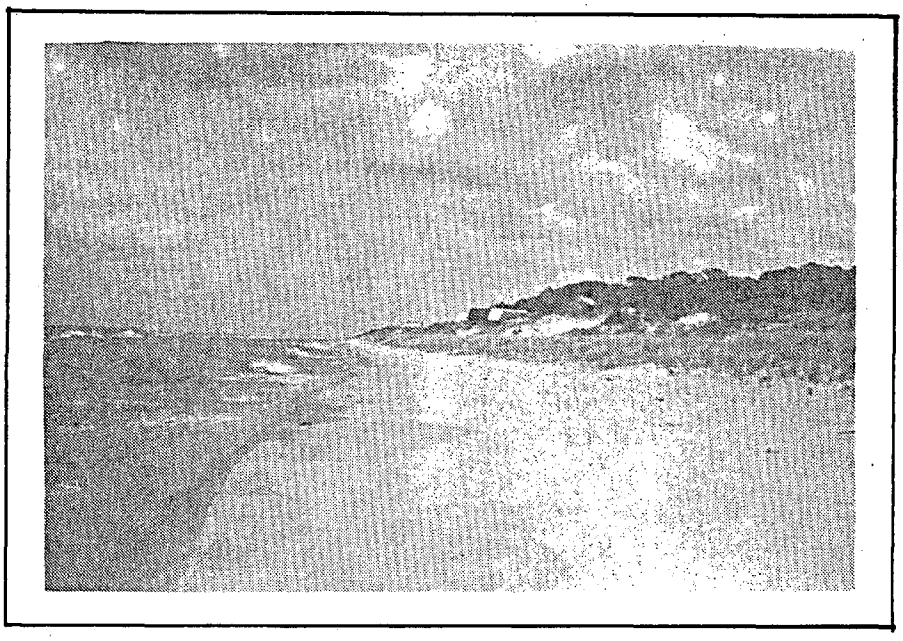


Figure III-41
Site Description
Stickney Ridge

20. Stickney Ridge (cont.)

obvious erosion problems. These problems remain up to the local property owner to solve. The Region 14 Commission will provide what technical assistance it can concerning the problems facing these property owners, yet their interest in our involvement has been low. The Region 14 Development Commission assigned this APC Low Regional Priority and it remains as such until further notice.

21. COBMOOSA SHORES



Cobmoosa Shores Shoreline

Photograph III-28

HIGH RISK EROSION AREA OF PARTICULAR CONCERN

21. Cobmoosa Shores

A. LOCATION: Benona Township, Oceana County T14N-R19W-Section 36.
T14N-R18W-Section 31.

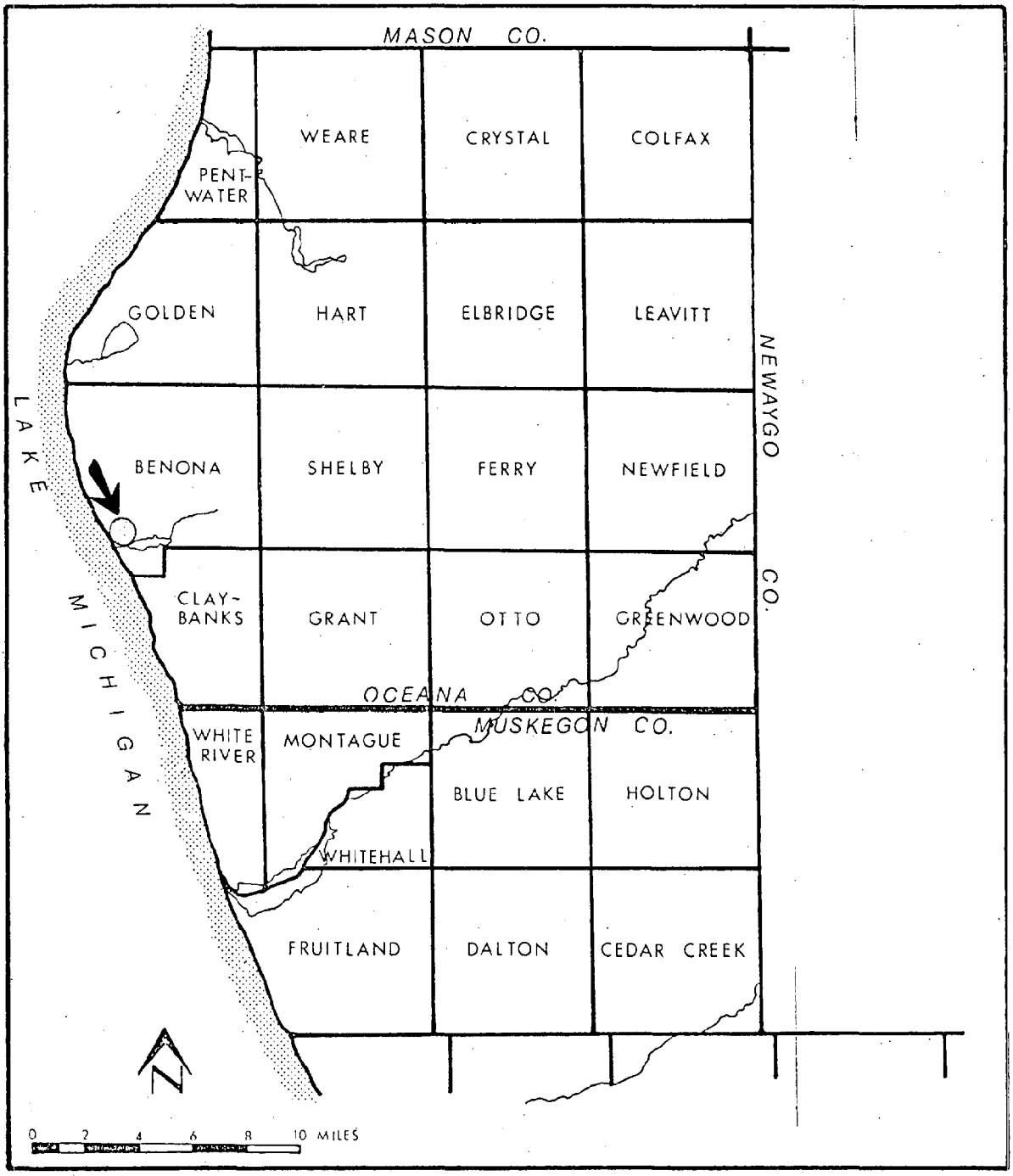


Figure III-42
General Location - Cobmoosa Shores

21. Cobmoosa Shores (cont.)

B. DESCRIPTION:

Cobmoosa Shores is yet another shoreline subdivision which is subjected to excessive wind and wave erosion. Homes and cottages in this plat have been built only recently. There are many lots still available for development. Upland blown out areas are also experiencing some development pressure.

The Michigan Department of Natural Resources used aerial photographs to estimate past recession rates. The bluff in this area has receded on the average by as much as 4.4 feet per year. The beach is relatively narrow. Bank slumping varies from slight to severe. Most existing dwellings have been built 30 to 50 feet beyond the bluff line.

Figure III-43 describes the Cobmoosa area.

C. MAJOR CONCERNS:

Like the preceding High Risk Erosion APC's, erosion and its possible effect upon homes and property is the single major concern when referring to Cobmoosa Shores. It will be difficult to slow development in this area. Very little can be done with those homes and cottages which already exist. The problem is to retain shoreland properties and stabilize upland dunes.

D. MANAGEMENT NEEDS:

There is a need for a systematic and comprehensive erosion control program for the Cobmoosa Shores Area. Property owners should take care to allow adequate setback when constructing new dwellings.

E. APC STATUS:

Cobmoosa Shores has a serious erosion problem. The solutions to such problems rest entirely with the property owners and Benona Township. The West Michigan Shoreline Regional Development Commission has assigned this APC Low Regional Priority. No immediate change in this priority is envisaged.

21. Cobmoosa Shores (cont.)

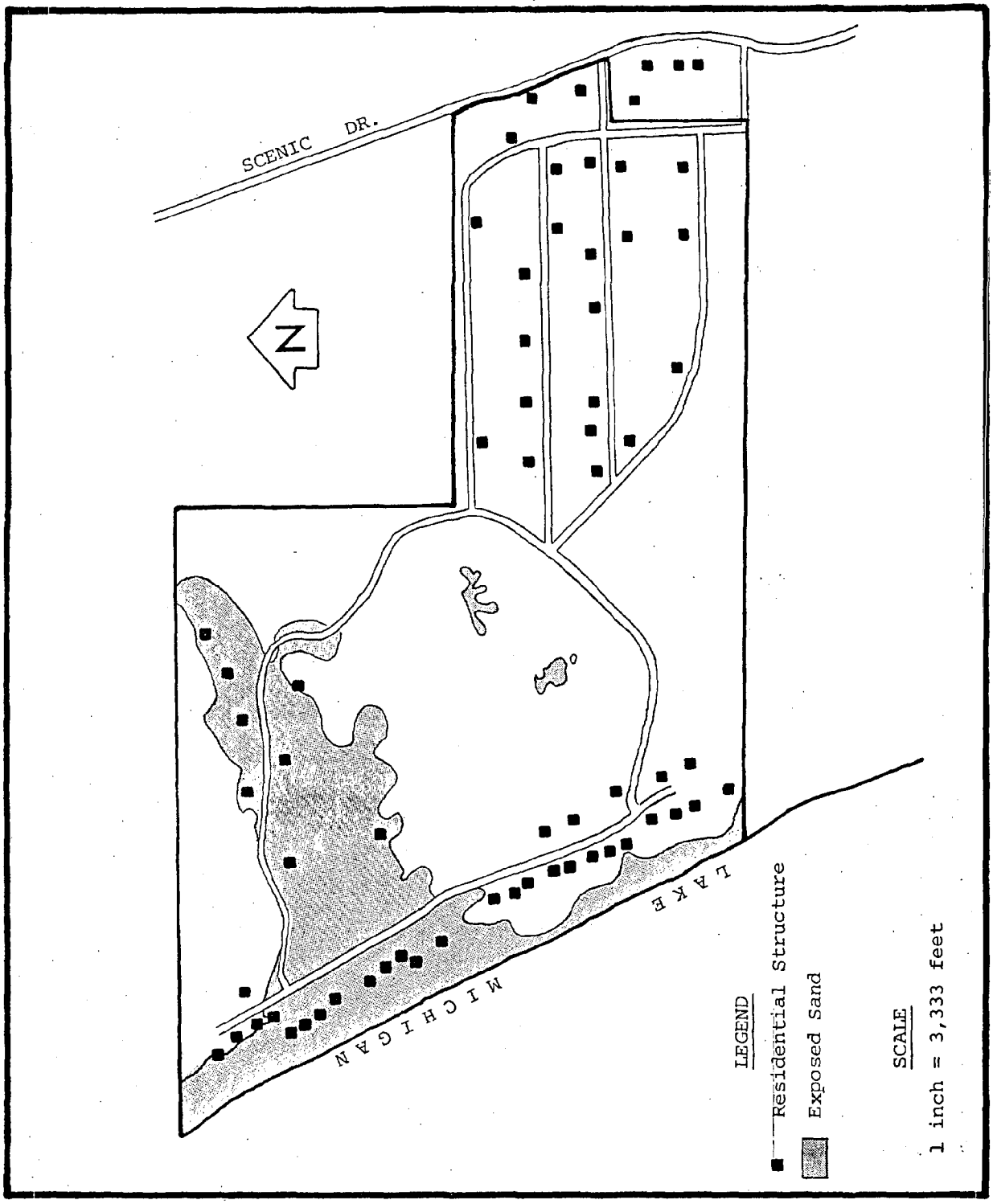
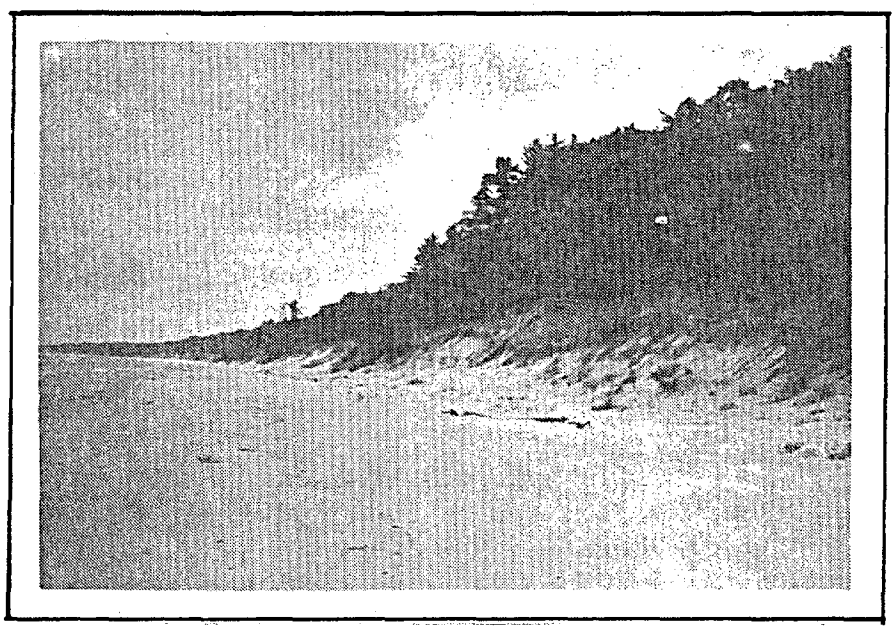


Figure III-43
Site Description
Cobmoosa Shores

22. CEDAR BLUFF



Cedar Bluff Shoreline
Photograph III-29
HIGH RISK EROSION AREA OF PARTICULAR CONCERN

22. Cedar Bluff

A. LOCATION: Pentwater Township, Oceana County T16N-R18W-Section 33.

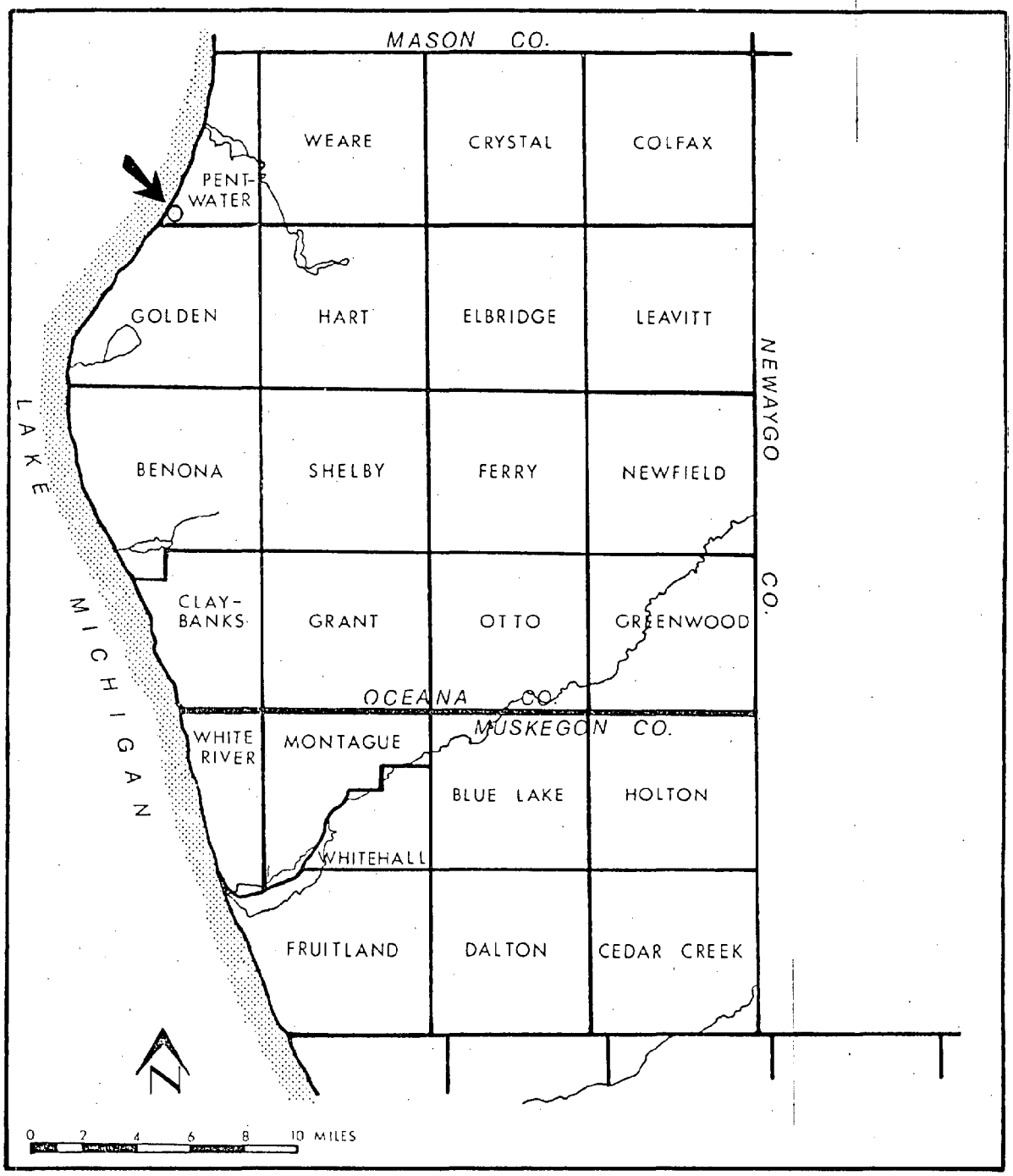


Figure III-44

General Location - Cedar Bluff

22. Cedar Bluff (cont.)

B. DESCRIPTION:

Cedar Bluff is a platted, yet primarily undeveloped shoreline area which has receded on the average by as much as 4.7 feet per year. (Recession rate estimated by DNR using 1939 and 1974 aerial photography). It has a narrow beach and has experienced some severe bank slumping. Figure III-45 examines the area's land use pattern.

C. MAJOR CONCERNS:

Erosion and its consequences are the concerns. The fact that so much of this area can still be developed gives rise to many meaningful management opportunities. The Township should prepare a management strategy as an aid in developing this location.

D. MANAGEMENT NEEDS:

An erosion control program coordinated with an overall development concept seems the best way to avoid future problems imposed by construction in the Cedar Bluff area.

E. APC STATUS:

The erosion problems which confront development in the Cedar Bluff area are to be solved by Pentwater Township. So far, the West Michigan Shoreline Regional Development Commission has not been involved. The Cedar Bluff area was, therefore, assigned Low Regional Priority. There are no plans to change this priority in the immediate future.

22. Cedar Bluff (cont.)

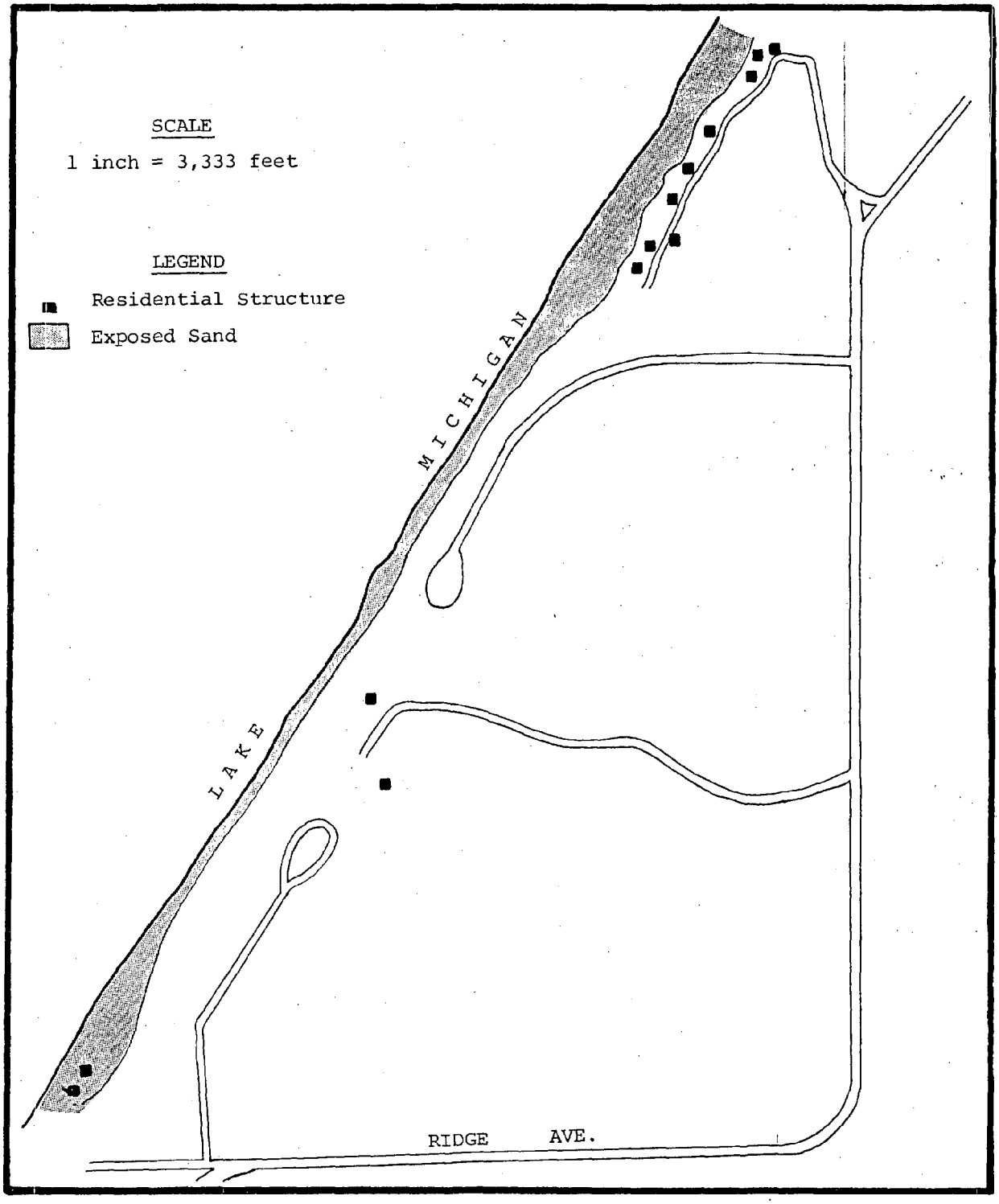
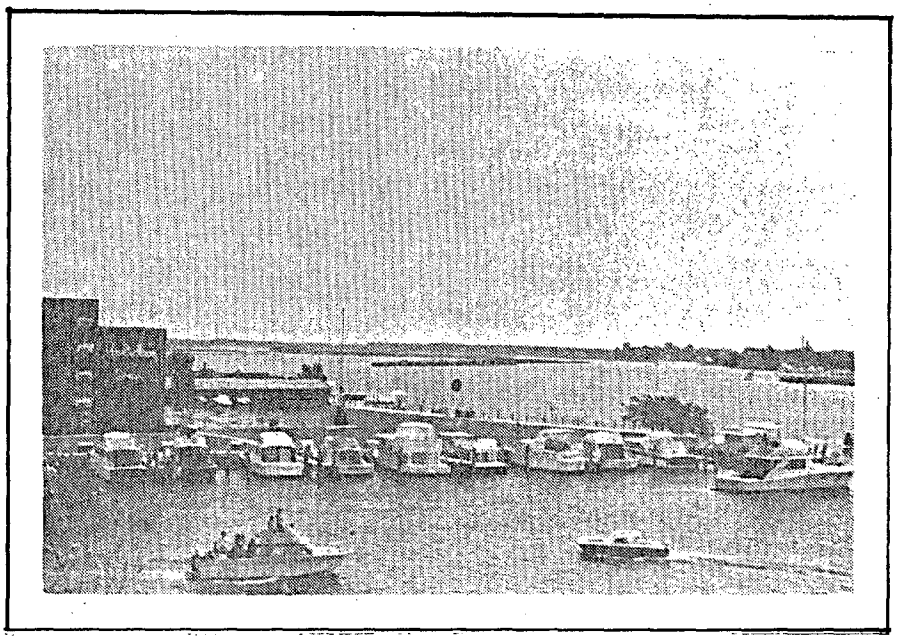


Figure III-45
Site Description
Cedar Bluff

23. GRAND RIVER, SPRING LAKE, AND ASSOCIATED WETLANDS



Holiday Inn, on the Grand River
in Spring Lake Village

Photograph III-31

FLOOD HAZARD AREA OF PARTICULAR CONCERN
ECOLOGICALLY SENSITIVE AREA OF PARTICULAR CONCERN
COASTAL LAKE AND RIVER OF PARTICULAR CONCERN

23. Grand River, Spring Lake, and Associated Wetlands

A. LOCATION: City of Ferrysburg, City of Grand Haven, Spring Lake Village, Spring Lake Township, Grand Haven Township, Ottawa County. T8N-R16W-Secs. 1-3, 10-12, 14-17, 19-23, 25-27, 29, 30, 34-36. T7N-R16W-Secs. 1-3. Fruitport Twp. & Fruitport Village, Muskegon County. T9N-R16W-Sections 35 and 36.

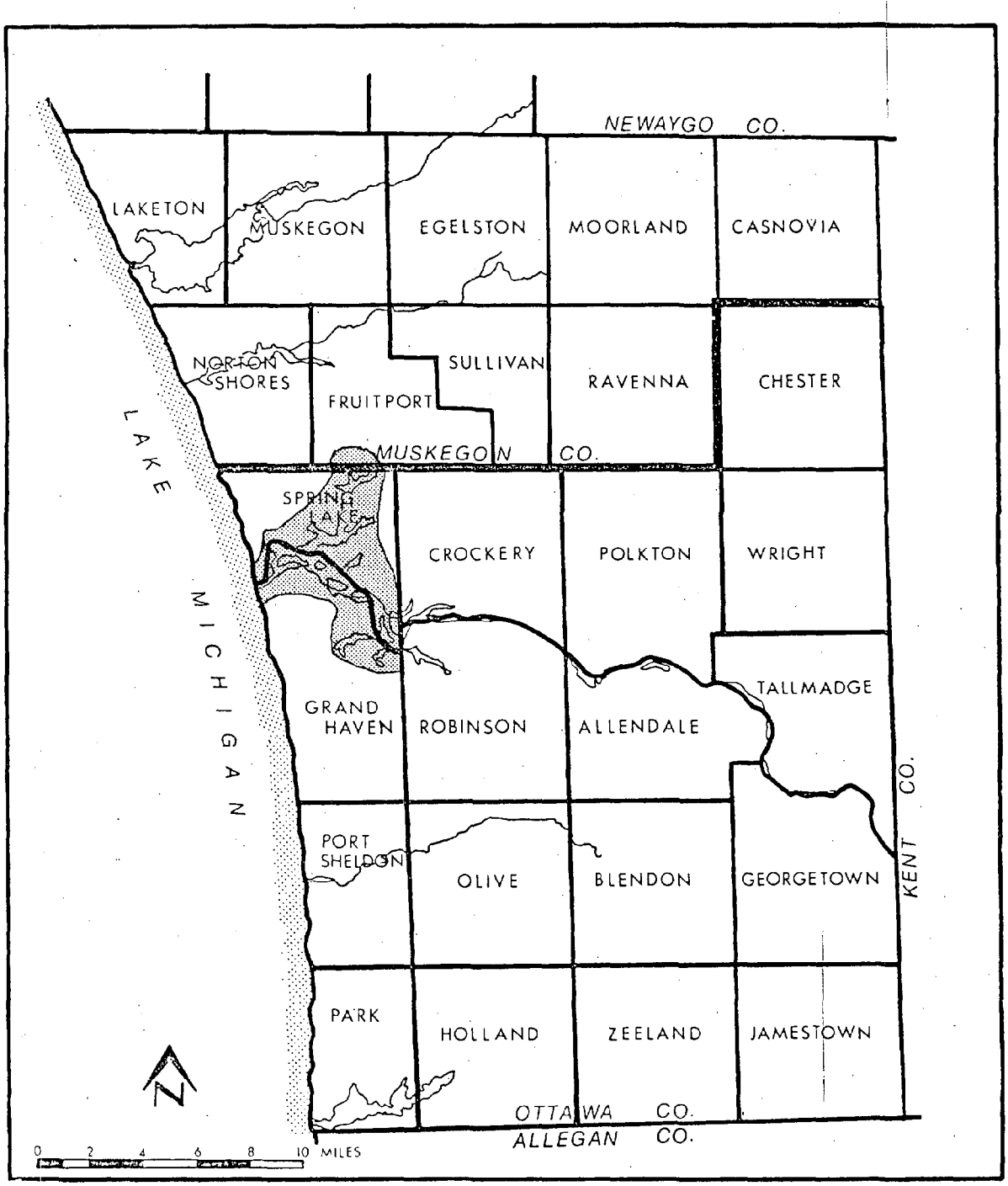


Figure III-46

General Location - Grand River, Spring Lake, and Associated Wetlands

23. Grand River, Spring Lake, and Associated Wetlands (cont.)

B. DESCRIPTION:

This particular APC is quite large. It includes that portion of the Grand River which is within Spring Lake Township. It also includes Spring Lake, Pottawattomie Bayou, Lloyd's Bayou, Petty's Bayou, Smith's Bayou, etc., all of which are in this same general vicinity. The entire area is very heavily developed with water bodies bordering the City of Ferrysburg, Spring Lake Village, the City of Grand Haven, and Fruitport Village. It is an area of very high growth and receives increasing development pressures. It is an area of critical significance regarding the viability of Region 14's economy. Figure III-47 describes the general setting and identifies important landmarks.

C. MAJOR CONCERNS:

Concerns are threefold. First, all waters included within the APC are subject to periodic flooding. The Grand River drains more land area than any other river in Michigan. The Grand River, Spring Lake, and associated bayous are also influenced by Lake Michigan and its water level fluctuations. The area's flood hazard is therefore significant.

Our second major concern centers upon the area's ecologic sensitivity. Although heavily developed, much of the wetland areas within this urban locale remain in an almost undisturbed, natural state. Many of the bayous have proven to be invaluable waterfowl nesting sites. These waters are also used as fish spawning areas. In general, much of this APC has very special wildlife values. These values are, of course, threatened by encroaching development.

Our third area of major concern deals basically with the inevitable conflicts which normally arise from the intense use of limited natural resources. The Grand River and the water bodies named are together a valuable recreation resource. The area's economy is, in fact, very directly related to a viable tourist industry. The mouth of the Grand River is also a very important commercial harbor. Readily available water supplies have also been viewed as an asset for many industrial uses.

23. Grand River, Spring Lake, and Associated Wetlands (cont.)

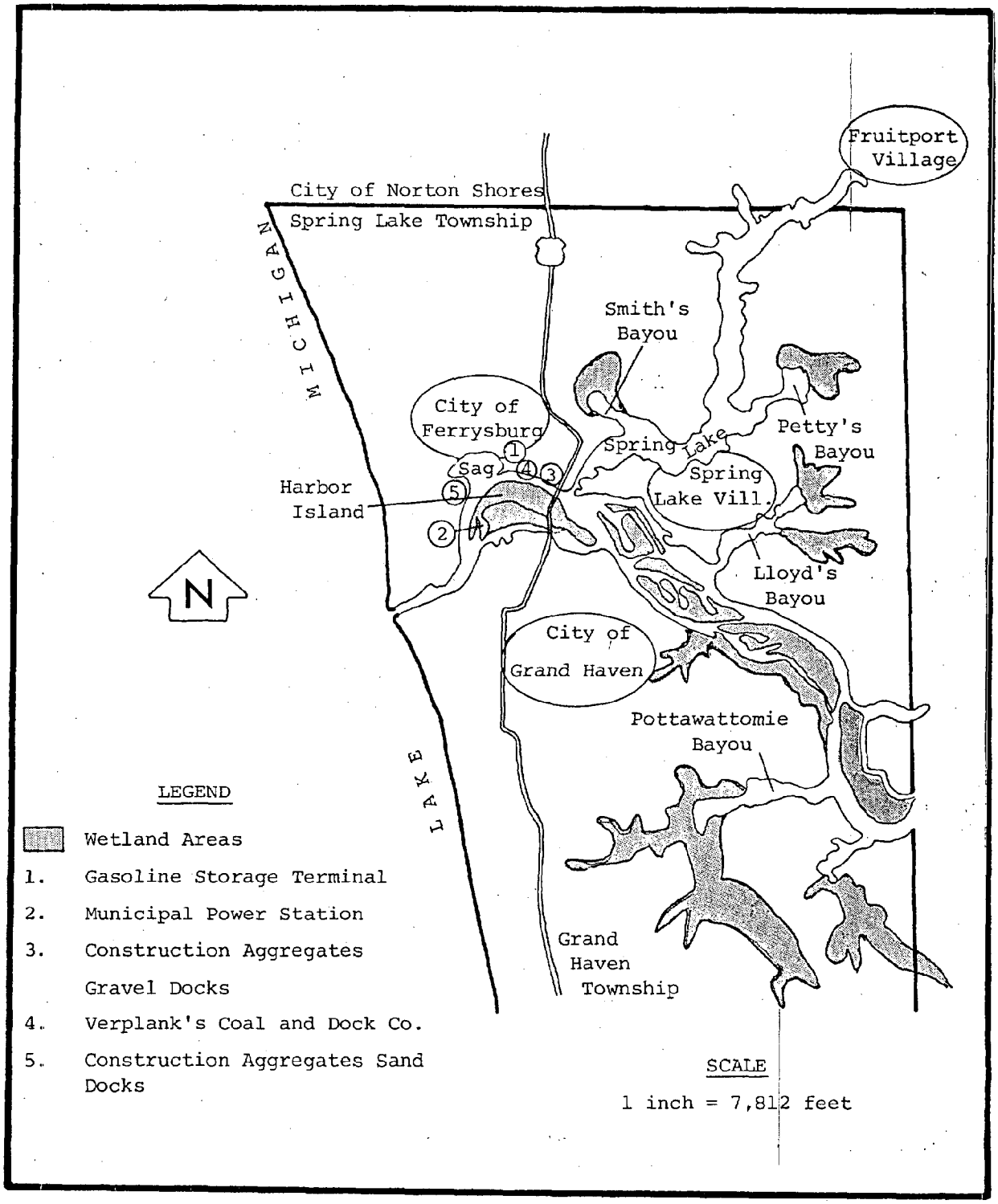


Figure III-47

Site Description

Grand River, Spring Lake, and Associated Wetlands

All these factors have led to numerous existing and potential conflicts. Residential areas sometimes resent industrial uses because of air and water pollution. A commercial harbor can become inefficient when besieged with hords of sport fishermen. Industrial, commercial, and residential uses each present very specific demands upon the Grand River, Spring Lake, and their associated wetland environments.

D. MANAGEMENT NEEDS:

The Village of Spring Lake, Spring Lake Township, the City of Ferrysburg, and the City of Grand Haven are each participating in the Federal Flood Insurance Program being administered by the U.S. Department of Housing and Urban Development. HUD has prepared a detailed Flood Insurance Study for each of the above mentioned communities. These studies identify the 100 year floodplain and divide this floodplain into separate flood hazard zones.

Before an individual property owner can qualify for subsidized insurance offered through this program, the communities involved must take certain steps to minimize flood damages to all new development. This has meant that each community must pass appropriate building codes and zoning ordinances restricting development from high hazard areas and limiting the type of development in less hazardous but flood prone sites. The Village of Spring Lake, Spring Lake Township, the City of Ferrysburg, and the City of Grand Haven have each instituted a floodplain management program. Grand Haven Township is also participating in the Flood Insurance Program but has not yet reached the same level of management as the other communities. Grand Haven Township is waiting for its Flood Insurance Study to be prepared by HUD in the near future.

The Flood Insurance Program has been an enormous help in handling one of the major concerns associated with this APC. There are, however, other factors which still require attention. These include the control of abusive development in ecologically sensitive areas, and the resolution of existing and potential use conflicts.

There have been two studies which set the stage regarding future development in the northwest Ottawa County area. The first is entitled, Grand River Basin - Comprehensive Water Resources Study. This eleven volume study was prepared by the Grand River Basin Coordinating Committee with the assistance of the U.S. Army Corps of Engineers. The Grand River Basin Coordinating Committee began its work in 1963 and ended with the publication of its last document in 1972. This study identifies the large framework needed in managing the entire Grand River Watershed. Although it provides considerable detail giving the size and character of the Grand River Basin, the study never really touches upon those specific issues related to this APC.

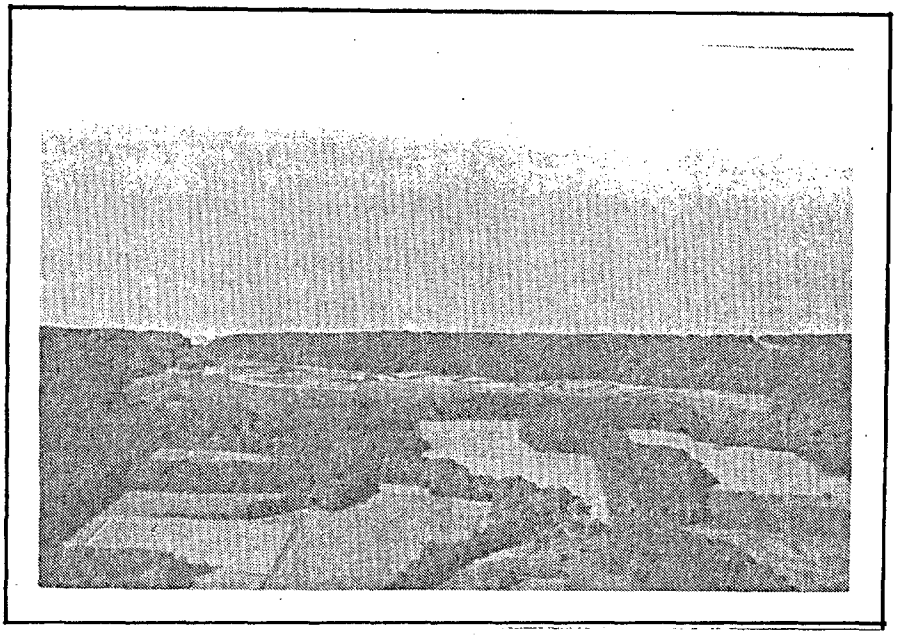
Another study worth mentioning is entitled the Comprehensive Development Planning Study - Northwest Ottawa County. This study was prepared by the West Michigan Shoreline Regional Development Commission in 1973. It was intended to identify those development issues specific to northwest Ottawa County. It presented a number of development goals and objectives for this area. The study was never intended as a detailed development strategy.

Taking the two studies just described, we have a good idea as to how this particular APC relates to the Grand River Basin and Ottawa County. We must now look at the northwest Ottawa County area a little more closely and pick up where these previous planning efforts have left off. We need to prepare a detailed development strategy which ties together the various communities which are a part of this APC.

E. APC STATUS:

The Grand River, Spring Lake, and their associated bayous and wetlands were recognized as a very important APC. This area was initially assigned High Regional Priority. Nothing has happened since the area was originally considered that would cause this priority to change. This APC remains a very critical concern.

24. FLOWER CREEK



Scenic Beauty of the Flower Creek Watershed

Photograph III-32

FLOOD HAZARD AREA OF PARTICULAR CONCERN
NATURAL AREA OF PARTICULAR CONCERN

24. Flower Creek

A. LOCATION: White River Township, Muskegon County. T12N-R18W-Sections 3 and 4. Clay Banks Township, Oceana County. T13N-R18W-Sections 26, 27, 34 and 35.

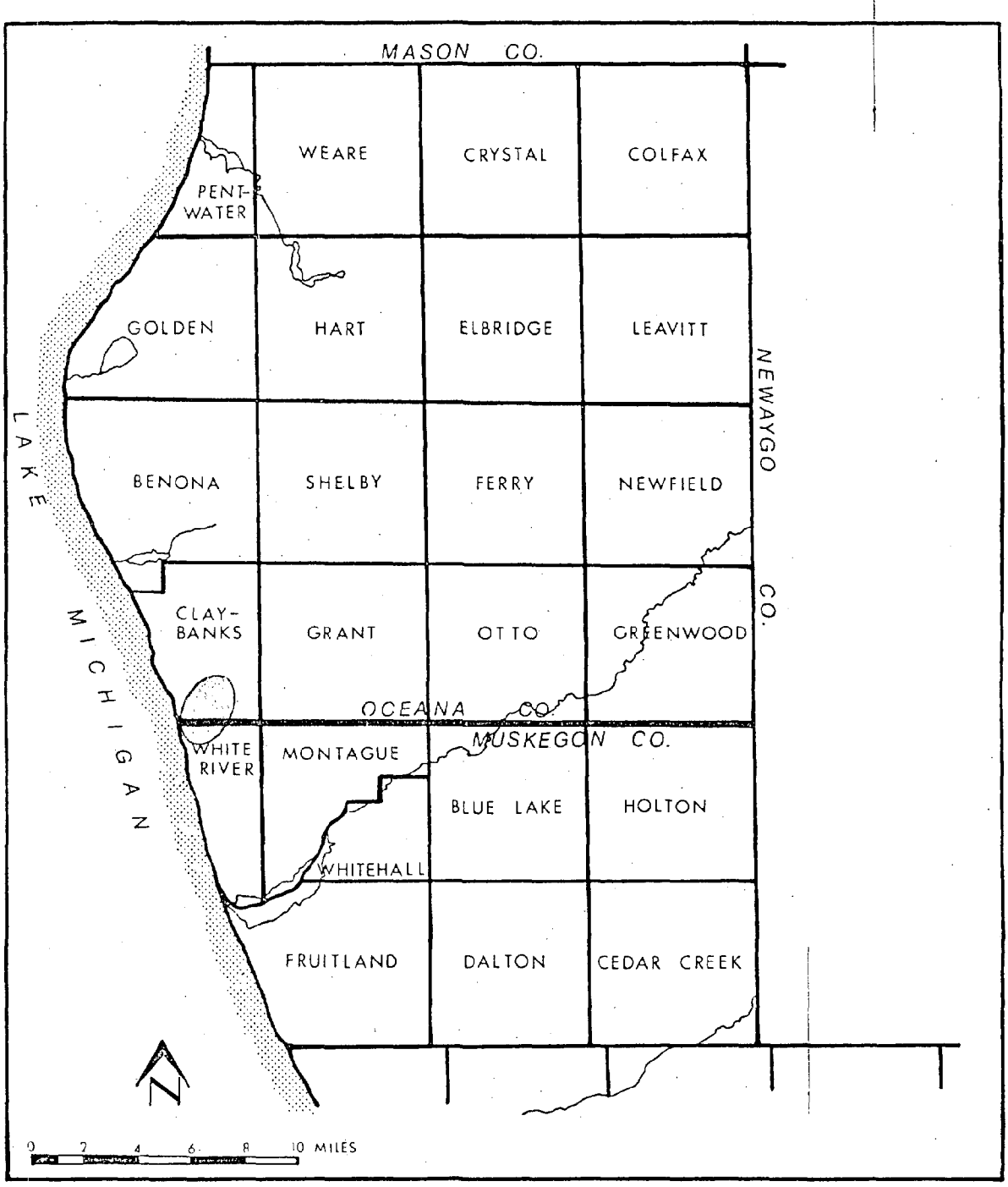


Figure III-48

General Location - Flower Creek

24. Flower Creek (cont.)

B. DESCRIPTION:

The Flower Creek Watershed is shared by Muskegon and Oceana Counties. The total watershed is nearly 23 square miles (14,946 acres) in area. Approximately 250 acres within the watershed would be classified as wetlands. The drainage network itself is over 15.5 miles of streams and channels with Flower Creek draining directly into Lake Michigan. Lakes in the area include Jakes Lake (15 acres) and Park Lake (27 acres).

Land use within the Flower Creek Watershed is predominately agricultural. Residential development is, for the most part, farm oriented. Seasonal and vacation homes are present all along the Lake Michigan shore. There are no discharge permits for the area and no known point source contributors of pollutants to the surface waters.

The Flower Creek Area is, without a doubt, one of the most scenic landscapes found within the region. Within the area exists extensive dune and topographic development. The creek and its associated wetlands have enormous ecological values. The same attributes which give the area its rural charm will inevitably attract more and more residential development.

Figure III-49 will describe the Flower Creek vicinity.

C. MAJOR CONCERNS:

Flower Creek has been categorized as a Flood Hazard Area of Particular Concern. The U.S. Department of Housing and Urban Development has prepared preliminary maps which identify flood prone areas in both Clay Banks and White River Townships. The maps show a rather confined floodplain widening somewhat toward the mouth of Flower Creek where it enters Lake Michigan.

Flower Creek is also recognized as a Natural Area. The Flower Creek area is very scenic and has important wildlife value. Encroaching residential development can have truly devastating consequences for such a small watershed.

24. Flower Creek (cont.)

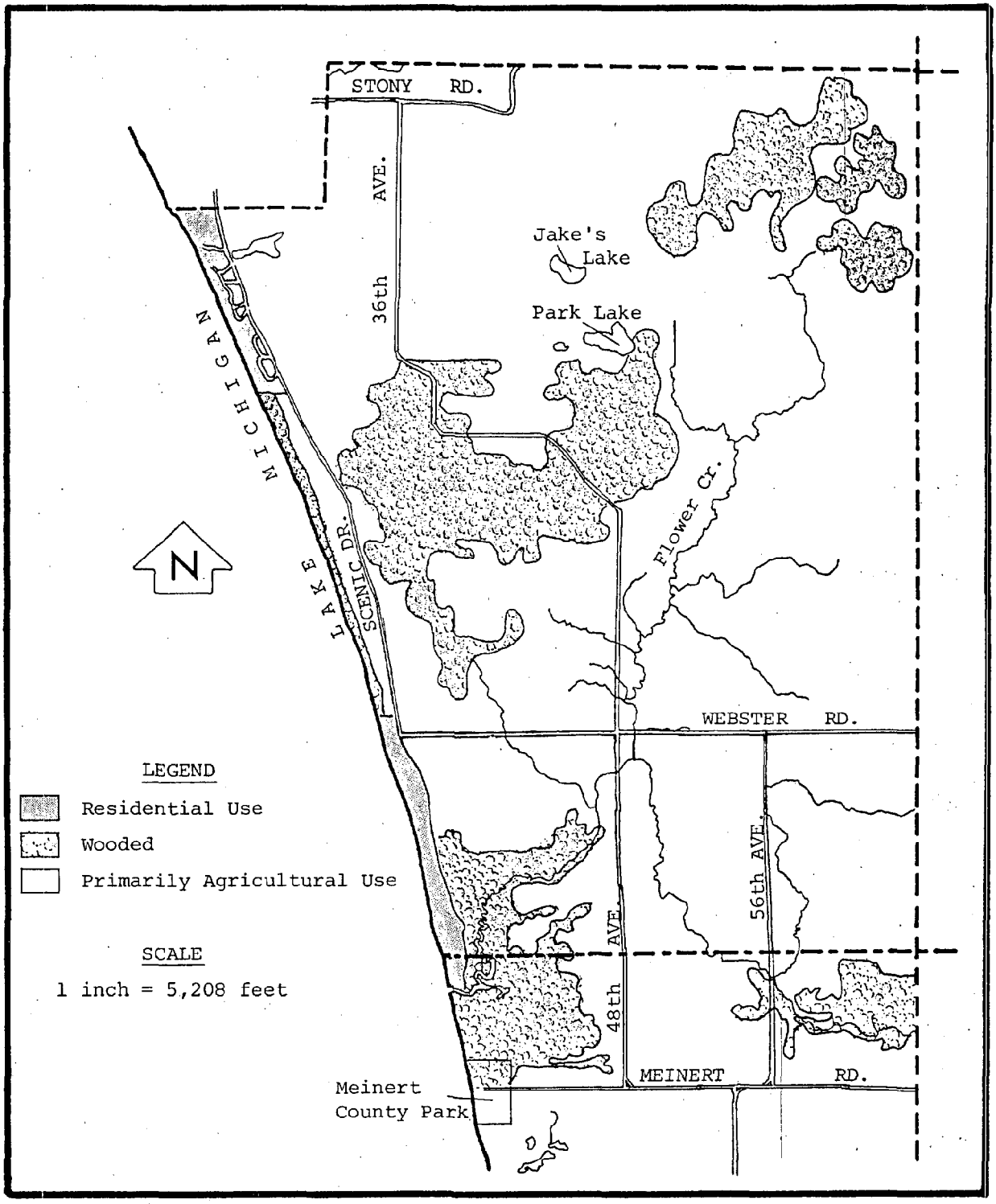


Figure III-49
Site Description
Flower Creek

24. Flower Creek (cont.)

D. MANAGEMENT NEEDS:

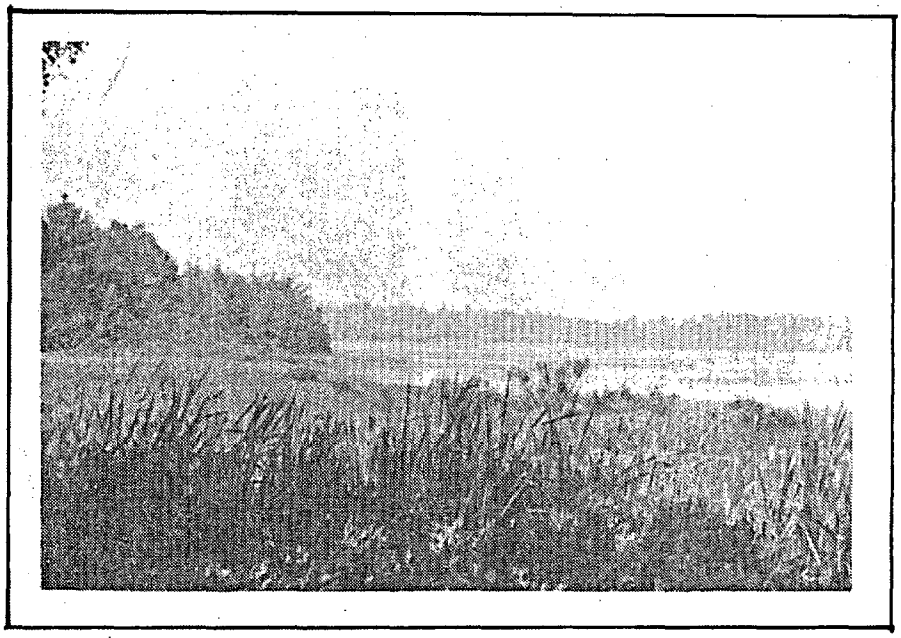
Although identified as a Flood Hazard Area, Flower Creek flooding problems are considered relatively minor. Management attentions should not neglect flood concerns, but it may be just as important to consider the maintenance of wildlife habitats and scenic beauty. The preservation of existing amenities would appear a worthwhile planning goal.

The Flower Creek APC complements the Flower Creek Dunes APC, which will be discussed later. Proposed planning efforts should consider both APCs as well as Meinert Park, a Muskegon County owned and operated park which is located within the same general vicinity.

E. APC STATUS:

The Flower Creek APC was originally assigned Medium Regional Priority. This APC has been reduced to Low Regional Priority given the lack of any real planning urgency.

25. LITTLE BLACK LAKE



Little Black Lake - An Important Wildlife Habitat

Photograph III-33

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE OF PARTICULAR CONCERN

25. Little Black Lake

A. LOCATION: City of Norton Shores, Muskegon County. T9N-R16W-Sections 31 and 32. Spring Lake Township, Ottawa County. T8N-R16W-Sections 5 and 6.

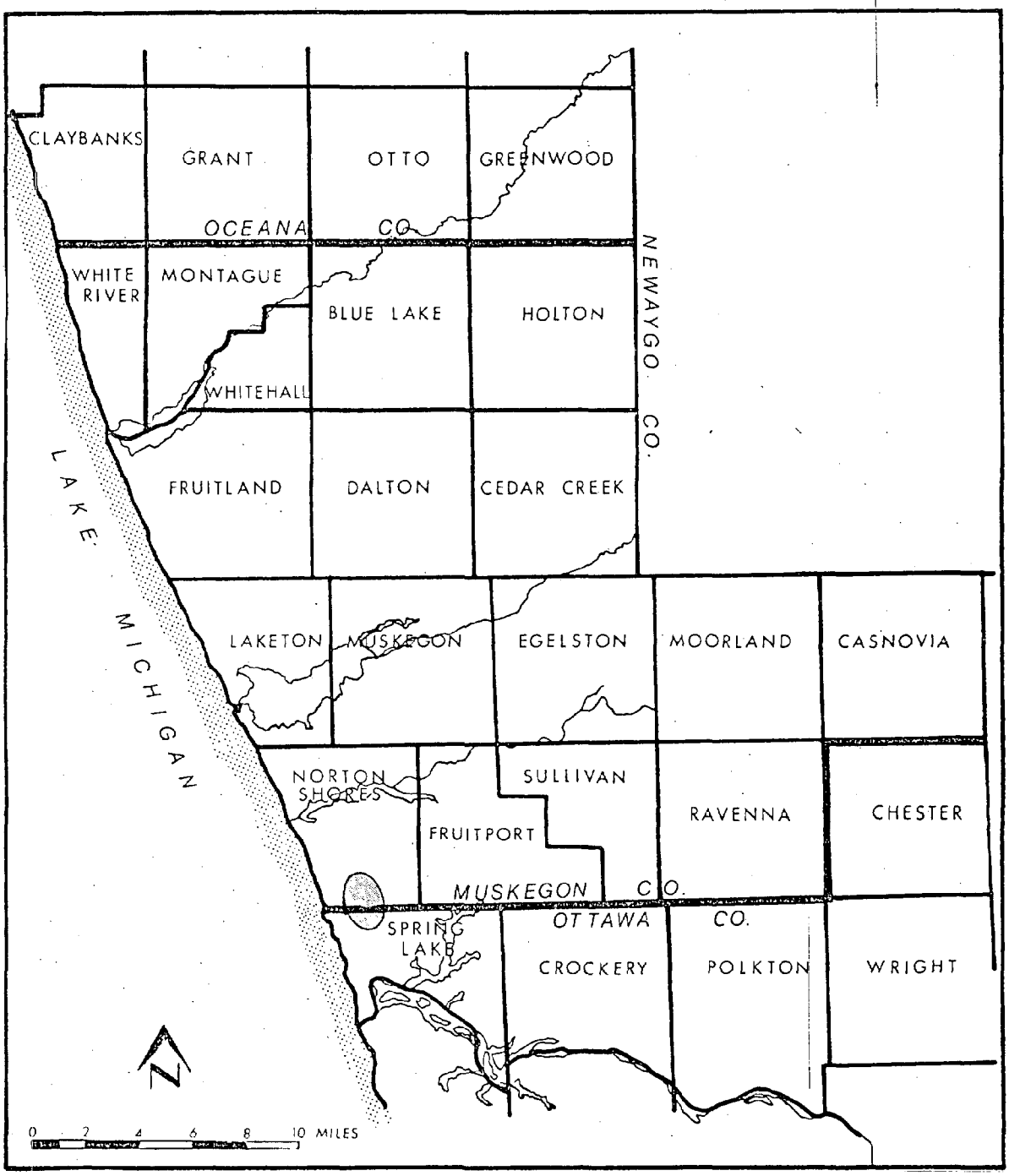


Figure III-50
General Location - Little Black Lake

25. Little Black Lake (cont.)

B. DESCRIPTION:

The Little Black Lake Drainage Area is located in the southwest corner of Muskegon County and the northwest corner of Ottawa County. The total basin is only 13 square miles (8,095 acres). Of this area, approximately 62 acres is classified as wetlands. The inlet and outlet to Little Black Lake are together less than 4 miles long. Little Black Lake, the only lake in the identified basin, has an area of 223 acres.

The Little Black Lake Area is primarily undeveloped with the single most dominant use being low density residential. The Black Lake Area lies adjacent to the P.J. Hoffmaster State Park. Little Black Lake and its surrounding environments represent significant wildlife habitats.

Figure III-51 shows the Little Black Lake area and existing land uses.

C. MAJOR CONCERNS:

The Little Black Lake Area is recognized as an APC because of its Flood Hazard and its potentially conflicting use. Each of these concerns will be discussed individually beginning with Flood Hazard problems.

Both the City of Norton Shores and Spring Lake Township participate in the Federal Flood Insurance Program. The U.S. Department of Housing and Urban Development has prepared a Flood Insurance Study for both communities. These studies define Little Black Lake's 100 year floodplain and identify associated flood risk zones. Flood prone areas are relatively extensive and are, more or less, an expression of high groundwater conditions. Both communities must limit development in these identified flood prone areas.

Limited evidence suggests that Little Black Lake currently meets all "Swimable and Fishable" water quality goals. The majority of land which at present surrounds Little Black Lake consists mainly of large undeveloped tracts. If any of these areas were to be developed in any

25. Little Black Lake (cont.)

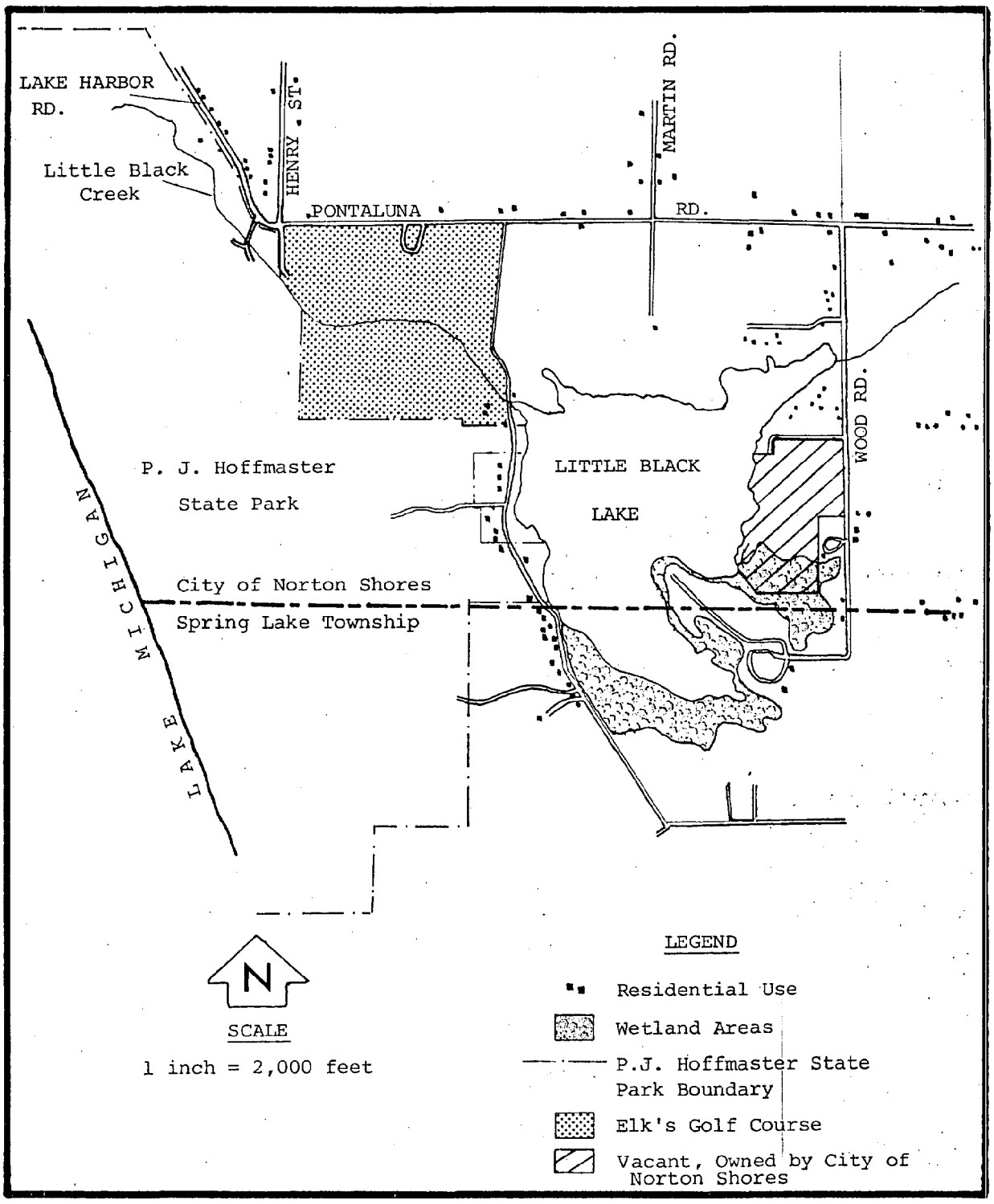


Figure III-52
Site Description
Little Black Lake

significant way, Little Black Lake might experience serious water quality problems. Considerable thought should be given to any development which intends to locate within the Little Black Lake vicinity.

D. MANAGEMENT NEEDS:

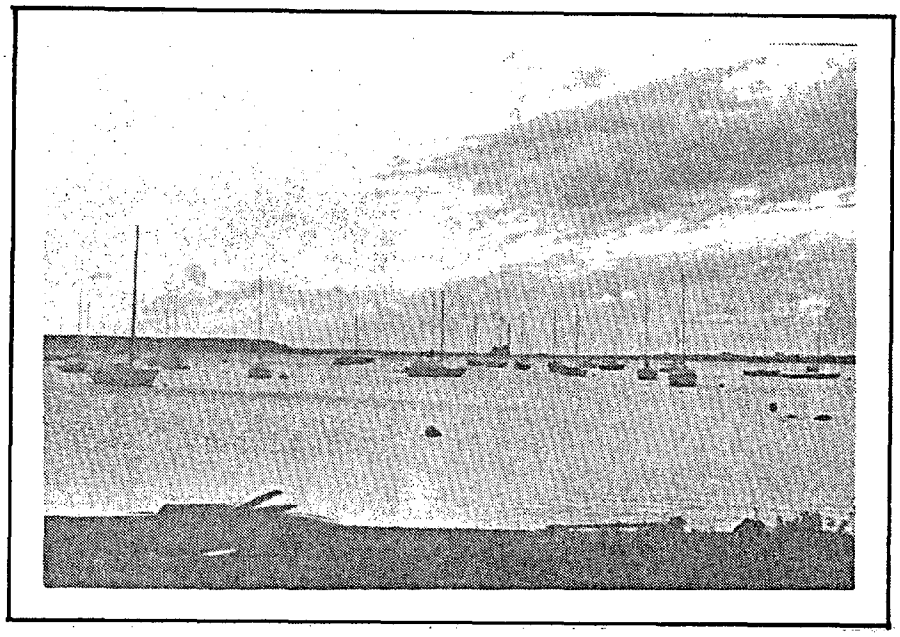
HUD has provided both the City of Norton Shores and Spring Lake Township with the technical information necessary for each community to implement a floodplain management program. Both communities have taken appropriate steps to develop such programs. Property owners are, therefore, eligible for subsidized flood insurance.

The City of Norton Shores will complete its Master Plan within the next two years. This plan will undoubtedly consider the Little Black Lake Area. It has already been suggested that the area be tied in with the nearby P. J. Hoffmaster State Park and thus be preserved as a natural recreation site. Whether or not preservation schemes win out over development remains to be seen. With careful planning, development might occur within the Little Black Lake Area without unduly jepordizing the area's unique wildlife and aesthetic character.

E. APC STATUS:

The Little Black Lake APC was originally assigned High Regional Priority in support of floodplain management efforts. Now that a Floodplain Management Program is being administered by both Spring Lake Township and the City of Norton Shores, flood hazards are less of a concern. The eventual development of the Little Black Lake area still remains of critical interest. The Little Black Lake APC is assigned Medium Regional Priority in support of Norton Shores' Master Plan.

26. MUSKEGON LAKE, BEAR LAKE, AND THE MUSKEGON RIVER



Muskegon Lake - An Important Recreational Resource

Photograph III-34

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE & RIVER OF PARTICULAR CONCERN
URBAN AREA OF PARTICULAR CONCERN

26. Muskegon Lake, Bear Lake, and the Muskegon River

A. LOCATION: City of Muskegon, City of Norton Shores, and Laketon Twp., Muskegon County. T10N-R17W-Sections 12-14, 21-28, 34-36. T10N-R16W-Sections 1-3, 5-22.

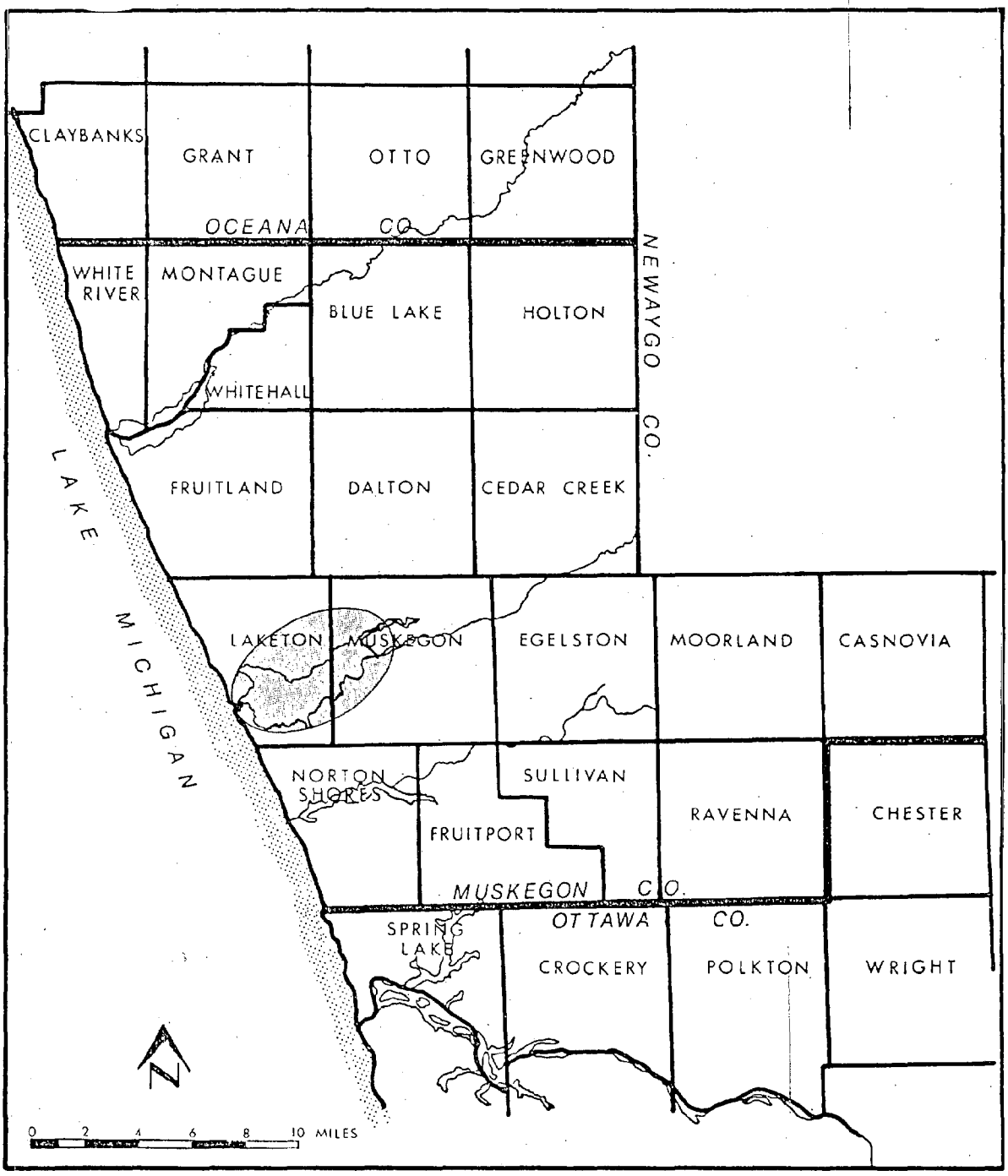


Figure III-52

General Location - Muskegon Lake, Bear Lake, and the Muskegon River

26. Muskegon Lake, Bear Lake, and the Muskegon River (cont.)

B. DESCRIPTION:

The Muskegon River is the longest river in Michigan. Only a portion of the Muskegon River Basin lies within Muskegon County. This portion contains numerous lakes and tributary streams. Only Muskegon Lake (4,150 acres), Bear Lake (415 acres), and a very small part of the Muskegon River fall within the Region 14 Coastal Zone.

Land use within this part of the Muskegon River Basin is quite varied. Urban development is most significant as much of the City of Muskegon and all of the City of North Muskegon fall within this drainage area. Muskegon Lake is surrounded by residential, commercial, and considerable industrial land use. Bear Lake is almost entirely residential oriented. Both lakes have several public access sites and recreational facilities.

Figure III-53 examines existing land use patterns and identifies significant landmarks.

C. MAJOR CONCERNS:

The City of Muskegon, the City of North Muskegon, and Laketon Township each participate in the Federal Flood Insurance Program. The U.S. Department of Housing and Urban Development has prepared a Flood Insurance Study for each community. These studies identify a 100 year floodplain for Muskegon Lake, Bear Lake, and the Muskegon River. Flood prone areas are not as extensive as you might have thought. The most serious flooding problems occur further up the river and in the larger tributaries.

Although floodplain management is definitely a concern, the kind of lakefront development and associated lakeshore uses seems a far more critical matter. Muskegon Lake's shoreline has historically been industrially oriented. Industrial uses have, of course, had a very serious effect upon water quality. Now that the Muskegon County Wastewater Management System has done so much to improve Muskegon Lake's quality, the lake is now viewed as a tremendous recreation/tourism attraction. Muskegon Lake is, in fact, a key element in the City's plans

26. Muskegon Lake, Bear Lake, and the Muskegon River (cont.)

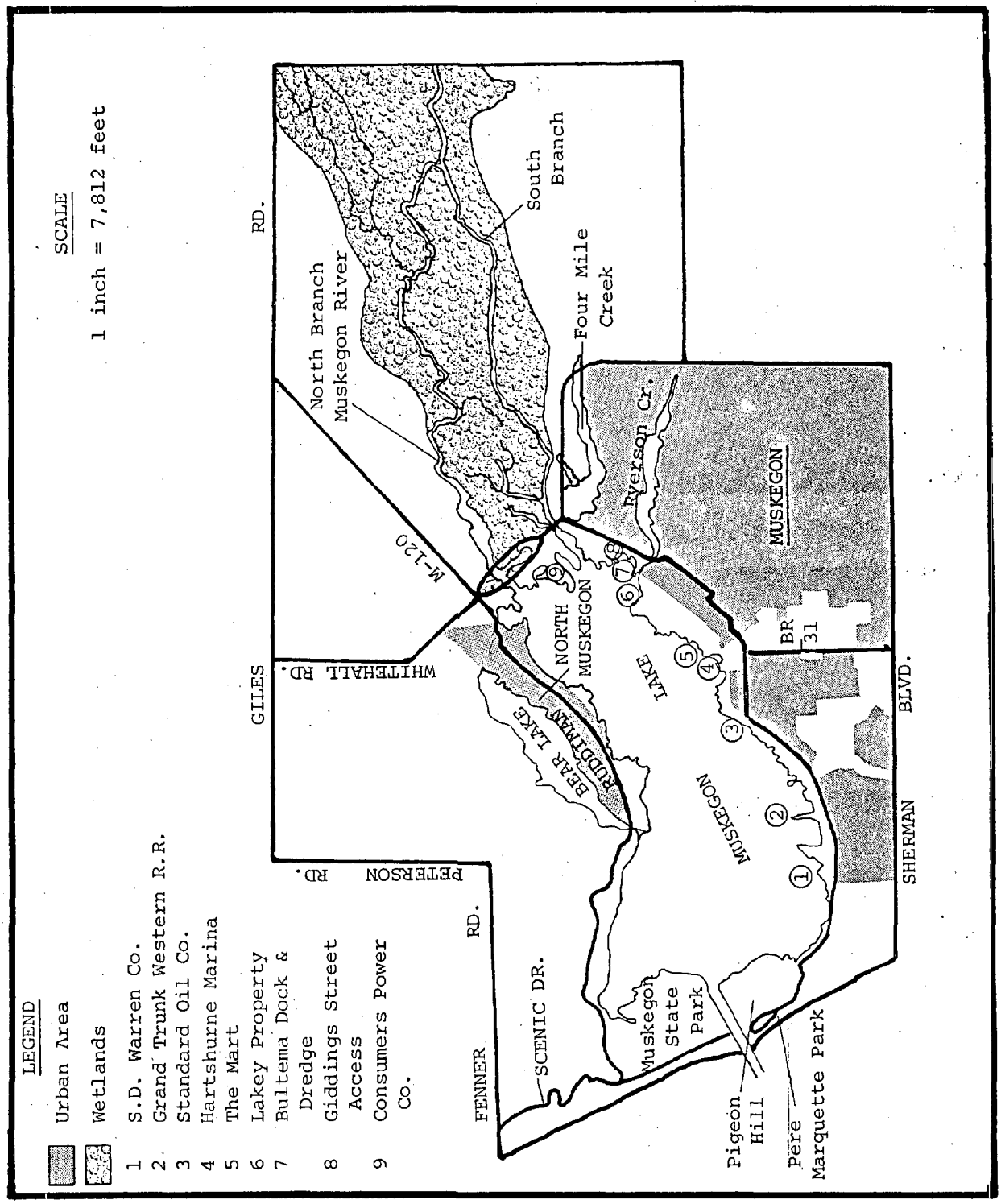


Figure III-53

Site Description

Muskegon Lake, Bear Lake, and the Muskegon River

to redevelop and revitalize its downtown area. Existing uses often conflict with proposed plans. We, therefore, need to organize a systematic development strategy.

D. MANAGEMENT NEEDS:

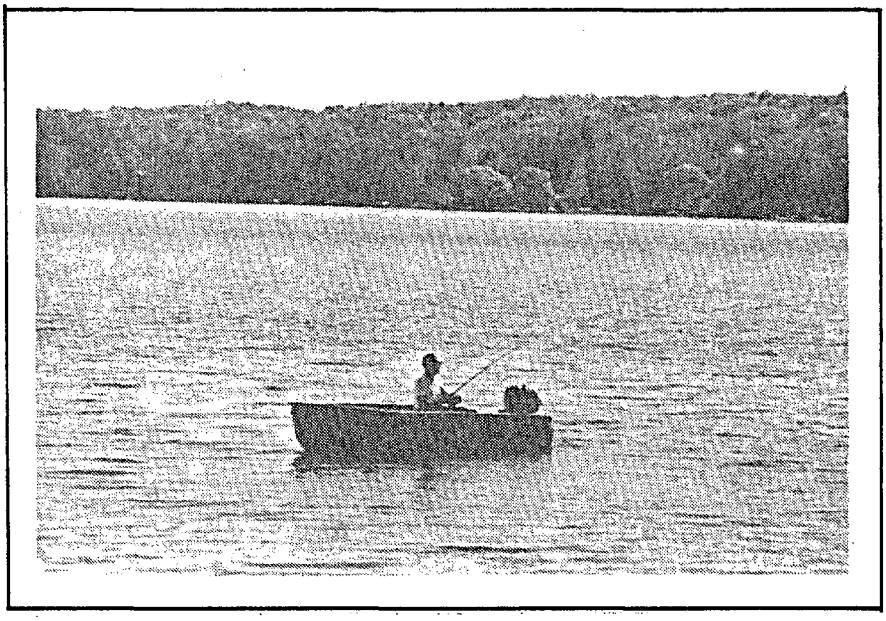
The City of Muskegon, the City of North Muskegon, and Laketon Township must each comply with requirements imposed by the Federal Flood Insurance Program if their citizens are to receive subsidized Flood Insurance. The communities have adopted the necessary ordinances and each has established a floodplain management program.

There have been several studies performed and many suggestions made regarding development concepts for this area. The most recent, and perhaps the most significant, was entitled, Muskegon Lake, A Study of Opportunities. This study was prepared by Leo Jakobson, Harold M. Mayer, John R. Sheaffer, and Jack Witkowsky for the Muskegon County Metropolitan Planning Commission, the City of Muskegon, the City of North Muskegon, and Save Our Lakes Committee, Inc. The document was published in June 1974. It articulates a basic developmental philosophy which seeks to capitalize on water quality improvements and recreation/tourism potentials now offered by Muskegon Lake. The City of Muskegon, with the West Michigan Shoreline Regional Development Commission, will carry the concepts envisioned in the above study to their next step. The City and Regional Commission will prepare a Development Strategy which will first focus upon three specific elements: 1) the redevelopment of downtown Muskegon, 2) the reuse of Pigeon Hill, and 3) the feasibility and impacts of a Muskegon/Milwaukee Sea-Bridge for truck-trailers.

E. APC STATUS:

The Muskegon Lake, Bear Lake, and Muskegon River APC was originally assigned High Regional Priority. Flood hazards are less of a concern now as each community has a floodplain management program. The implementation of redevelopment concepts in the Muskegon and North Muskegon areas remains a paramount interest. This APC retains a High Regional Priority status.

27. DUCK LAKE AND MUSKRAT LAKE



Duck Lake - Site of Future State Park and Existing Recreation Resource

Photograph III-35

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKES OF PARTICULAR CONCERN
ECOLOGICALLY SENSITIVE AREAS OF PARTICULAR CONCERN

27. Duck Lake and Muskrat Lake

A. LOCATION: Fruitland Township, Muskegon County. T11N-R18W-Sections 24 and 25.
T11N-R17W-Sections 18, 19, and 30.

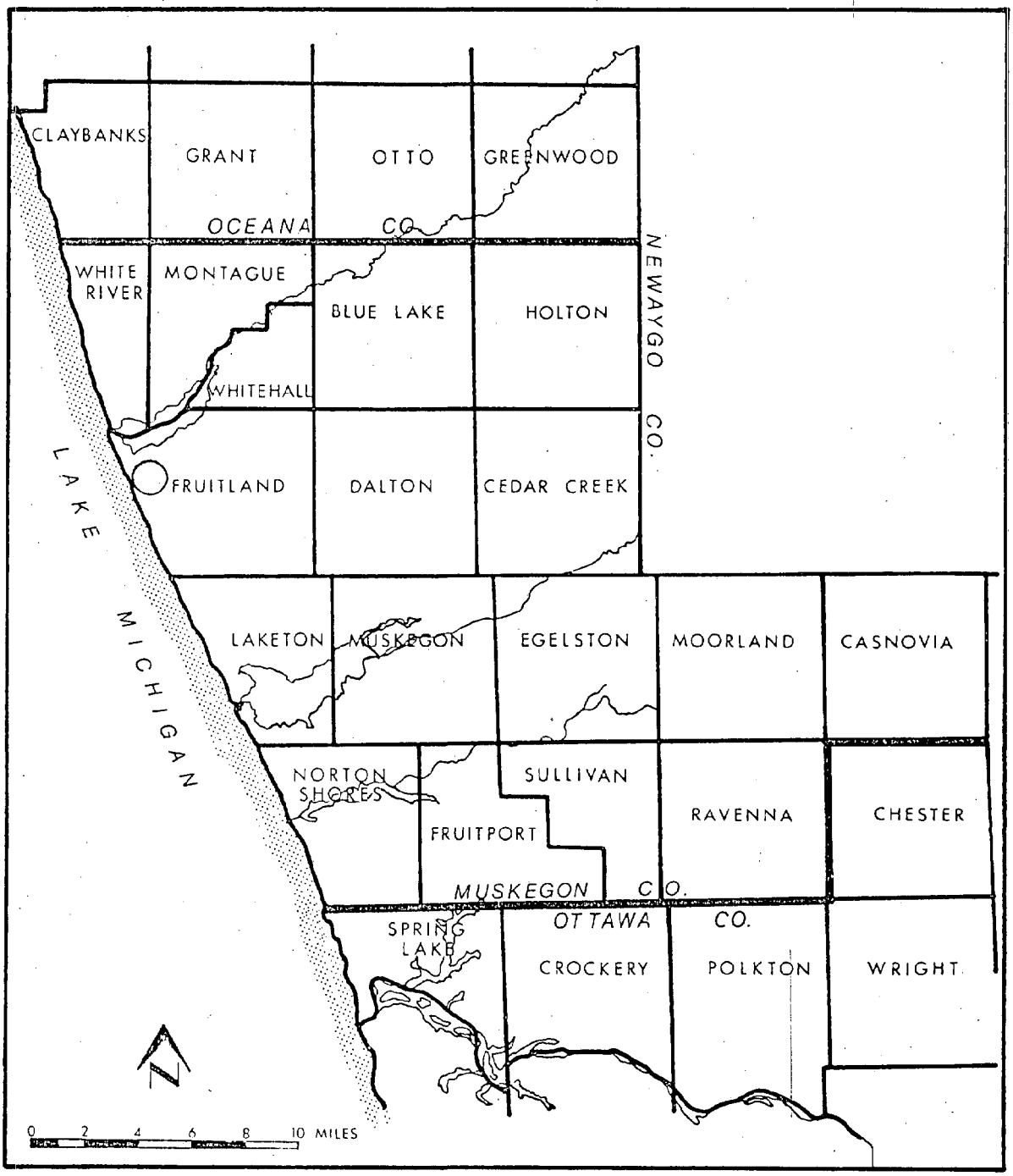


Figure III-54

General Location - Duck Lake and Muskrat Lake

27. Duck Lake and Muskrat Lake (cont.)

B. DESCRIPTION:

The Duck Lake drainage basin lies completely within Muskegon County, and much of it falls inside the Region 14 Coastal Zone. The basin includes Duck Lake (112 acres), Muskrat Lake (25 acres), Duck Creek (94 miles) and numerous unnamed creeks of intermittent flow. The total basin is approximately 30 square miles (18,700 acres). Within this basin there are approximately 530 acres which would be classified as wetlands.

Land use within this basin is almost entirely low density residential with most of the land still undeveloped. A new State Park is planned along the northern shore at Duck Lake, on land which was previously developed for use by the Boy Scouts of America. Agricultural lands are minimal. Water quality appears good.

Both Duck Lake and Muskrat Lake pose significant recreation opportunities. Duck Lake can apparently handle more active kinds of recreation like boating, camping, etc., while Muskrat Lake is definitely an area of ecologic sensitivity. Muskrat Lake is known for its attraction of migratory waterfowl, Sandhill Crane, and heron. The lake also holds a sizable population of bass and panfish.

Figure III-55 shows land use arrangements surrounding both Duck Lake and Muskrat Lake.

C. MAJOR CONCERNS:

The Duck Lake and Muskrat Lake area is recognized as a flood prone area. Fruitland Township is participating in the Federal Flood Insurance Program, but has as yet received only preliminary Flood Hazard Boundry Maps from the U.S. Department of Housing and Urban Development. HUD will prepare a detailed Flood Insurance Study sometime in the near future.

Aside from the flood hazards mentioned above, we are also concerned regarding the development of the Duck Lake State Park and the preservation of Muskrat Lake.

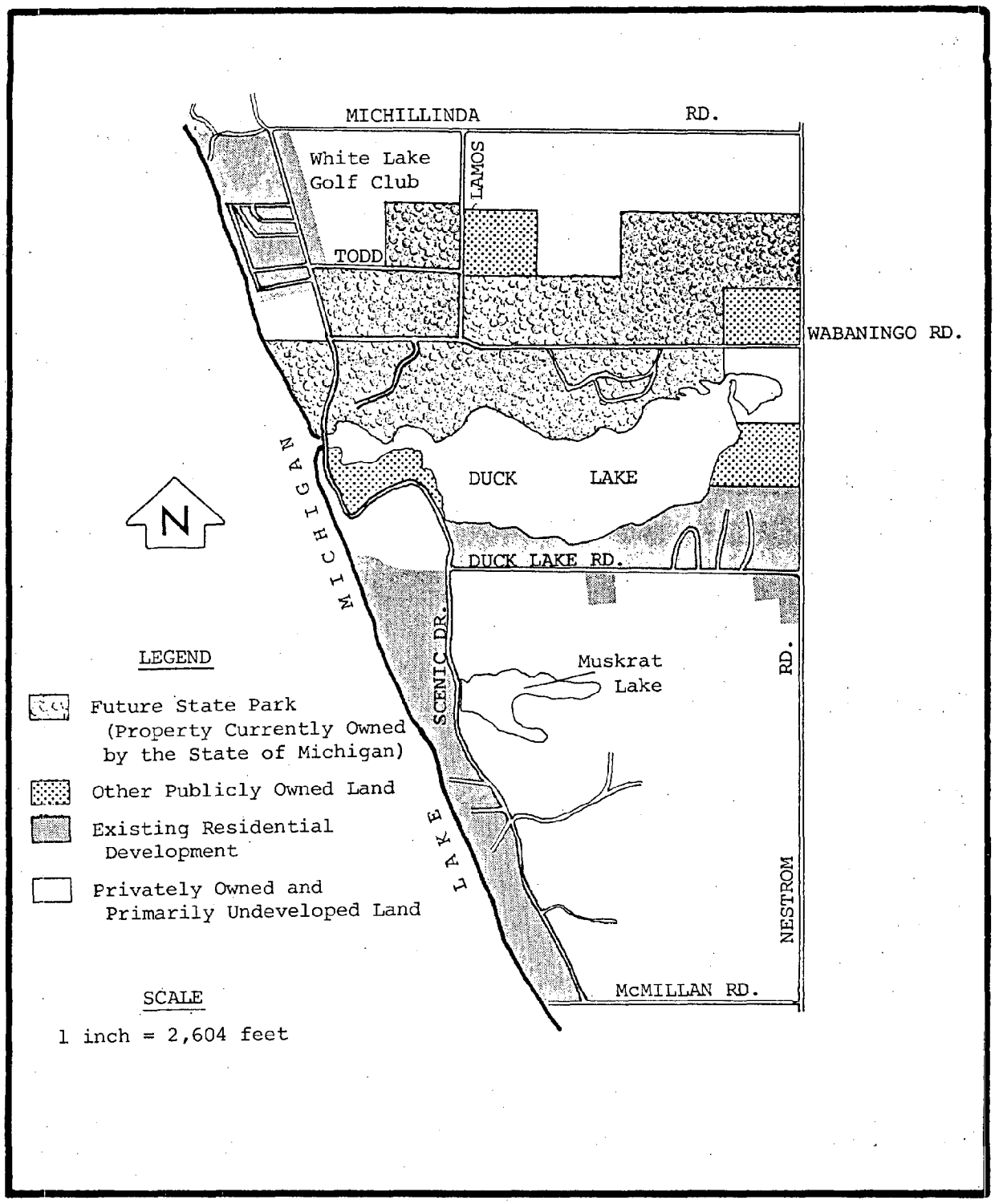


Figure III-55
Site Description
Duck Lake and Muskrat Lake

27. Duck Lake and Muskrat Lake (cont.)

Both areas have enormous recreation value, but each also has its environmental limitations regarding facility development.

D. MANAGEMENT NEEDS:

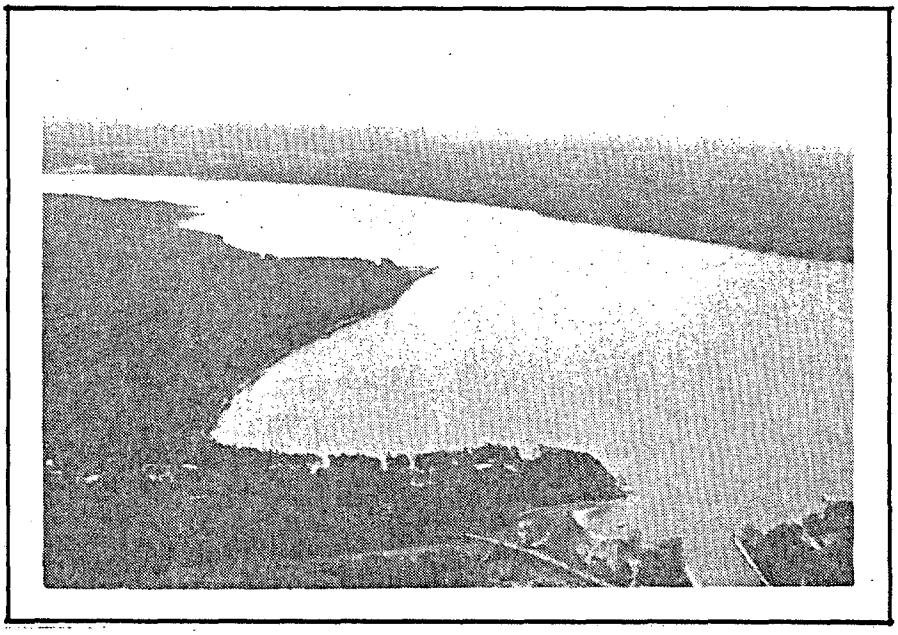
HUD will sooner or later provide Fruitland Township with its detailed Flood Insurance Study and, therefore, make available the technical information needed to implement a floodplain management program. Fruitland Township shows every indication that it will establish such a program.

Muskegon County's Shorelands Policies Plan identifies the Duck Lake Area as one of six development nodes. In 1971, Mr. Leo Jakobson again looked at the Duck Lake/Muskrat Lake area and provided a more detailed conceptualization of proposed development in a report entitled, Dulake Dunes - A Plan for Development. Mr. Jakobson proposes that Muskrat Lake be set aside as a Conservancy Zone. Duck Lake shoreline is to be futher developed for recreation and residential use. Even though the concept envisioned seems appropriate, it has never been implemented. We apparently need to formulate a scheduled development program.

E. APC STATUS

The Duck Lake and Muskrat Lake APC was originally assigned Low Regional Priority. As time goes by, it seems increasingly evident that this area will someday be developed. This development is eminent, given that the northern shore of Duck Lake will become a State Park. The West Michigan Shoreline Regional Development Commission has therefore assigned this APC Medium Regional Priority.

28. WHITE LAKE AND WHITE RIVER



Aerial View of White Lake

Photograph III-36

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE AND RIVER OF PARTICULAR CONCERN

28. White Lake and White River

A. LOCATION: Fruitland Township, White River Twp., Montague Twp., City of Whitehall, City of Montauge, Muskegon County. T11N-R18W-Secs. 2, 11, and 12. T11N-R17W-Secs. 4-7. T12N-R17W-Secs. 10-16, 20-27, 28-34.

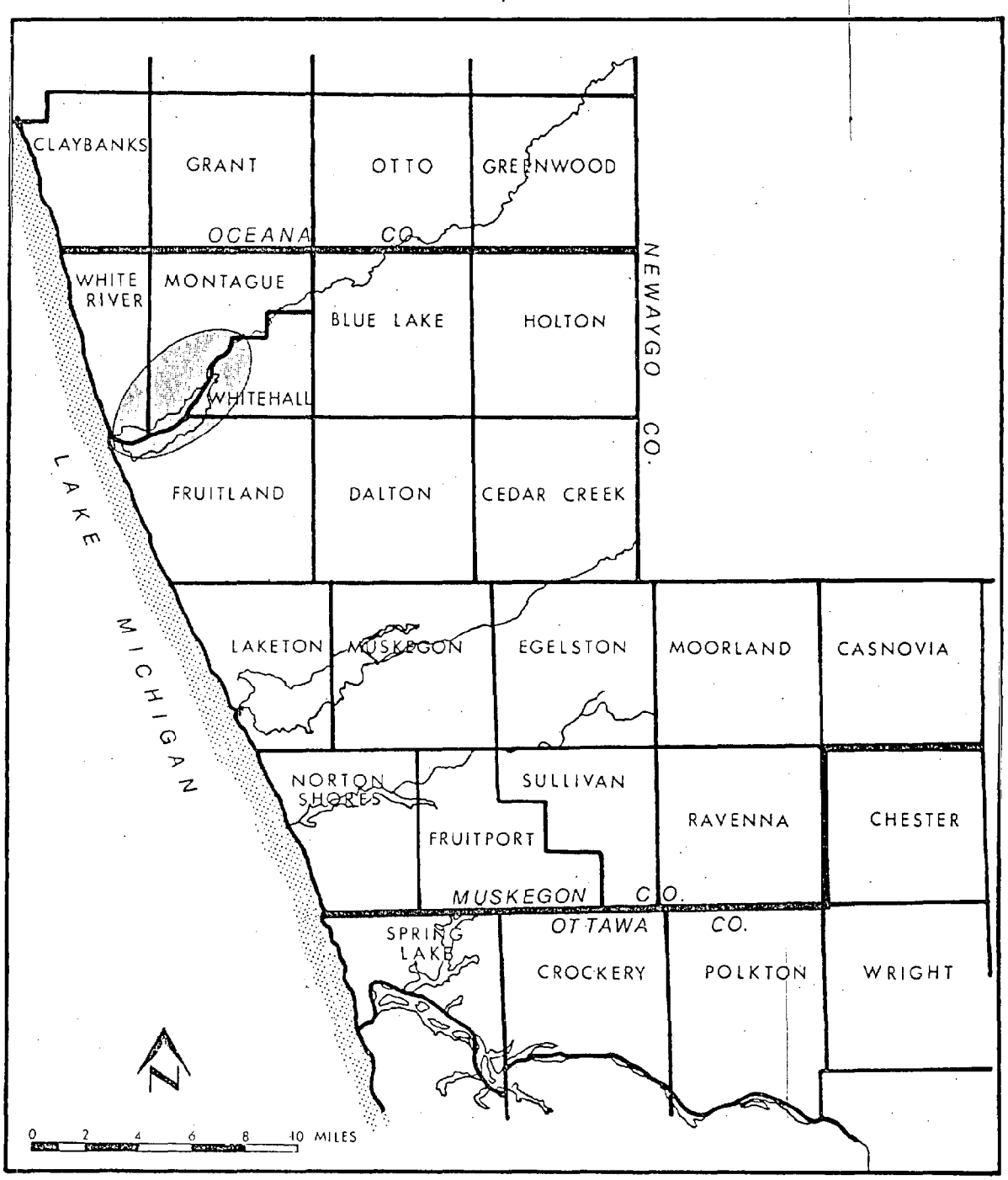


Figure III-56

General Location - White Lake and White River

28. White Lake and White River (cont.)

B. DESCRIPTION:

The White River Drainage Basin extends from its terminus, at White Lake, into Oceana and Newaygo Counties. The Muskegon and Oceana portion is approximately 317 square miles (203,014 acres). Of this area, 17.5 square miles (11,196 acres) is classified as wetlands. There are well over 100 miles of streams which transport water through the basin. The area included several lakes, the largest of which is White Lake (2,571 acres).

White Lake's shoreline is very urban in nature as it shares both the City of Whitehall and the City of Montague. The northern shoreline of White Lake contains a large industrial complex occupied by Hooker Chemicals and Plastics Corporation, and E. I. DuPont deNemours, Inc. There are several public access points and recreation areas along the lakeshore. Nutrient loadings to White Lake are significant, but pollution of waters with complex organic chemicals is probably much more serious.

Refer to Figure III-57 for a more detailed description regarding the White Lake area and its shoreline uses.

C. MAJOR CONCERNS:

Fruitland Township, White River Township, the City of Whitehall, and the City of Montague are each participating in the Federal Flood Insurance Program. HUD has provided these communities with preliminary Flood Hazard Boundry Maps. HUD has prepared the more detailed Flood Insurance Study for the City of Montague. Floodplain management remains an important concern.

Another concern centers upon White Lake's water quality problems. We know that this lake has been seriously polluted with some very toxic and dangerous substances. Whether or not this pollution will have a long term effect upon White Lake's quality has not really been determined. We know that we must prevent further contamination. The Michigan Department of Natural Resources has in recent years taken very specific steps to curb pollution sources. We still must determine the consequences

28. White Lake and White River (cont.)

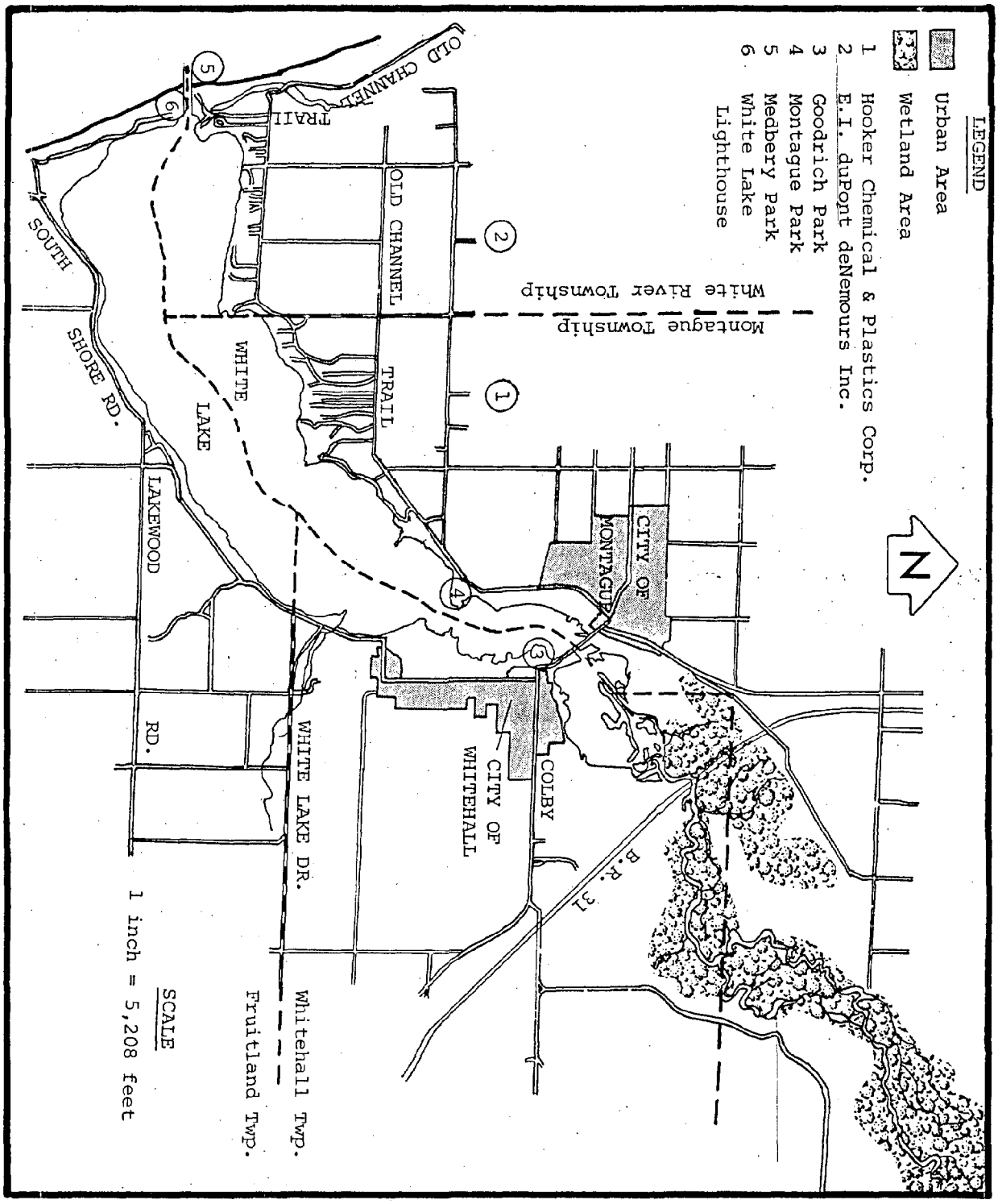


Figure III-57
Site Description
White Lake and White River

of past pollution and then formulate a rehabilitation scheme.

D. MANAGEMENT NEEDS:

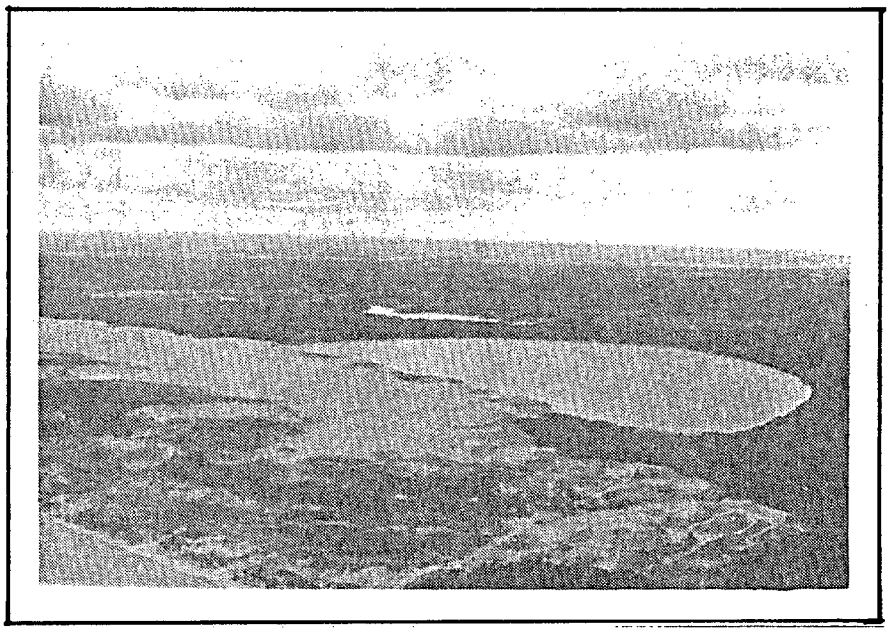
The U.S. Department of Housing and Urban Development will provide each community which borders White Lake with a detailed Flood Insurance Study. This study will contain the technical information necessary for each Community to implement its own floodplain management program. Such a program has already been developed by the City of Montague.

White Lake's water quality problems will be investigated in detail as part of the West Michigan Shoreline Regional Development Commission's continuing '208' Water Quality Management Program. The WMSRDC staff will also formulate a rehabilitation strategy within its 1978-1979 fiscal year.

E. APC STATUS:

The White Lake and White River area was considered early as an Area of Particular Concern because of its problems with water quality and conflicts between industrial and recreational uses. This APC was originally assigned Medium Regional Priority. The Commission intends to give this area considerable attention as it is a major urban area of immense regional significance. This APC has been assigned High Regional Priority.

29. SILVER LAKE, UPPER SILVER LAKE, AND HOLIDAY LAKE



Aerial View of Silver Lake and Vicinity

Photograph III-37

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE OF PARTICULAR CONCERN

29. Silver Lake, Upper Silver Lake, and Holiday Lake

A. LOCATION: Golden Township, Oceana County. T15N-R19W-Secs. 25 & 36. T15N-R18W-Sections 16, 17, 19-21, 29-31.

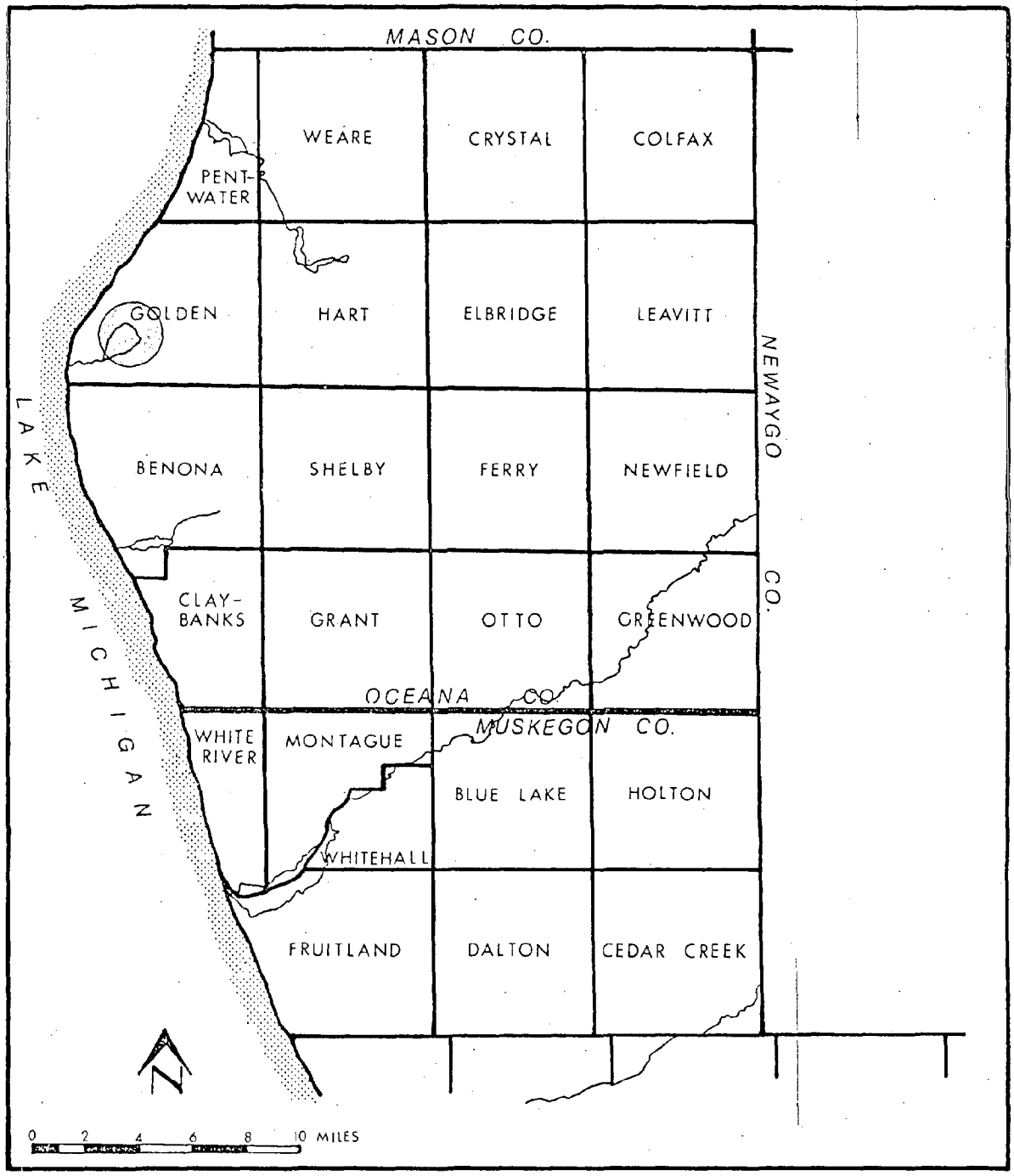


Figure III-58

General Location - Silver Lake, Upper Silver Lake, and Holiday Lake

29. Silver Lake, Upper Silver Lake, and Holiday Lake (cont.)

B. DESCRIPTION:

The Silver Lake watershed is located entirely within Oceana County. Its area is approximately 22 square miles (14,323 acres). Wetlands contribute 230 acres to the total area. Over 7.5 miles of streams and drainage channels are found within the Silver Lake watershed. Silver Lake (690 acres) and Upper Silver Lake/Holiday Lake (a man made lake of approximately 60 acres) dominate the watershed and are also within the Region 14 Coastal Zone.

The Silver Lake watershed is divided between recreation and agricultural use. The State of Michigan owns approximately 2,431 acres in the Silver Lake Area, most of which is open to the public as Silver Lake State Park. Land use near and around Silver Lake and Upper Silver Lake/Holiday Lake is primarily residential. Silver Lake does, of course, border the State Park and its shorelands are subjected to considerable commercial land use. Water quality seems adequate yet threatened by inappropriately placed septic tank and drain field disposal systems.

Figure III-59 examines the Silver Lake and Upper Silver Lake/Holiday Lake area in detail.

C. MAJOR CONCERNS:

Golden Township is participating in the Federal Flood Insurance Program being administered by the U.S. Department of Housing and Urban Development. HUD has provided Golden Township with a preliminary Flood Hazard Boundry Map. The map identifies potential flood prone areas associated with Silver Lake, but omits Upper Silver Lake/Holiday Lake. Golden Township needs more detailed and accurate flood maps before it can begin to implement a floodplain management program. Increased residential development and conversion of seasonal cottages to year-round homes has created a number of problems for the Silver Lake community. Septic systems which were once used only during the summer months must now often perform throughout the year. Many of these systems were inadequately designed to begin with. Increased developmental densities have also had an apparent effect upon septic system efficiencies. The

29. Silver Lake, Upper Silver Lake, and Holiday Lake (cont.)

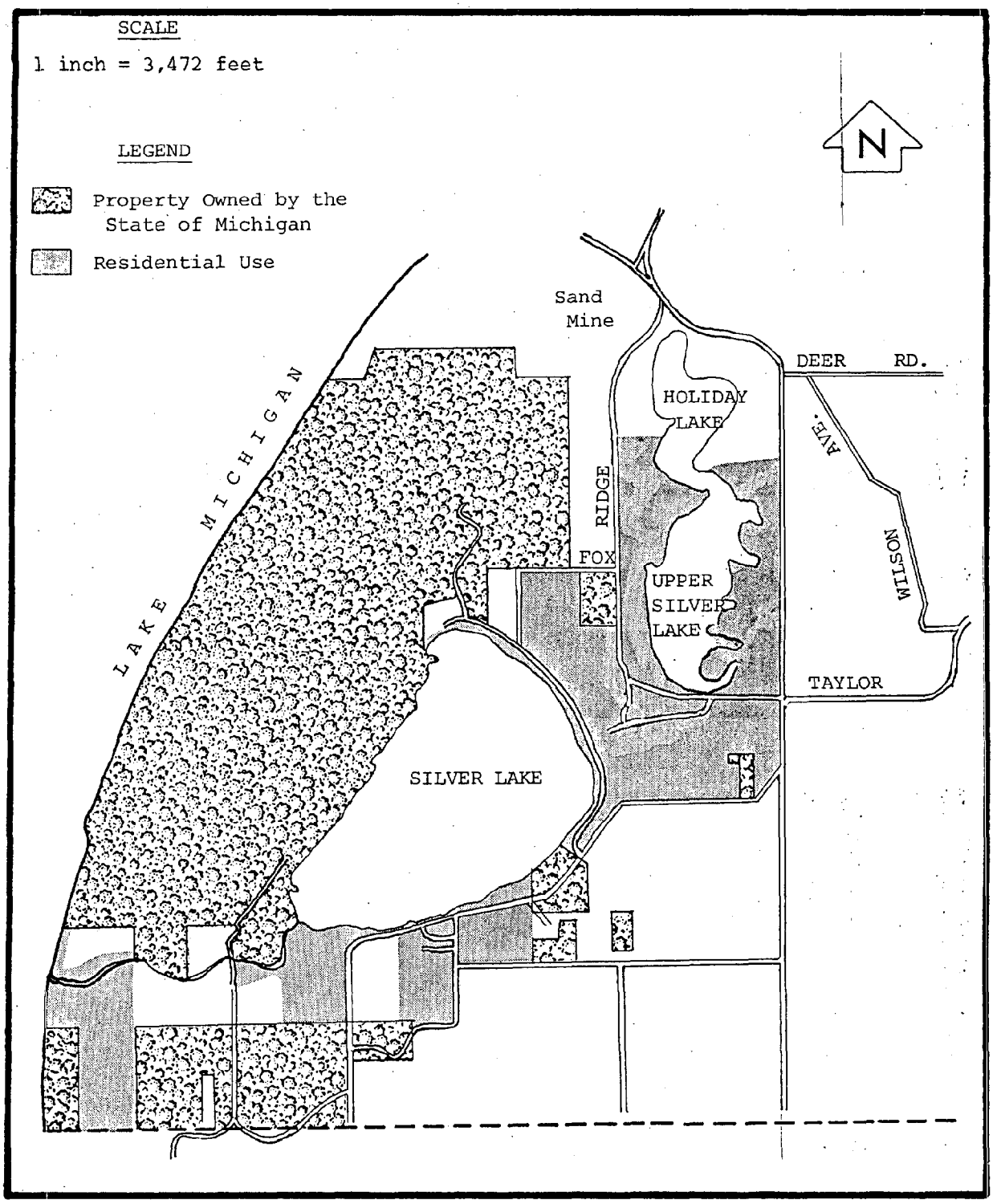


Figure III-59

Site Description

Silver Lake, Upper Silver Lake, and Holiday Lake

29. Silver Lake, Upper Silver Lake and Holiday Lake (cont.)

net result has been decreasing water quality in both Silver Lake, Upper Silver Lake/Holiday Lake.

More people are living in the Silver Lake area. Large crowds are attracted to the Silver Lake State Park. All has caused an increased need for local services. Local residents have complained recently concerning the unruly nature of Park visitors, and the uncontrolled use of dune buggies and other recreation vehicles.

D. MANAGEMENT NEEDS:

Golden Township will need more detailed and accurate flood hazard information. HUD is scheduled to prepare a Flood Insurance Study for this area.

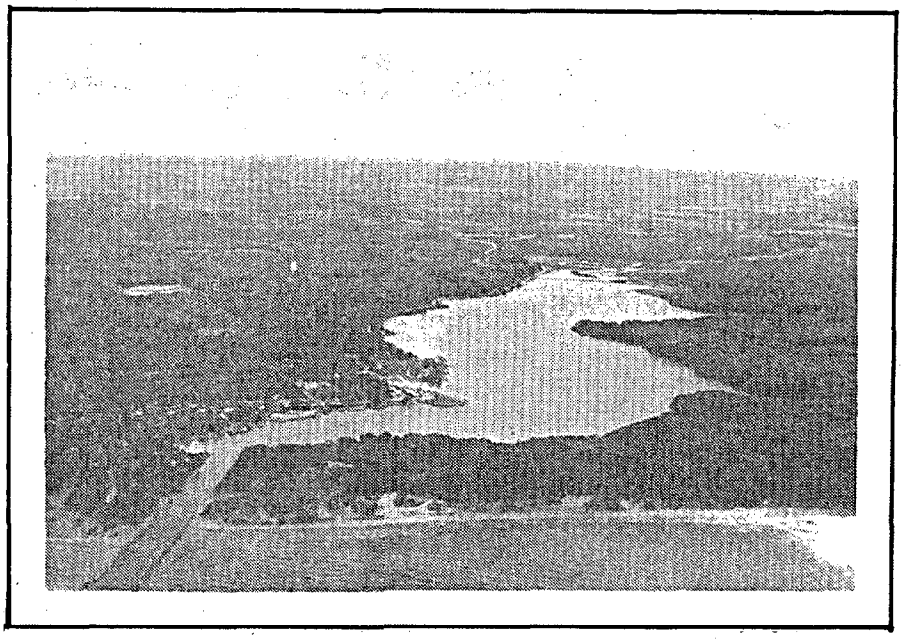
The Michigan Department of Natural Resources should probably give more thought to additional park security. The unrestricted motor vehicle use of Silver Lake Dunes also presents significant safety hazards which need to be resolved.

Golden Township would probably benefit from a comprehensive development plan centered upon the Silver Lake and Upper Silver Lake/Holiday Lake area. Such a plan should examine seasonal as well as year-round use. This plan must evaluate service needs and propose a rational solution to those problems that affect this rapidly growing community.

E. APC STATUS:

The Silver Lake and Upper Silver Lake/Holiday Lake APC was originally assigned Low Regional Priority. As problems get worse, interest in this area's management increases. The Region 14 Commission has re-evaluated its priority and changed it from Low to High.

30. PENTWATER LAKE AND RIVER



Aerial View of Pentwater Lake

Photograph III-38

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE OF PARTICULAR CONCERN

30. Pentwater Lake and River

A. LOCATION: Pentwater Township and Pentwater Village, Oceana County. T16N-R18W-Sections 14, 15, 23-26.

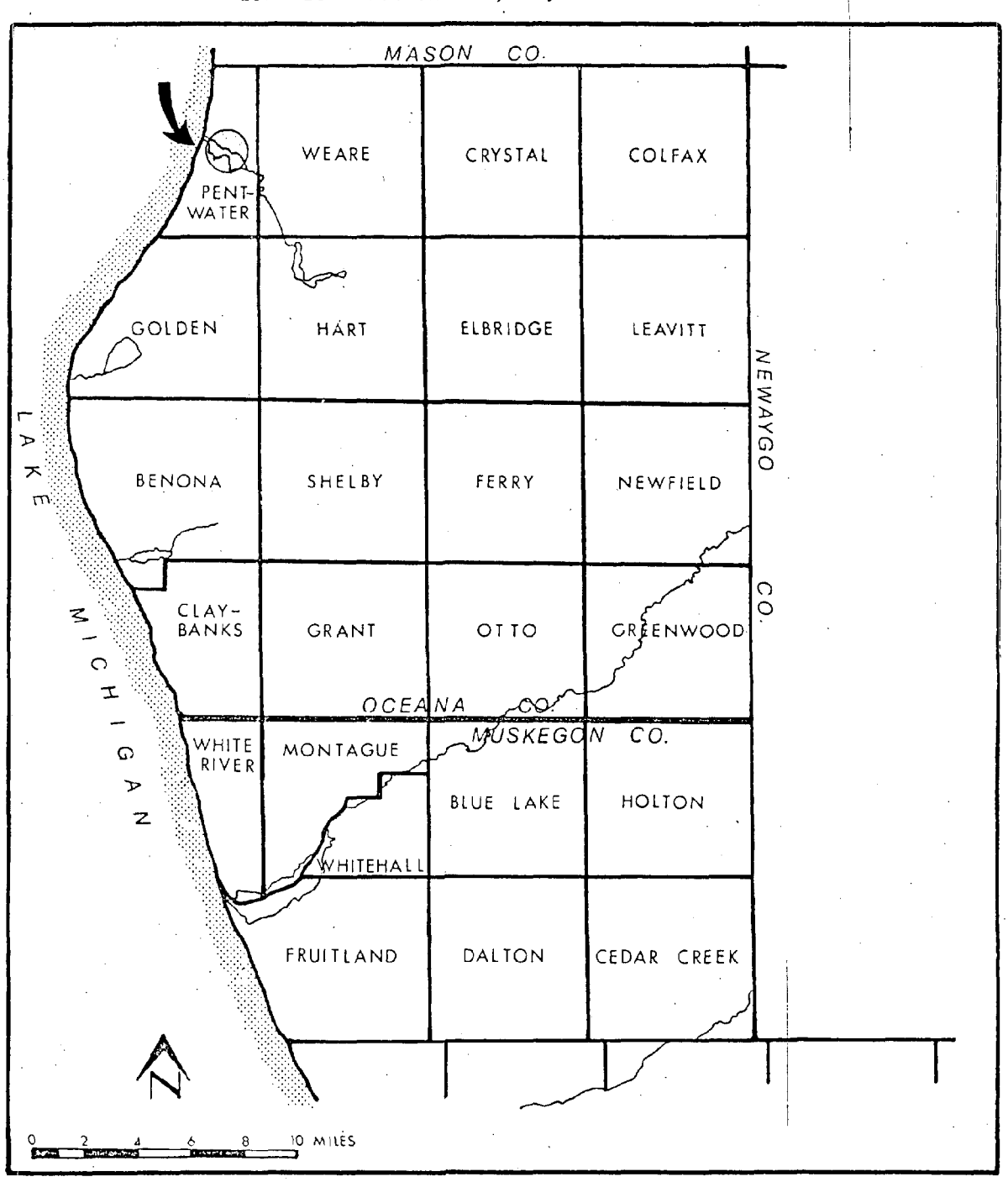


Figure III-60

General Location - Pentwater Lake and River

30. Pentwater Lake and River (cont.)

B. DESCRIPTION:

Most of the Pentwater River watershed lies within Oceana County. A small portion of this basin does, however, extend north into Mason County. The Oceana County portion of this watershed is approximately 149 square miles (95,280 acres) in area. There are extensive wetland areas within the watershed, totaling over 16 square miles (10,400 acres). The entire drainage network makes up 77 miles of streams and channels. Pentwater Lake (436 acres) and a small portion of the Pentwater River fall within the Region 14 Coastal Zone Boundry.

A large percentage of Oceana County's total population lies within the Pentwater River watershed. These people are somewhat concentrated in the City of Hart and the coastal Village of Pentwater. Pentwater Village is something of a resort community, and as such is seasonally oriented. There are many cottages and vacation homes found along Lake Michigan and near Pentwater Village. The Village is small but very attractive, gaining in popularity as a tourist area.

Pentwater Lake water quality is, at present, significantly impacted by the Pentwater Sewage Treatment Plant and individual on-site septic tank systems. Pentwater Lake does, in fact, fall slightly below the "Swimable and Fishable" goals set by Congress in Public Law 92-500, the Federal Water Pollution Control Act as amended in 1972.

Figure III-61 describes the Pentwater Lake area and surrounding land uses.

C. MAJOR CONCERNS:

Both Pentwater Township and Village are participating in the Federal Flood Insurance Program which is administered by the U.S. Department of Housing and Urban Development. HUD has provided each community with a detailed Flood Insurance Study which outlines technical information needed to implement a floodplain management program. Flood hazards and floodplain management remain a concern regarding the Pentwater Lake and River APC.

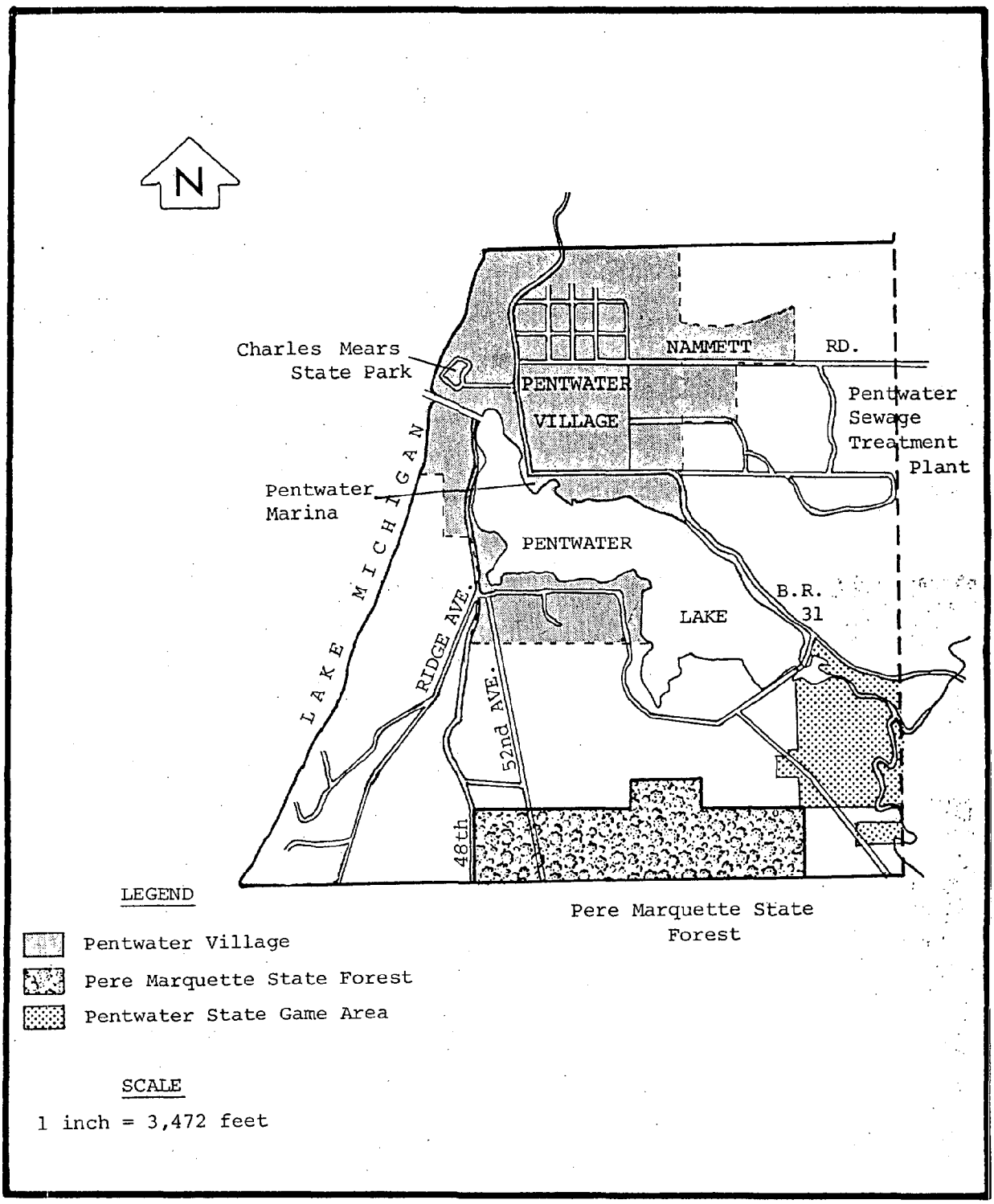


Figure III-61
Site Description
Pentwater Lake and River

30. Pentwater Lake and River (cont.)

The construction of new highway U.S.-31 is very close to being complete up to the Pentwater area. This highway opens up the Pentwater community to even more intense development pressures. Residents are concerned that their community may lose its "Village Charm." Residents are worried what increased development might do to sensitive wetland and wildlife areas.

D. MANAGEMENT NEEDS:

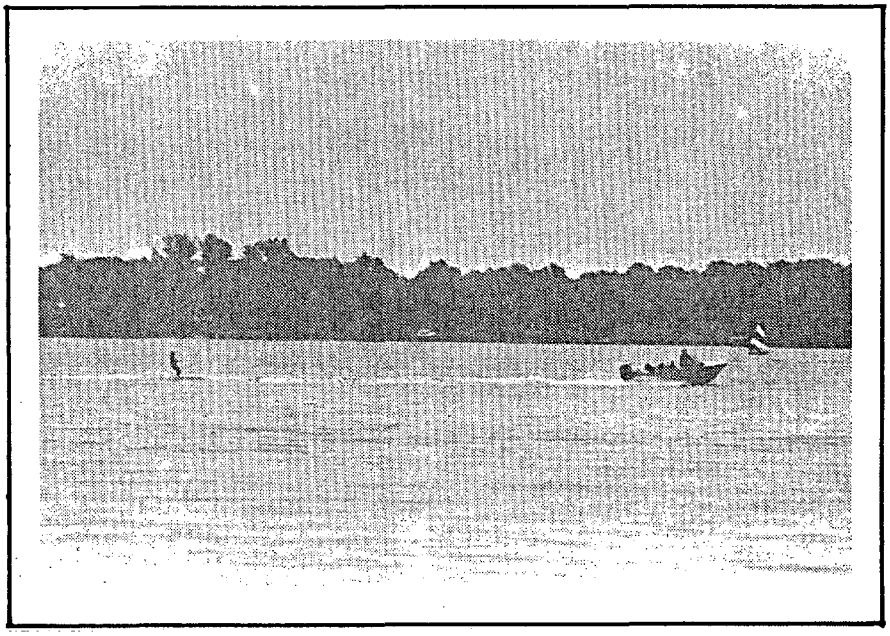
As participants in the Federal Flood Insurance Program, both Pentwater Township and Village are required to implement a floodplain management program. HUD is very specific as to how this management program should be designed. These communities should have little difficulty complying with HUD requirements.

The community's concern regarding future development in the Pentwater area requires our close consideration. Development pressures are likely to become even more intense once the new U.S.-31 is open to traffic. The community seeks to preserve wildlife and wetland areas. It also wishes to insure adequate water quality. The community recognizes a need for long range development planning which considers each of the concerns described.

E. APC STATUS:

The Pentwater area is recognized as an attractive and vital area of regional concern. Pentwater Lake and River was, therefore, identified as a coastal APC. This APC was assigned High Regional Priority. This priority remains unchanged.

31. LAKE MACATAWA AND MACATAWA RIVER



Lake Macatawa As Viewed from the
Public Boat Launch at the Macatawa State Park

Photograph III-39

FLOOD HAZARD AREA OF PARTICULAR CONCERN
ECOLOGICALLY SENSITIVE AREA OF PARTICULAR CONCERN
COASTAL LAKE AND RIVER OF PARTICULAR CONCERN

31. Lake Macatawa and Macatawa River

A. LOCATION: City of Holland, City of Zeeland, Park Twp., Holland Twp., Ottawa County. T5N-R16W-Sections 25-27, 33-36. T5N-R15W-Sections 20-24, 26-31.

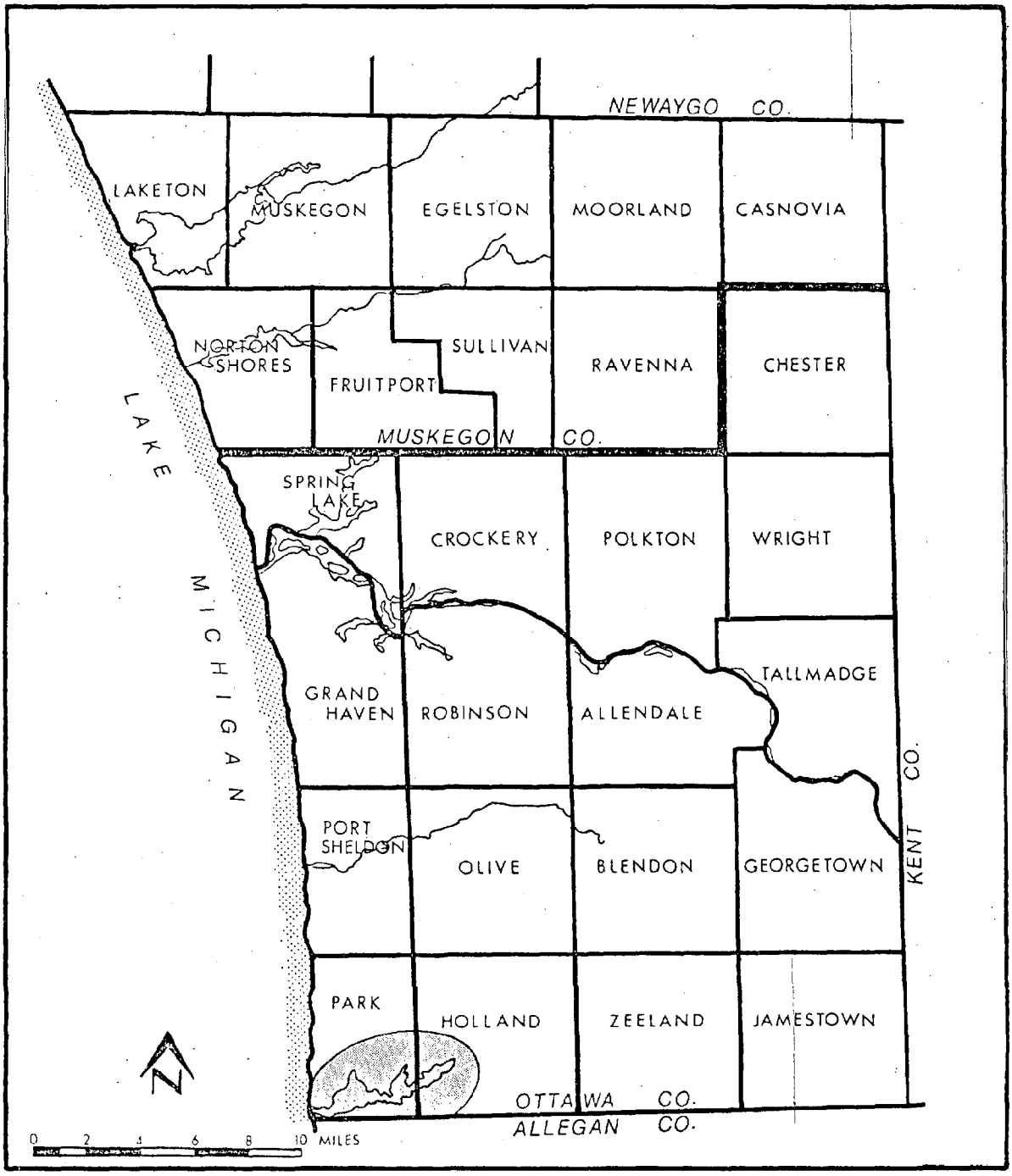


Figure III-62

General Location - Lake Macatawa and Macatawa River

31. Lake Macatawa and Macatawa River (cont.)

B. DESCRIPTION:

The Lake Macatawa and the Macatawa River watershed is located in the southernmost portion of Ottawa County with part of it extending into northwest Allegan County. The Ottawa County portion of this basin is approximately 116 square miles (74,107 acres) in area. A total of 797 acres is classified as wetlands. Stream and water courses add up to over 55 miles in length. Lake Macatawa is itself 2,218 acres.

There is extensive residential development found throughout the Lake Macatawa watershed. Commercial and industrial uses are concentrated in the City of Holland, the City of Zeeland, and along the shore of Lake Macatawa.

Lake Macatawa has experienced severe water quality degradation. Municipal and industrial discharges within the system have contributed to this degradation. Non-point sources of pollution, which include the runoff from extensive agricultural lands in the watershed, must also share the blame for water quality problems.

Figure III-63 shows the general Lake Macatawa vicinity and existing land uses.

C. MAJOR CONCERNS:

Concerns regarding the Lake Macatawa and Macatawa River APC are three fold: 1) flood hazards, 2) preservation of ecologically sensitive environments, and 3) improved water quality. Each of these concerns will be discussed separately.

Park Township, Holland Township, and the City of Holland are participating in the Federal Flood Insurance Program which is administered by the U.S. Department of Housing and Urban Development. HUD has provided Holland Township with preliminary Flood Hazard Boundry maps which delineate flood prone areas. HUD has prepared the more detailed Flood Insurance Study for Park Township and the City of Holland, and has thus made available the technical information necessary to implement a floodplain management program. Holland Township still needs this more

31. Lake Macatawa and Macatawa River (cont.)

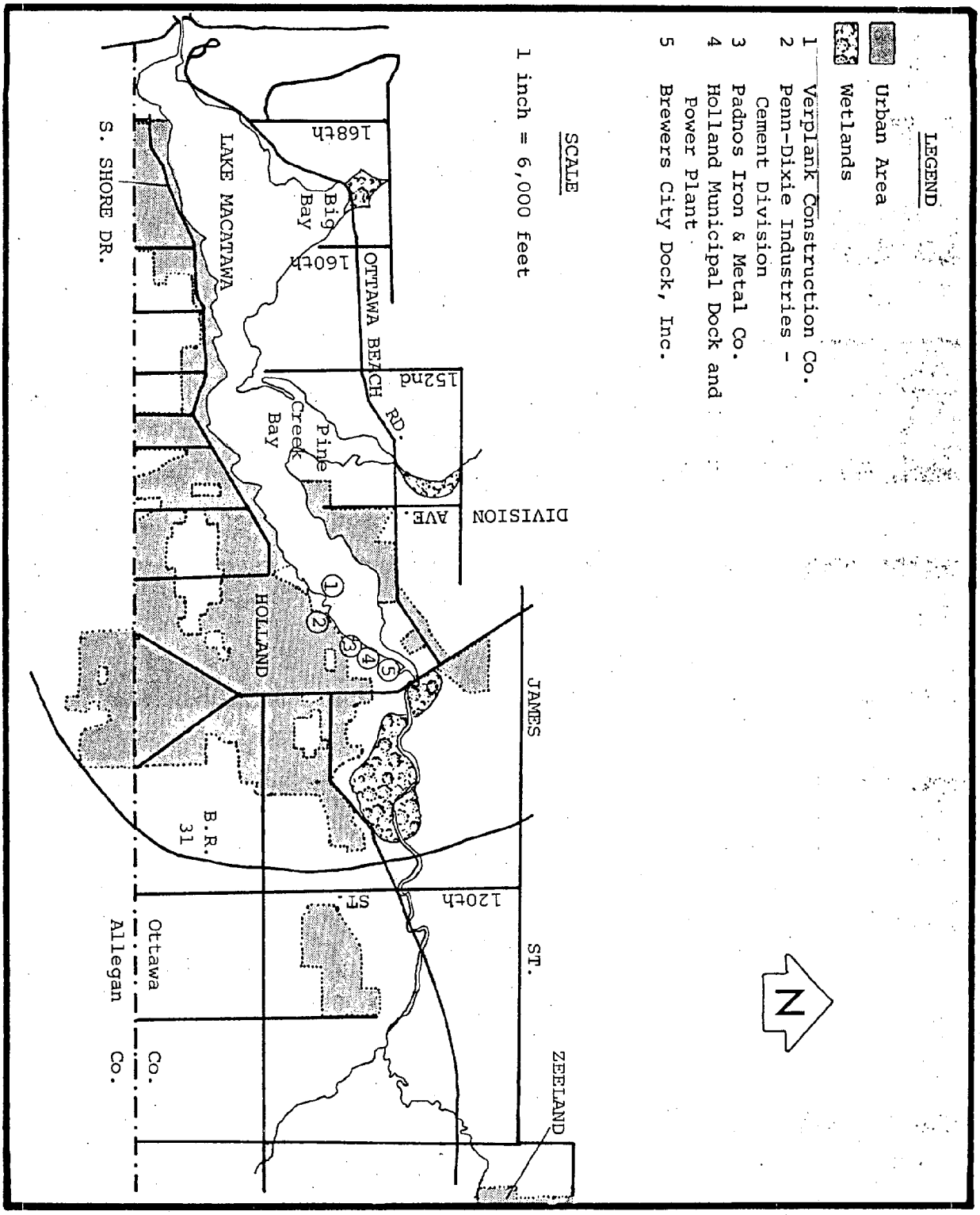


Figure III-61

Site Description

Lake Macatawa and Macatawa River

detailed information.

There are several areas within the Lake Macatawa and Macatawa River APC which have recognized ecological importance. These ecologically sensitive areas include the Macatawa River Marsh and Pine Creek Bay. Both areas are important because of their ability to help purify polluted waters. Both areas are prime nesting sites and habitats for waterfowl. Dredging and filling threaten to destroy important environmental attributes. Residents seek to preserve these particularly sensitive areas.

Lake Macatawa presents many recreational opportunities. The lake is viewed as a valuable recreation resource, and yet this resource has undoubtedly suffered a great deal because of serious water quality problems. Lake Macatawa's shoreline is cluttered with residential, commercial, and industrial uses. Its watershed is primarily agricultural. Urban and rural areas have both contributed to Lake Macatawa's water quality situation.

D. MANAGEMENT NEEDS:

The Federal Flood Insurance Administration intends to provide both Holland Township and the City of Holland with detailed Flood Insurance Studies. With the technical information on hand, these communities should have little difficulty in following established guidelines and developing a floodplain management program.

Water quality problems, an increased need for public access, and the community's desire to preserve important and sensitive environments, eventually led to the Kalamazoo-Black-Macatawa-Paw Paw Rivers Basin Study. This study was conducted by the Soil Conservation Service, Economic Research Service, and the Forest Service, all of which are agencies of the U.S. Department of Agriculture. These agencies were in addition assisted by the Michigan Department of Natural Resources and the Kalamazoo-Black-Macatawa-Paw Paw River Basin Citizens Council. The study began with authorization on September 7, 1972. This cooperative

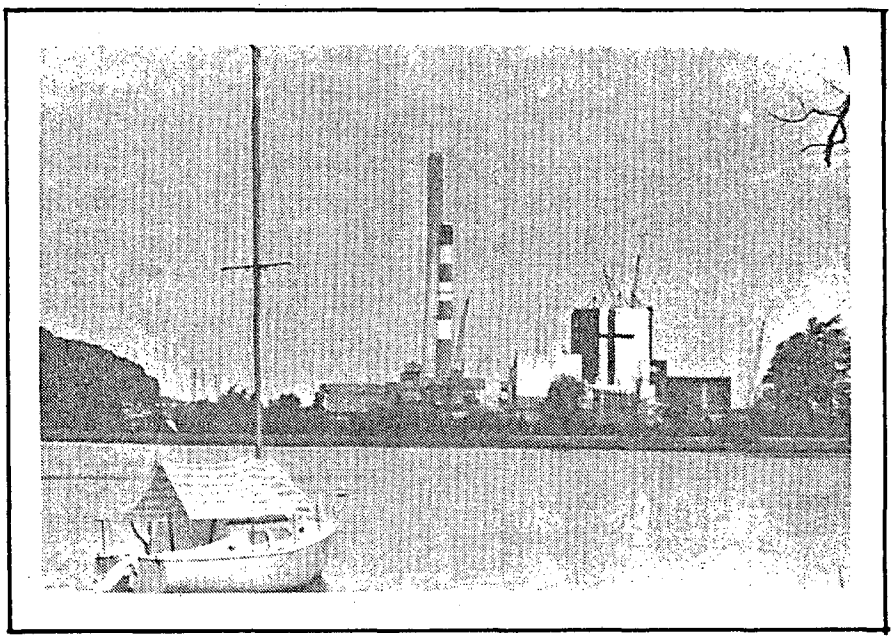
investigation led to the publishing of a report entitled, A Water and Land Resource Plan for the Kalamazoo-Black-Macatawa-Paw Paw Rivers Basin, May 1977. This plan is very comprehensive and its recommendations appropriate. The Kalamazoo-Black-Macatawa-Paw Paw Rivers Basin Citizens Council is providing continued guidance concerning this plan's implementation.

The Basin Plan referred to above is directed mainly at preserving sensitive areas, providing public access, and reducing pollutant contributions to the area's surface waters. The West Michigan Shoreline Regional Development Commission intends to prepare a rehabilitation study for Lake Macatawa as part of the agency's 208 Water Quality Management Planning Program. This rehabilitation study is not expected until perhaps the 1979-80 fiscal year.

E. ACP STATUS:

The Lake Macatawa and Macatawa River APC was originally assigned High Regional Priority in support of the Kalamazoo-Black-Macatawa-Paw Paw Rivers Basin Study. Now that a plan has been prepared, the Region 14 Commission is equally interested in seeing this plan implemented. The Lake Macatawa and Macatawa River APC retains its High Regional Priority status.

32. PIGEON LAKE AND PIGEON CREEK



Pigeon Lake with the Consumers Power
J. H. Campbell Plant in Background

Photograph III-40

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE AND RIVER OF PARTICULAR CONCERN

32. Pigeon Lake and Pigeon Creek

A. LOCATION: Port Sheldon Township, Ottawa County. T6N-R16W-Sections 12-16, 21, and 22.

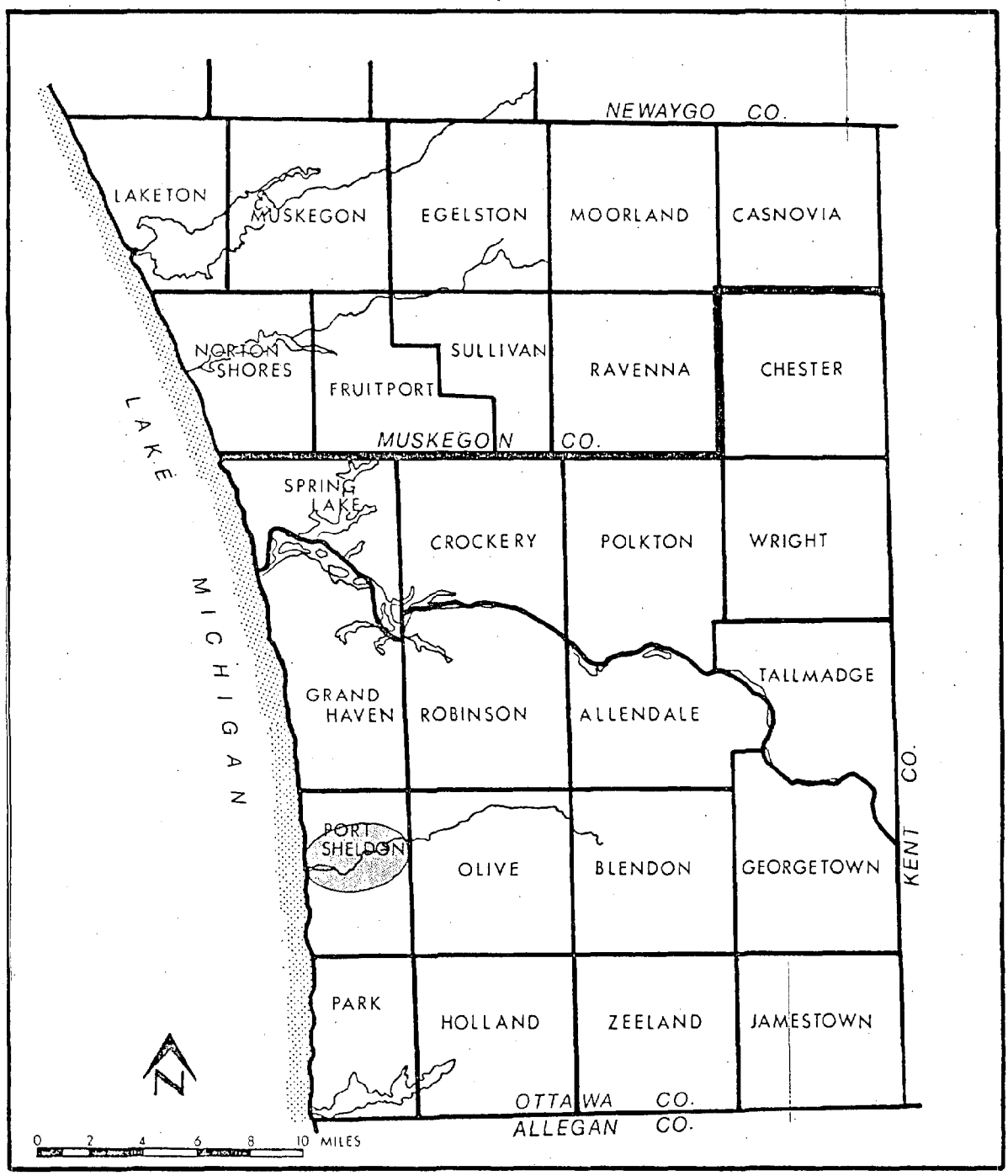


Figure III-64
General Location - Pigeon Lake and Pigeon Creek

32. Pigeon Lake and Pigeon Creek (cont.)

B. DESCRIPTION:

The Pigeon Lake/Pigeon Creek drainage basin lies entirely within Ottawa County. The watershed is approximately 60 square miles (38,610 acres) in area. There are approximately 2,310 acres that are classified as wetlands. Stream and water courses add up to 37 miles in total length. Pigeon Lake is 225 acres.

Little of the Pigeon Lake/Pigeon Creek area is actually developed. Residential property runs parallel to Lake Michigan and is located up in the dunes south of Pigeon Lake. Most of the land area north of Pigeon Land and Pigeon Creek is owned by Consumers Power Company and is the site of their J. H. Campbell Electric Generating Plant. Consumers Power is in the process of expanding its Port Sheldon operations with a third generator to produce an additional 800 megawatts of electric power at an estimated project cost of $510 million.

Pigeon Lake water quality looks good. The Pigeon Creek watershed provides habitats for abundant wildlife. The Creek is a recognized trout stream.

Figure III-63 examines the Pigeon Lake/Pigeon Creek vicinity and existing land uses.

C. MAJOR CONCERNS:

Port Sheldon Township participates in the Federal Flood Insurance Program being administered by the U.S. Department of Housing and Urban Development. HUD has prepared a Flood Insurance Study for Port Sheldon Township. This study identifies flood prone areas and examines their associated flood hazard. This study provides the Township with all the information it needs to implement a floodplain management program. Flooding problems are, however, still a concern.

The construction of major energy facilities along Lake Michigan's shore is, of course, a concern. The expansion of the J. H. Campbell plant will undoubtedly cause significant environmental and economic

32. Pigeon Lake and Pigeon Creek (cont.)

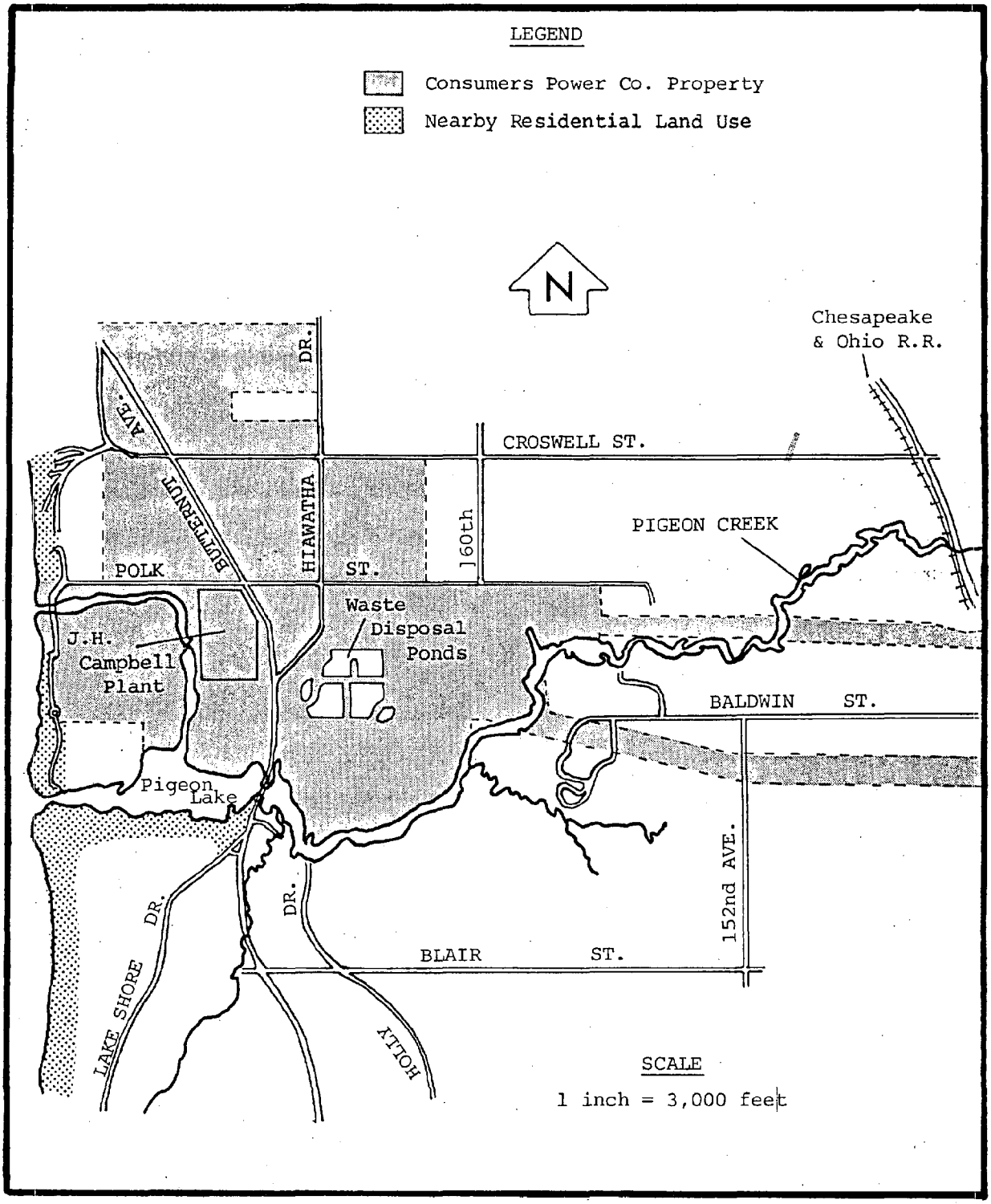


Figure III-63
Site Description
Pigeon Lake and Pigeon Creek

impacts. Construction at Port Sheldon is, however, being closely monitored by the Township, Ottawa County, the State, the U.S. EPA, the Army Corps of Engineers, and others. In fact, the facility is scheduled to obtain over 80 permits before the project is complete.

Consumers Power has already begun to evaluate ambient air and water conditions in preparation for long term monitoring commitments. Consumers Power is working closely with local governments to minimize construction impacts.

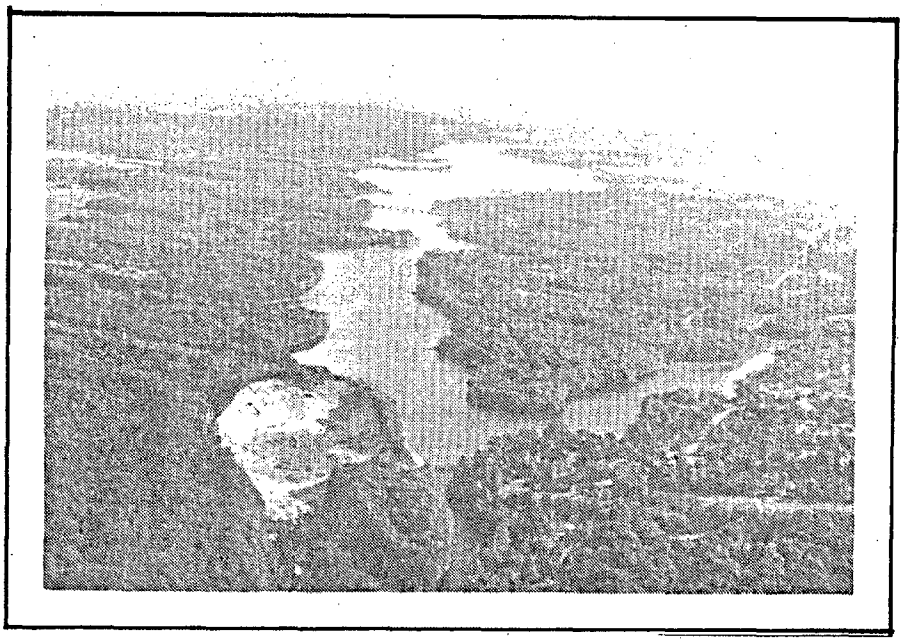
D. MANAGEMENT NEEDS:

The expansion of the J. H. Campbell Plant must be continually monitored, and its associated impacts must be periodically evaluated. There are numerous local, state, and federal agencies which will dutifully insure project safety and integrity. The West Michigan Shoreline Regional Development Commission will watch with an interested eye the progress in the Port Sheldon Pigeon Lake/Pigeon Creek area.

E. APC STATUS:

The Pigeon Lake and Pigeon Creek APC was originally assigned High Regional Priority recognizing potential conflicts which might arise due to expansion of the J. H. Campbell Plant. This APC remains a High Regional Priority.

33. MONA LAKE, BLACK CREEK,
AND LITTLE BLACK CREEK



Aerial View of Mona Lake
Looking East from Over Lake Michigan

Photograph III-41

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE OF PARTICULAR CONCERN
ECOLOGICALLY SENSITIVE AREA OF PARTICULAR CONCERN
RECREATION AREA OF PARTICULAR CONCERN

33. Mona Lake, Black Creek, and Little Black Creek

A. LOCATION: City of Norton Shores, City of Muskegon Heights, Muskegon County. T9N-R17W-Sections 12-14. T9N-R16W-Sections 7-9, 17, and 18.

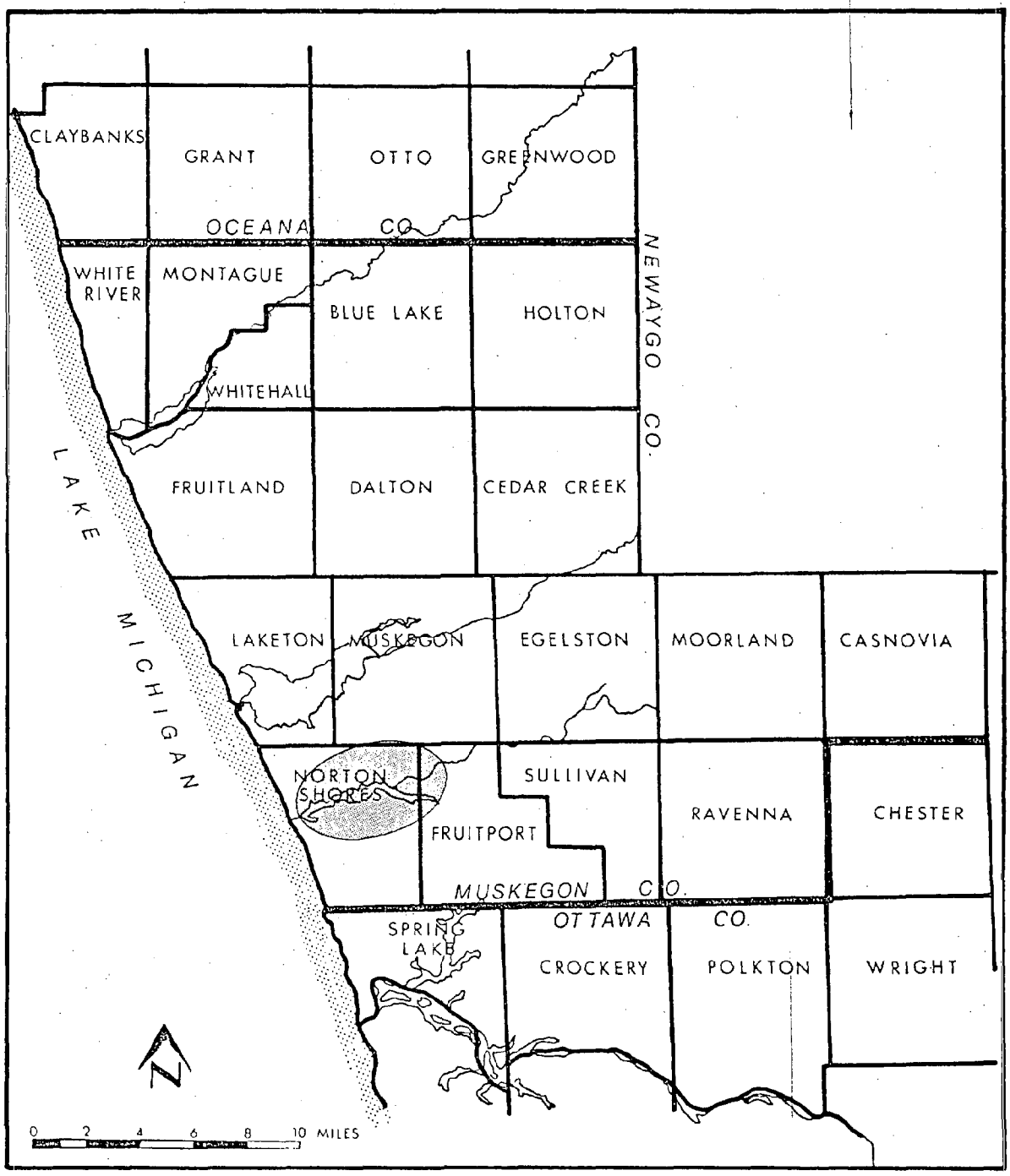


Figure III-66

General Location - Mona Lake, Black Creek, and Little Black Creek

33. Mona Lake, Black Creek, and Little Black Creek (cont.)

B. DESCRIPTION:

The Mona Lake drainage area lies entirely within Muskegon County. The total watershed contains approximately 104 square miles (66,633 acres). Of this area, 324 acres would be considered as wetlands. Mona Lake is 695 acres in area and is fed by Black Creek and Little Black Creek with a single shallow outlet to Lake Michigan.

Land use within this basin is primarily residential with the highest densities found nearest Mona Lake. The Cities of Muskegon Heights and Norton Shores each have parks on Mona Lake. The City of Norton Shores plans to develop yet another recreation area once it acquires the 48 acre Swett Property (the Swett Property is also an APC and was discussed previously). Celery flats on the northern shore, and the Muskegon County Airport on the southern shore of Mona Lake each possess sizable acreage within the watershed.

Mona Lake has suffered severe water quality problems. These problems are the result of long and persistant abuse. Muskegon County's Wastewater Treatment System has produced encouraging improvements but non-point contributions remain quite significant. Refer to Figure III-67.

C. MAJOR CONCERNS:

The City of Norton Shores and Muskegon Heights are participating in the Federal Flood Insurance Program being administered by the U.S. Department of Housing and Urban Development. HUD has provided the City of Norton Shores with a detailed Flood Insurance Study. The City of Muskegon Heights has only preliminary Flood Hazard Boundry Maps. Although flooding in this area is considerably less significant compared to other areas in the region, an effective floodplain management program remains a concern. The City of Norton Shores has implemented such a program, but the City of Muskegon Heights awaits more detailed flood information.

Mona Lake water quality, and its eventual improvement, is perhaps the greatest concern focused upon this APC. Mona Lake lies at the end of a fairly extensive watershed. Wastes added anywhere in this system

33. Mona Lake, Black Creek, and Little Black Creek (cont.)

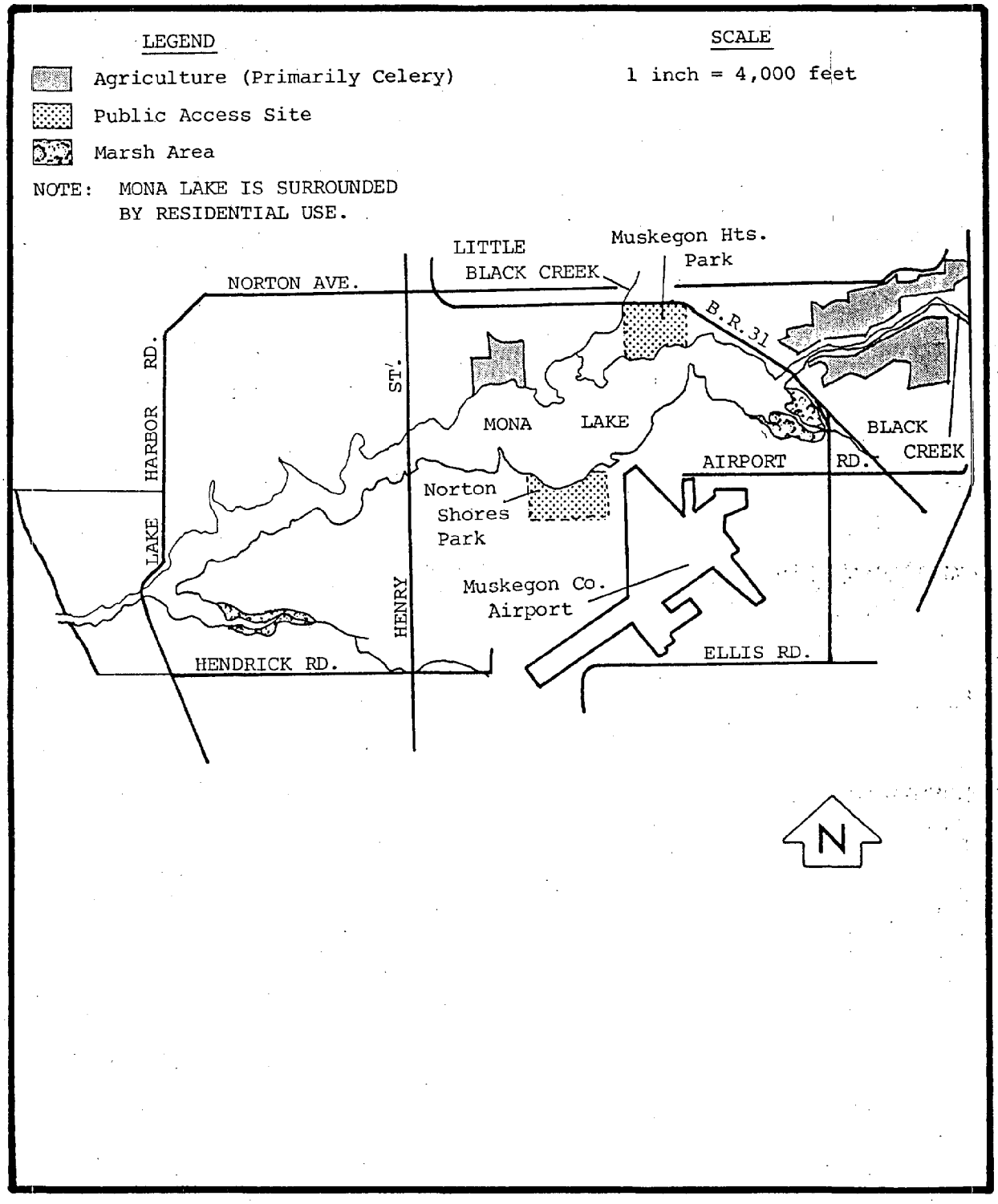


Figure III-67

Site Description

Mona Lake, Black Creek, and Little Black Creek

have a good chance of accumulating in Mona Lake. The advent of Muskegon County's Wastewater Treatment System has shown encouraging results. We still must deal with significant non-point sources such as urban storm drains and bottom sediments.

The marsh area found on the eastern end of Mona Lake is recognized as an ecologically sensitive area worthy of preservation. It is an area having significant wildlife value, and is probably beneficial to Mona Lake's water quality.

The City of Norton Shores at one time hoped to purchase property on Mona Lake which is currently owned by the State of Michigan Highway Department. This property is within the same vicinity as the marsh area just described. This property was to be developed as a park. Emphasis has since shifted toward the acquisition of the Swett Property.

D. MANAGEMENT NEEDS:

Floodplain management will be handled by the City of Muskegon Heights and the City of Norton Shores. Both communities must follow HUD guidelines concerning their respective management programs.

Mona Lake will be the subject of a rehabilitation study to be performed by the West Michigan Shoreline Regional Development Commission as part of its 208 Water Quality Management Planning Program. Water quality will be examined in detail as part of a water sampling program schedule during the agency's 1978-1979 fiscal year. The rehabilitation study will evaluate numerous management alternatives based upon monitoring results.

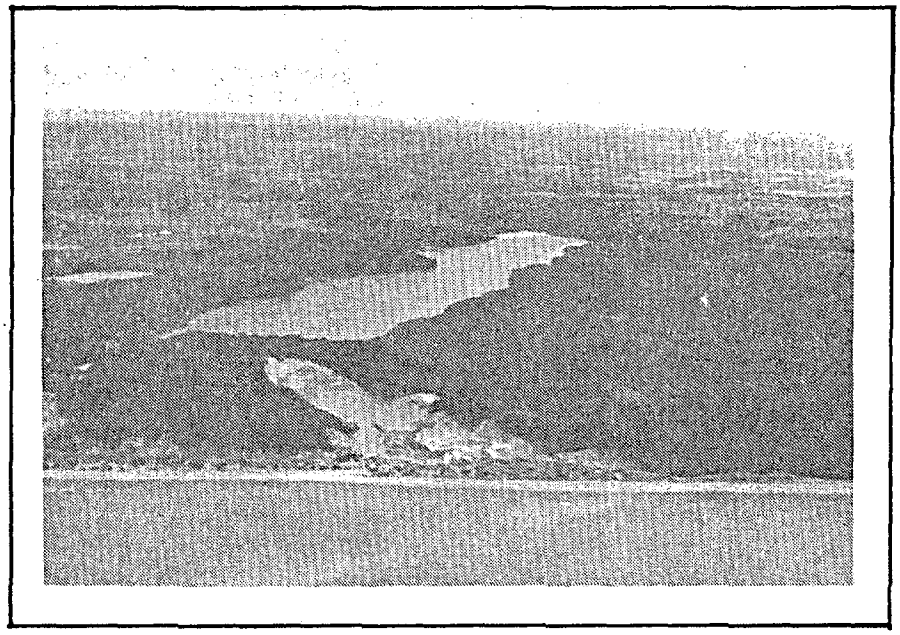
The City of Norton Shores is preparing a Master Plan which will include development concepts for the Mona Lake vicinity. This planning process has just begun so there are as yet no preliminary indication of what might be done with the marsh areas described.

33. Mona Lake, Black Creek, and Little Black Creek (cont.)

E. APC STATUS:

The Mona Lake, Black Creek, and Little Black Creek area was nominated early as an APC. Its importance to the City of Norton Shores and the City of Muskegon Heights goes without question. The West Michigan Shoreline Regional Development Commission had recognized this area as an APC knowing that it would receive considerable attention during its 208 Water Quality Management Planning Program. The Commission, therefore, assigned this area Low Regional Priority awaiting the conclusions offered by its planning staff regarding water quality. Since that time, the agency has finished its initial 208 planning efforts and the City of Norton Shores has made plans to purchase the Swett Property for development as a recreation area. Charges in circumstances have caused the Region 14 Commission to increase priorities from Low to High.

34. STONY LAKE WATERSHED



Aerial View of Stony Lake

Photograph III-42

FLOOD HAZARD AREA OF PARTICULAR CONCERN
COASTAL LAKE OF PARTICULAR CONCERN

34. Stony Lake Watershed

A. LOCATION: Benona Twp., Benona Village, and Claybanks Twp., Oceana County. T14N-R18W-Sections 26-29, 31-35. T13N-R18W-Sections 3-6.

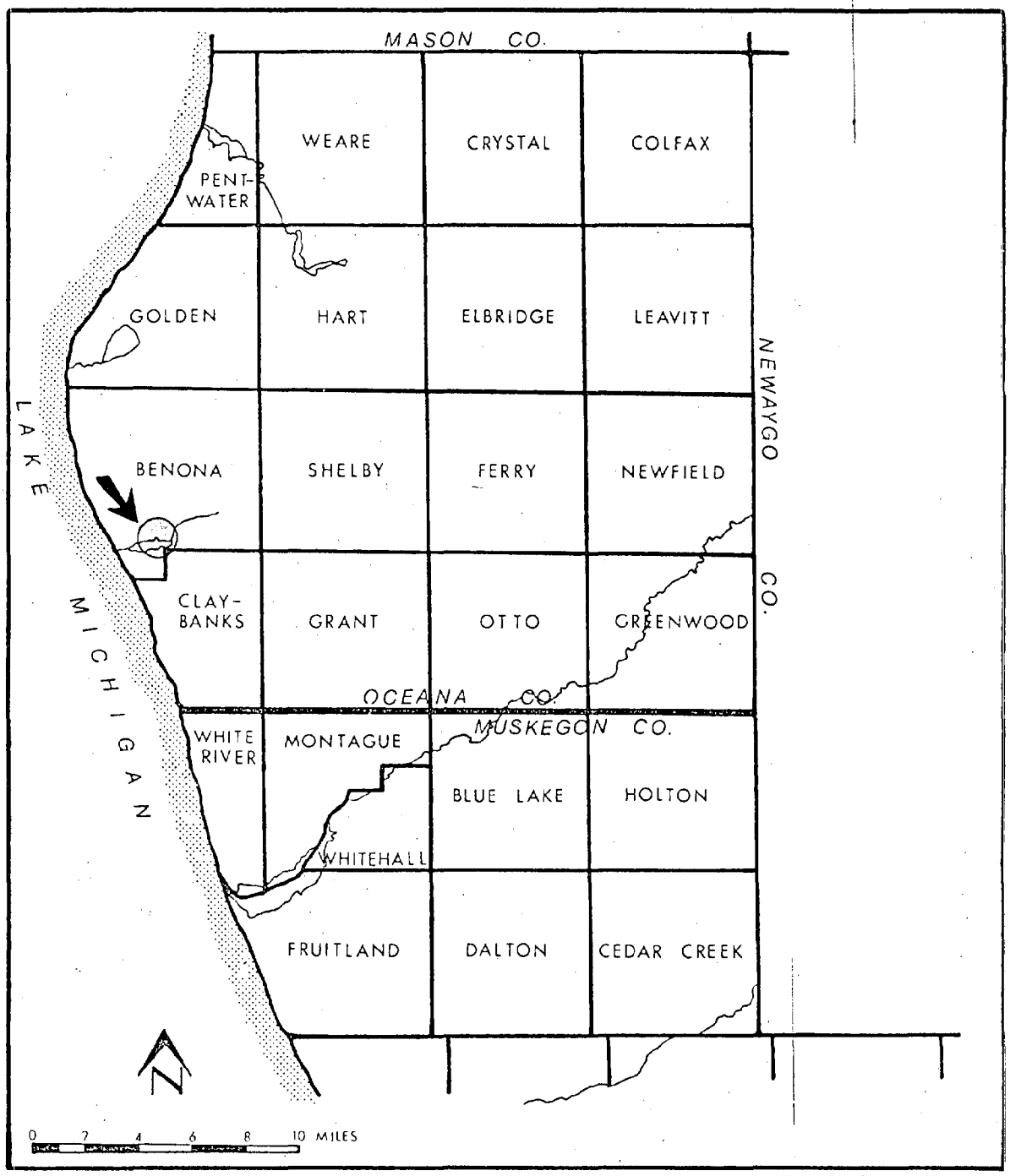


Figure III-68

General Location - Stony Lake Watershed

34. Stony Lake Watershed (cont.)

B. DESCRIPTION:

The Stony Lake Watershed is located entirely within Oceana County. The basin is approximately 62 square miles (39,855 acres). Within this system are 734 acres of wetlands and 32 miles of connecting streams. The largest lake in this area is Stony Lake (278 acres).

Land use within the Stony Lake Watershed is predominately agricultural with several hundred acres devoted to fruit orchards. Residential development is, for the most part, farm oriented except for the area near and around the Village of Shelby. Both commercial and industrial development have concentrated near Shelby. Development around Stony Lake is resort oriented with many seasonal and vacation homes locating along the lakeshore.

Figure III-69 provides a general look at existing land use in the Stony Lake vicinity.

C. MAJOR CONCERNS:

Flood hazards and floodplain management are concerns regarding the Stony Lake APC. Benona Township has just recently chosen to participate in the Federal Flood Insurance Program which is administered by the U.S. Department of Housing and Urban Development. Claybanks Township has chosen not to participate even though HUD has indicated that it has flood prone areas. HUD has provided each Township with preliminary Flood Hazard Boundry Maps.

Many residents in the Benona area are concerned about increasing development pressures which might result from improved access due to the new Highway U.S.-31. The Stony Lake watershed is at present in a semi-wild state. It is wooded, swampy, and used by nesting birds and as a spawning ground for fish. Many people would like to see the marsh areas preserved because of their ecologic significance . Others are warned that increased development might seriously degrade water quality throughout the watershed.

34. Stony Lake Watershed (cont.)

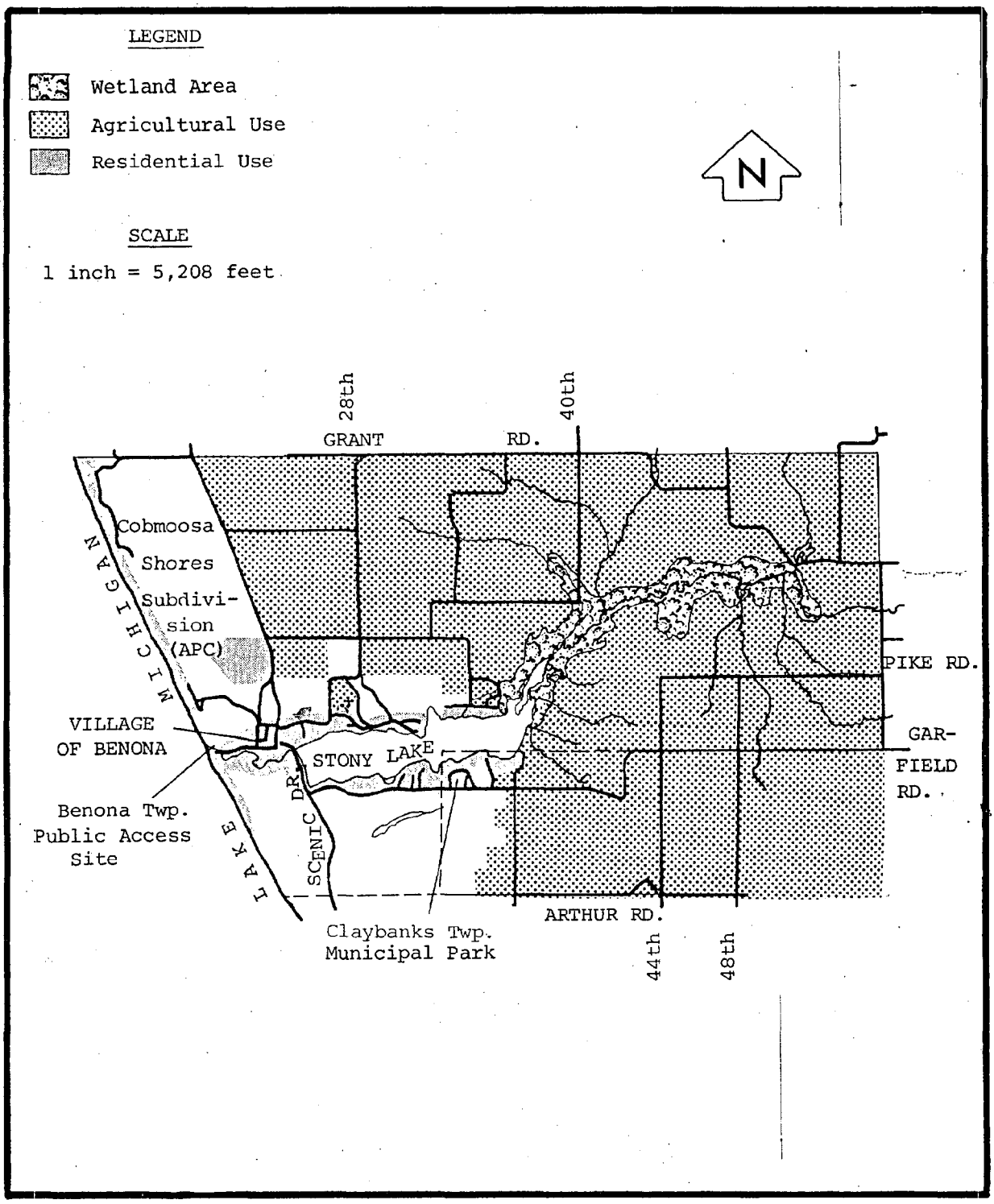


Figure III-69
Site Description
Stony Lake Watershed

34. Stony Lake Watershed (cont.)

D. MANAGEMENT NEEDS:

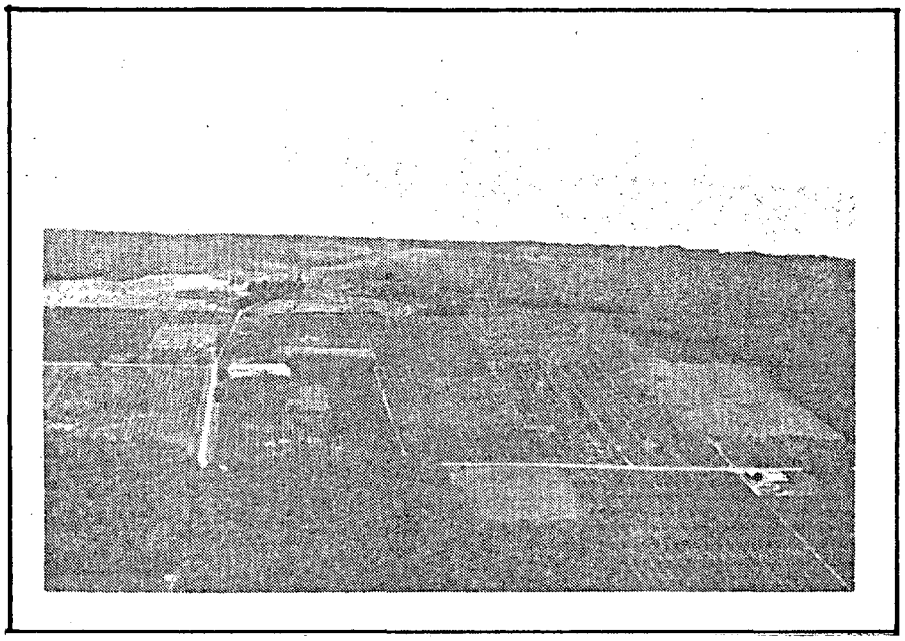
Both Benona Township and Claybanks Township apparently need to implement a floodplain management program. Benona Township has decided that it will prepare such a program. Clay Banks Township has yet to be convinced that it has a flood problem, or at least a serious enough problem to warrant land use restrictions based upon Federal guidelines.

The Stony Lake area is an attractive resort/vacation area. Uncontrolled development poses a serious threat to the character of Benona Village and the integrity of the area's natural environment. Marsh areas within the Stony Lake Watershed seem worthy of preservation. The community should probably begin to formulate and implement a detailed comprehensive development strategy so as to protect valuable amenities.

E. APC STATUS:

The Stony Lake APC was originally assigned Low Regional Priority. The West Michigan Shoreline Regional Development Commission has increased this priority to Medium.

35. BENONA ORCHARDS



Aerial View of Benona Township Agriculture
Photograph III-43
AGRICULTURAL AREA OF PARTICULAR CONCERN

35. Benona Orchards

A. LOCATION: Benona Township, Oceana County, T14N-R19W-Sections 1, 12, and 13.

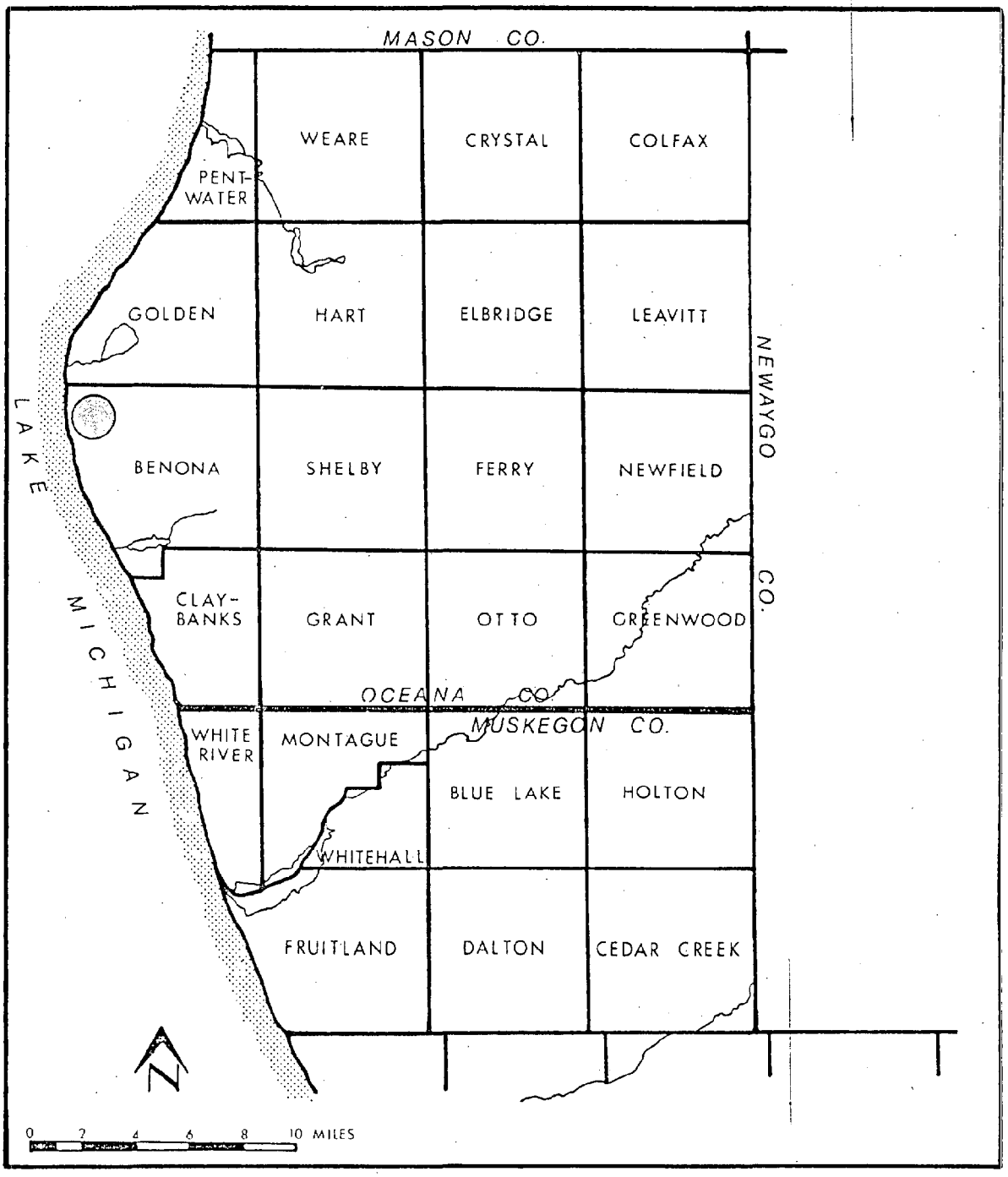


Figure III-70
General Location - Benona Orchards

35. Benona Orchards (cont.)

B. DESCRIPTION:

This shoreline area of Benona Township has approximately 520 acres in agricultural use. Most of this area is developed as orchards. These orchards are successful due to the on-shore breezes from Lake Michigan which moderate temperatures. The area is bordered on the west by heavily wooded undeveloped land. Parts of Silver Lake State Park are found to the immediate north. The Orwig Property, also recognized as an APC, is located south of this agricultural area. Immediately to the east, across Scenic Drive, is more agricultural land.

Figure III-71 describes the general setting and existing land use.

C. MAJOR CONCERNS:

Concerns center upon retaining these areas in their existing agricultural use. Development pressures are likely to increase and agricultural uses are likely to suffer the consequences.

D. MANAGEMENT NEEDS:

Properly enforced zoning is probably all that is at present necessary to preserve this valued agricultural area. Benona Township has no existing zoning ordinance. Oceana County has prepared its own countywide zoning ordinance, but it has not as yet been adopted.

E. APC STATUS:

The Benona Orchard APC was originally assigned Low Regional Priority. It will remain a Low Regional Priority given existing local interest.

35. Benona Orchards (cont.)

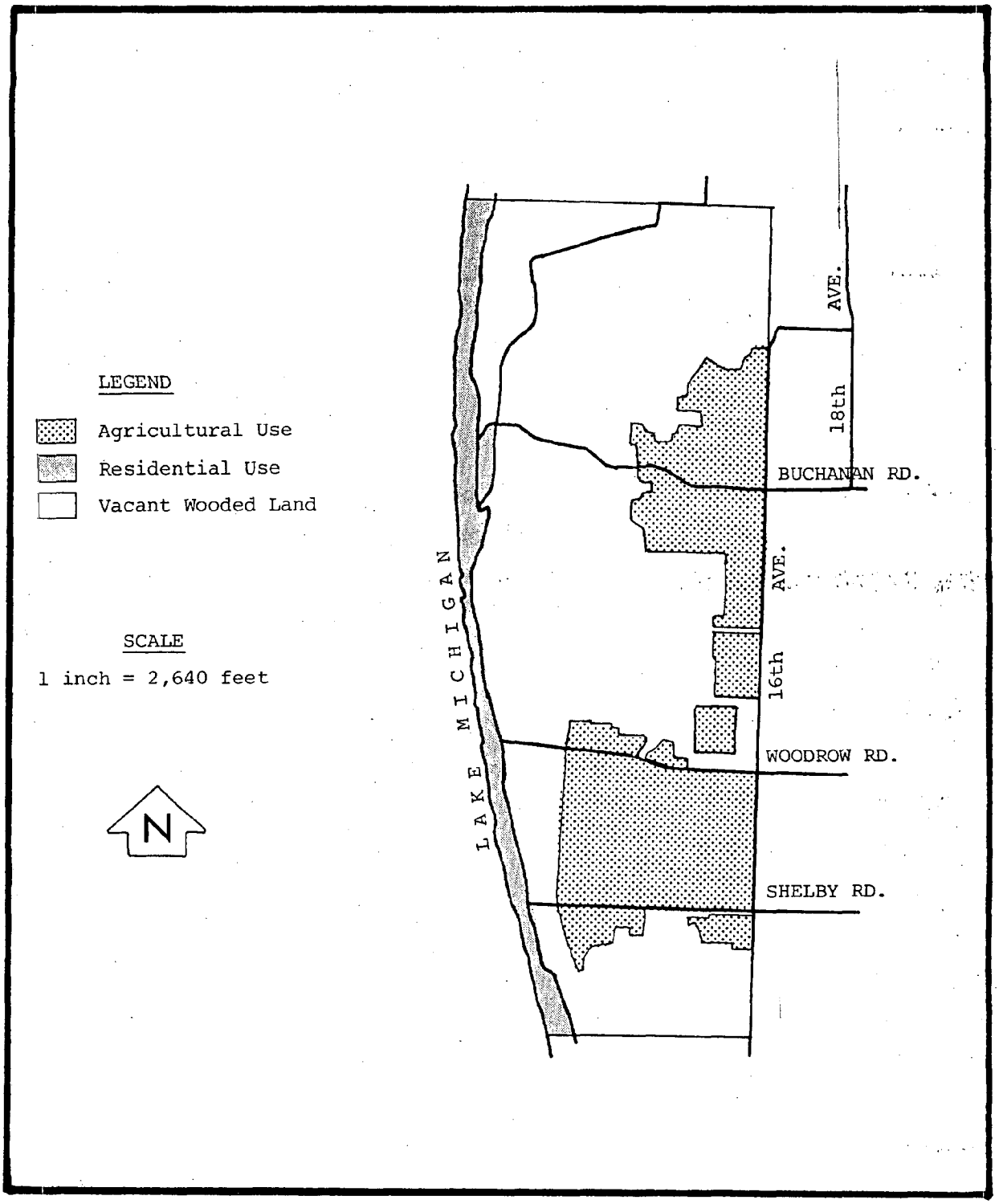
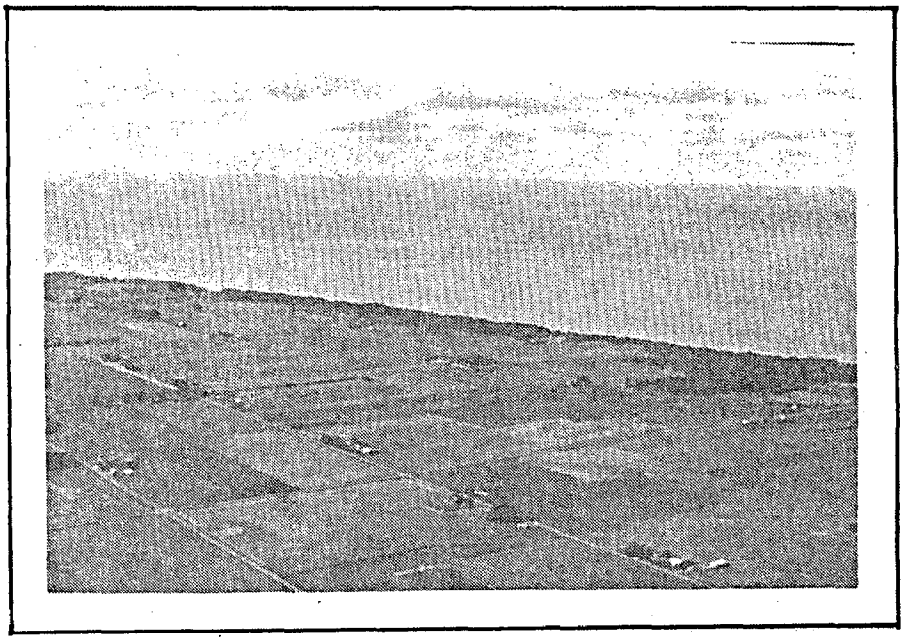


Figure III-71
Site Description
Benona Orchards

36. WHITE RIVER ROW CROPS



Agricultural Land Use in White River Township
Photograph III-44
AGRICULTURAL AREA OF PARTICULAR CONCERN

36. White River Row Crops

A. LOCATION: White River Township, Muskegon County. T12N-R18W-Sections 22, 23, and 26.

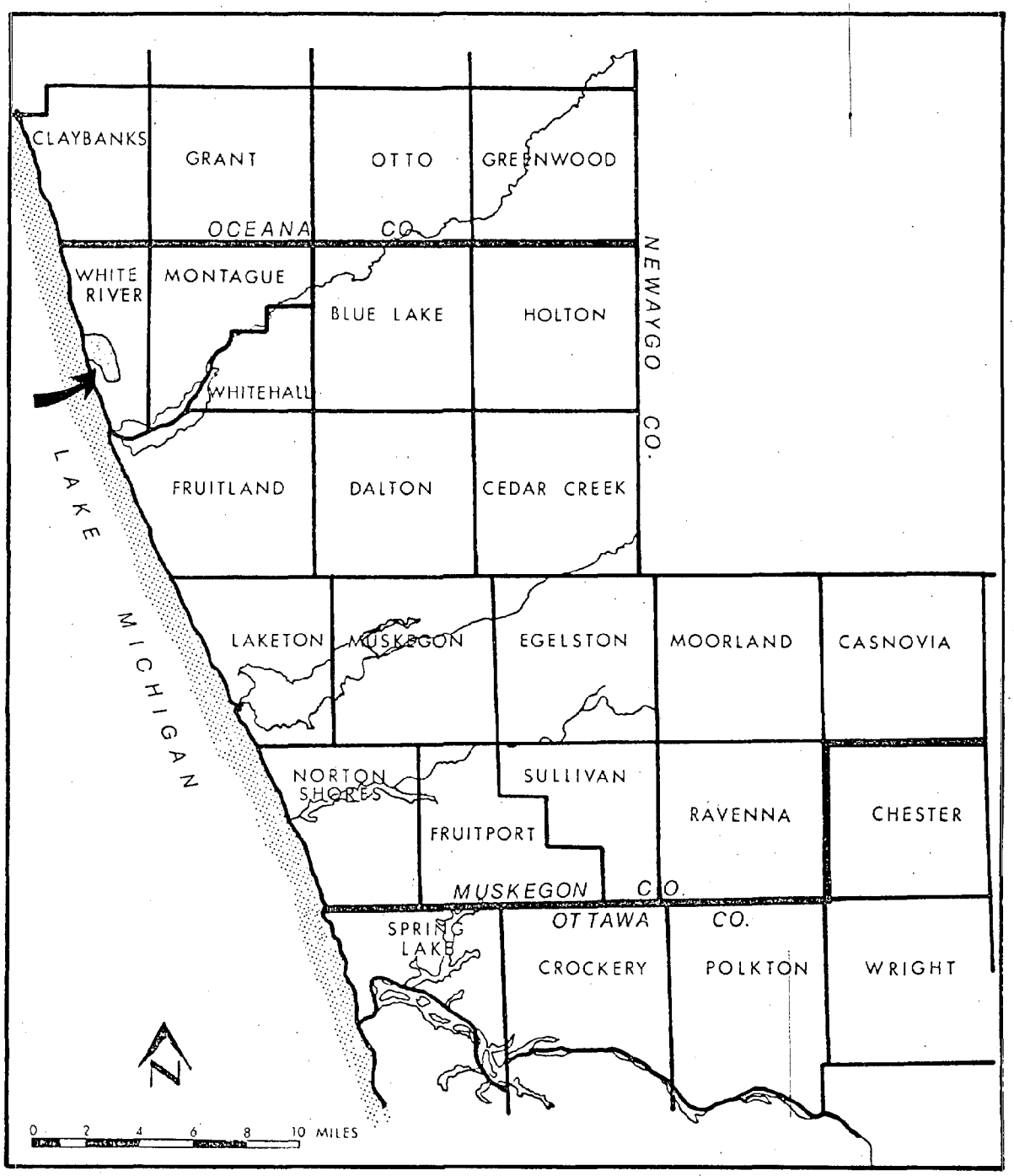


Figure III-72
General Location - White River Row Crops

36. White River Row Crops (cont.)

B. DESCRIPTION:

This area has approximately 1,050 acres in agricultural use. Most of the area is planted in row and broadcast crops such as corn and hay. The area borders residential development and the Old Channel Trail Golf Course located to the west along Lake Michigan. Land to the immediate south is primarily undeveloped. Areas to the north and east are split between being undeveloped and agricultural.

Figure III-73 describes the general White River area.

C. MAJOR CONCERNS:

There is a significant portion of White River Township which is recognized by the Muskegon County Soil Conservation Service as Prime Agricultural Lands. This APC is really just a small part of a much larger land area which is viewed as being a significant agricultural resource. This entire area is of regional concern, but only this portion falls within the Region 14's current Coastal Zone Boundary. The preservation of this agricultural area is a major interest.

D. MANAGEMENT NEEDS:

Zoning procedures would appear all that is immediately necessary to insure agricultural use. The Township does have a zoning ordinance and it does appear to be serving its intended function.

E. APC STATUS:

The White River Row Crops APC was originally assigned Low Regional Priority. Priority will remain Low given current management.

36. White River Row Crops (cont.)

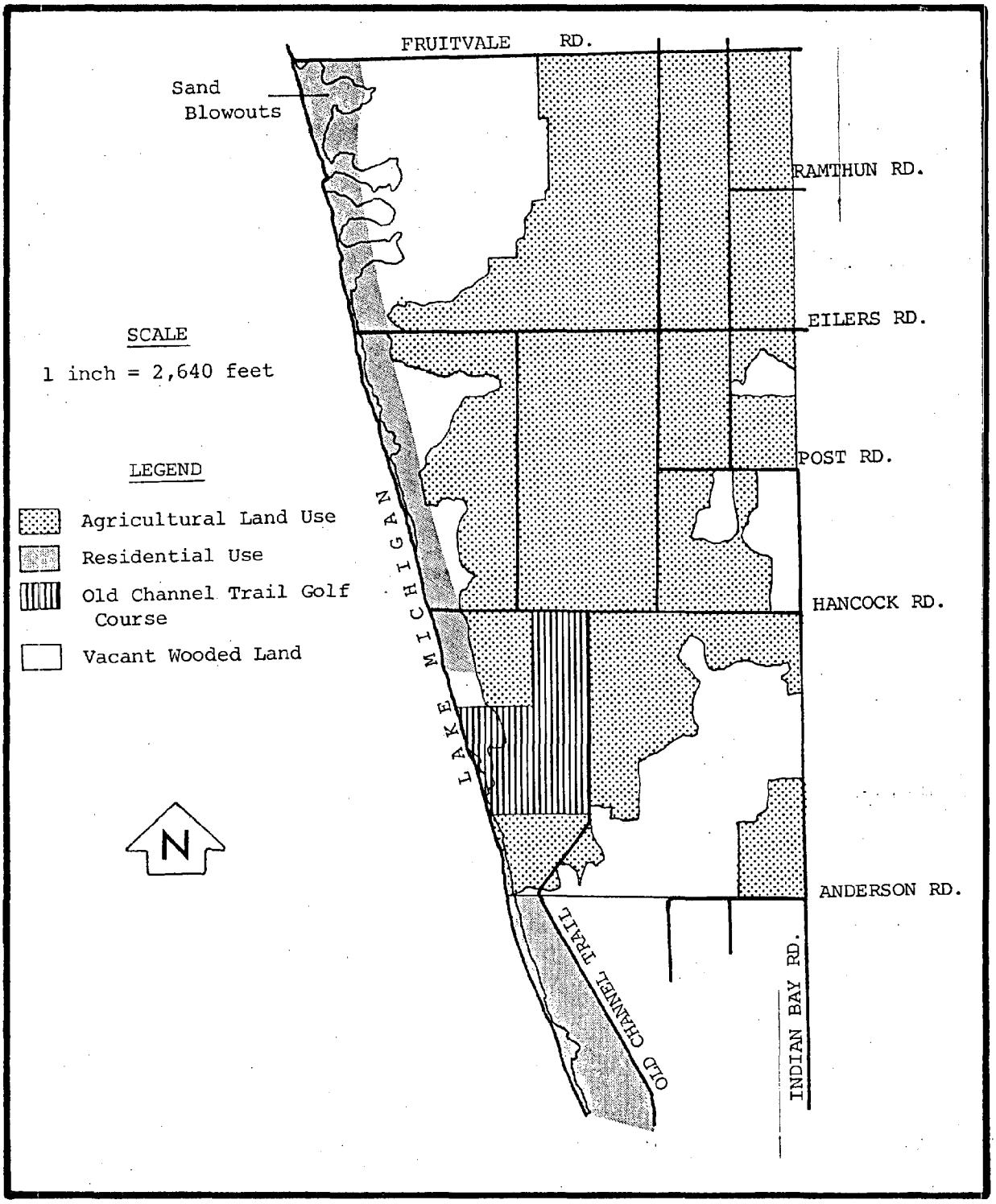
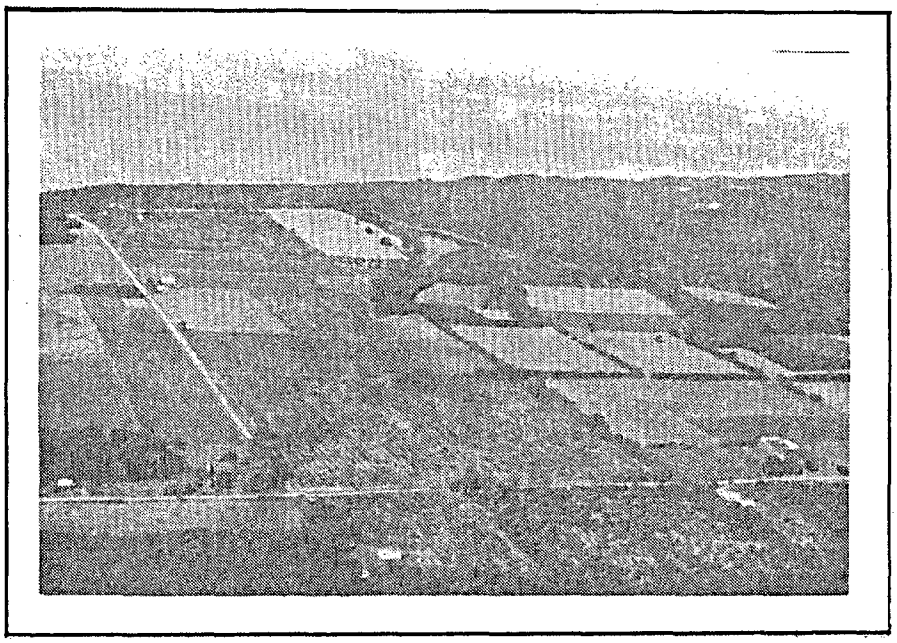


Figure III-73
Site Description
White River Row Crops

37. CLAYBANKS ORCHARDS AND ROW CROPS



Agriculture in the Claybanks Vicinity
Photograph III-45
AGRICULTURAL AREA OF PARTICULAR CONCERN

37. Claybanks Orchards & Row Crops

A. LOCATION: Claybanks Township, Oceana County
T13N-R18W-Sections 8, 9, 16, 21, 27, 28, 33, and 34.

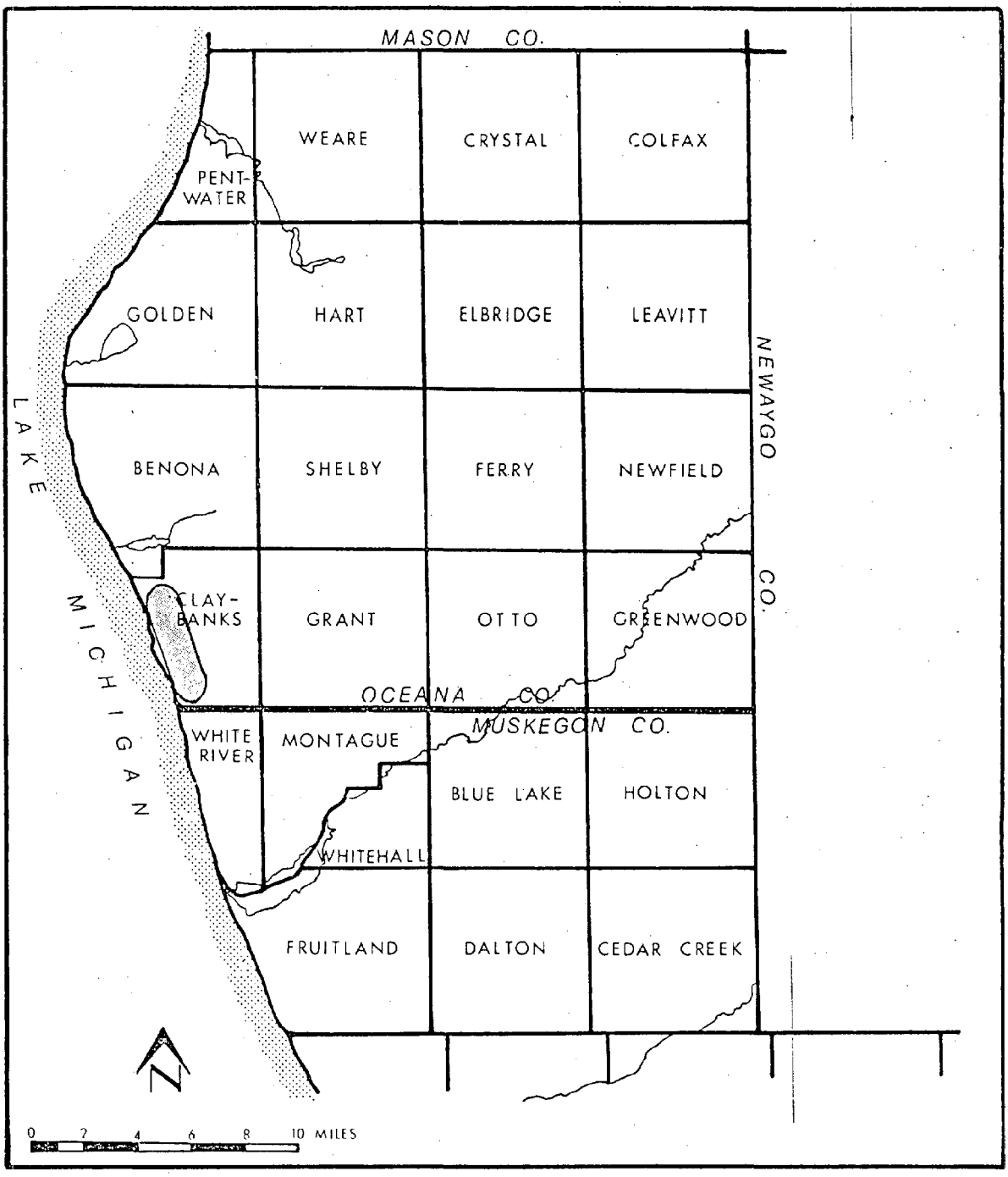


Figure III-74
General Location - Claybanks Orchards & Row Crops

37. Claybanks Orchards & Row Crops

B. DESCRIPTION:

This area has approximately 2,050 acres in agricultural use. Most of the area is planted in broadcast crops, but orchards and row crops are scattered throughout. The area borders Lake Michigan and narrow residential lakeshore development to the west. This area is surrounded by land of similar character.

This agricultural area is complemented by three additional APC's in this same vicinity: 1) Flower Creek, 2) Flower Creek Dunes, and 3) Claybanks Dunes. This area is truly one of the most scenic locations in the Region.

Figure III-75 shows the general Claybanks vicinity.

C. MAJOR CONCERNS:

The preservation of this very valuable agricultural area is a major concern. This APC is actually only part of a larger agricultural area having regional significance. Only the described portion falls within Region 14's current Coastal Zone Boundary.

D. MANAGEMENT NEEDS:

Claybanks Township has an operative zoning ordinance. This ordinance appears to be serving its intended function. There are some who feel this ordinance should take a stronger stand regarding shoreland development.

E. APC STATUS:

The Claybanks Orchards and Row Crops APC was originally assigned Low Regional Priority. Priority will remain Low given current local management efforts.

37. Claybanks Orchards and Row Crops (cont.)

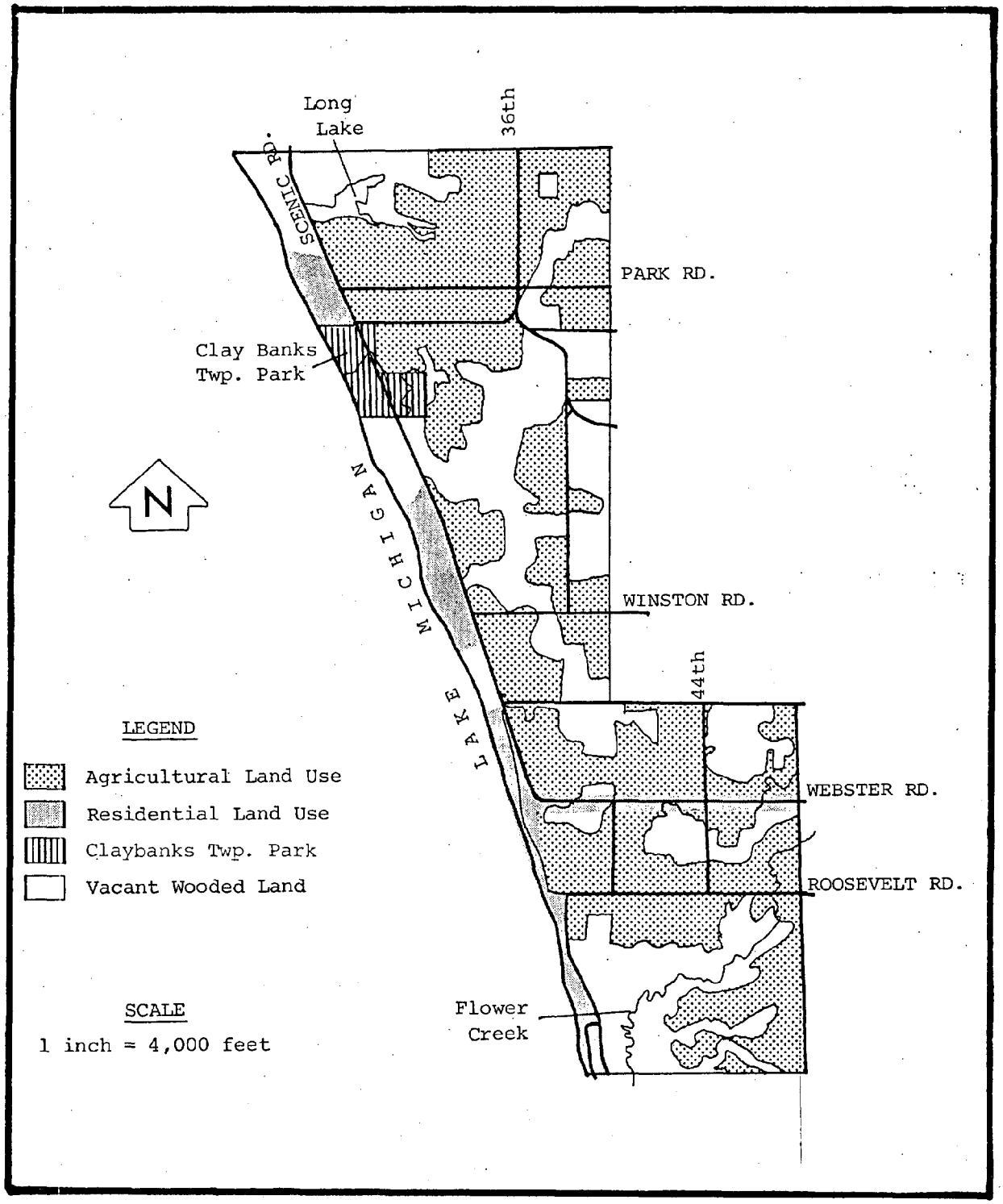
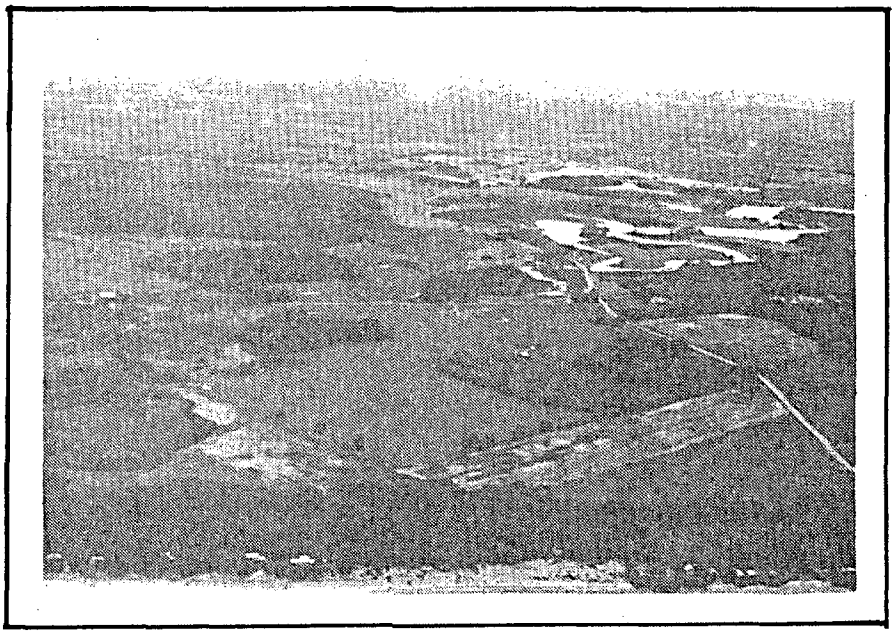


Figure III-75
Site Description
Claybanks Orchards and Row Crops

38. GOLDEN BROADCAST CROPS



Golden Township Agriculture
Photograph III-46
AGRICULTURAL AREA OF PARTICULAR CONCERN

38. Golden Broadcast Crops

A. LOCATION: Golden Township, Oceana County, T15N-R18W-Sections 8 and 17.

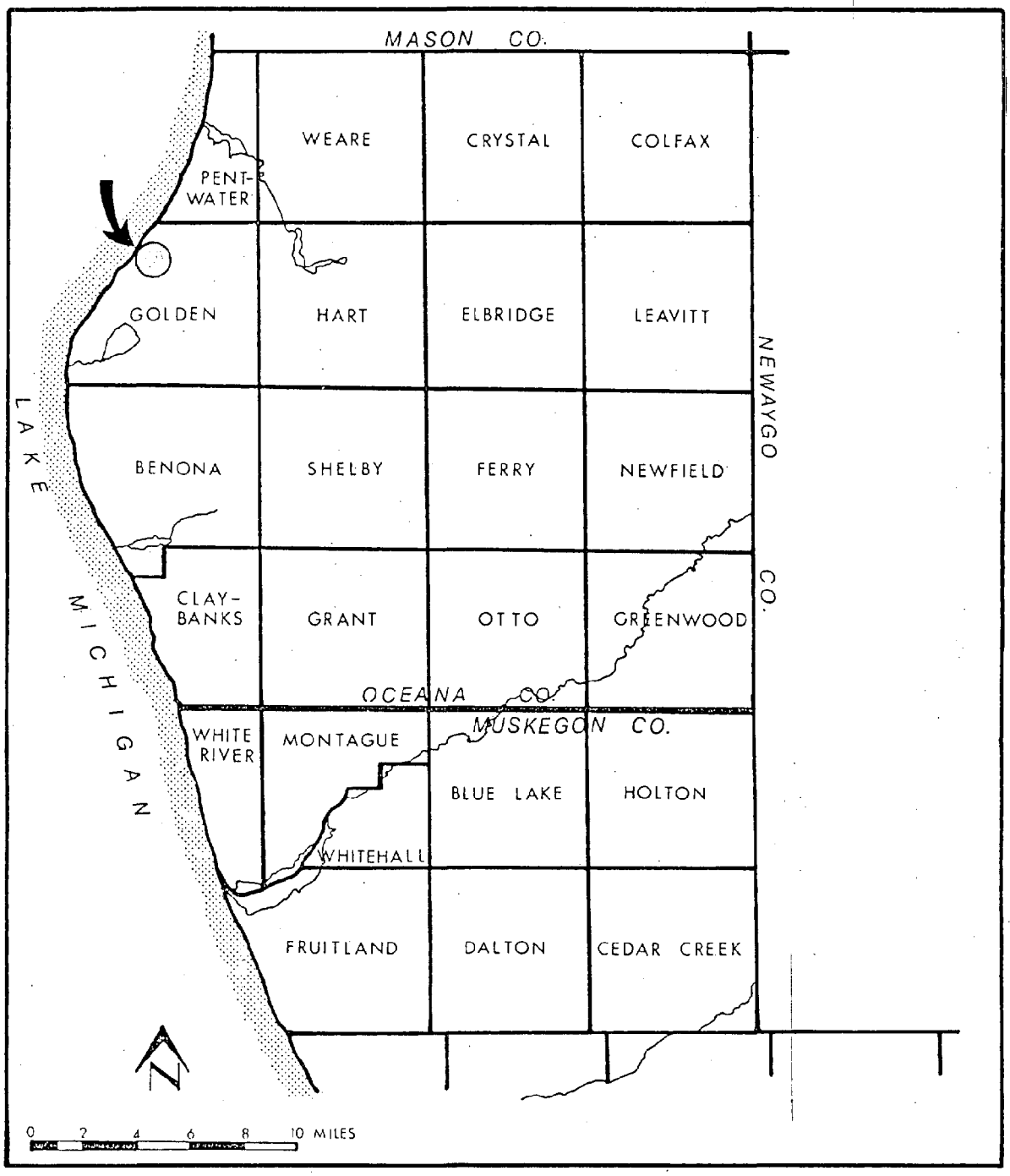


Figure III-76
General Location - Golden Broadcast Crops

38. Golden Broadcast Crops

B. DESCRIPTION:

This area has over 400 acres in agricultural use. The area is planted primarily in broadcast crops, but there are some row crops and small orchards scattered about. The area borders Lake Michigan and shoreline residents on the west. To the south is an active sand mining area and Silver Lake State Park, both of which are recognized APCs. To the north and east are more agricultural lands and large undeveloped properties.

Figure III-77 described the area's general land use pattern.

C. MAJOR CONCERNS:

This area is particularly vulnerable to development pressures. The preseration of valuable agricultural land is a major concern. This APC is only a small part of a much larger agricultural area of regional significance.

D. MANAGEMENT NEEDS:

A well structured and strictly enforced zoning ordinance would probably prove helpful in preserving this important agricultural area. Golden Township does not, however, have a zoning ordinance, nor do community members apparently want any such ordinance.

E. APC STATUS:

The Golden Broadcast Crops APC was originally assigned Low Regional Priority. Priority will remain Low awaiting future reaction to proposed management tools.

38. Golden Broadcast Crops (cont.)

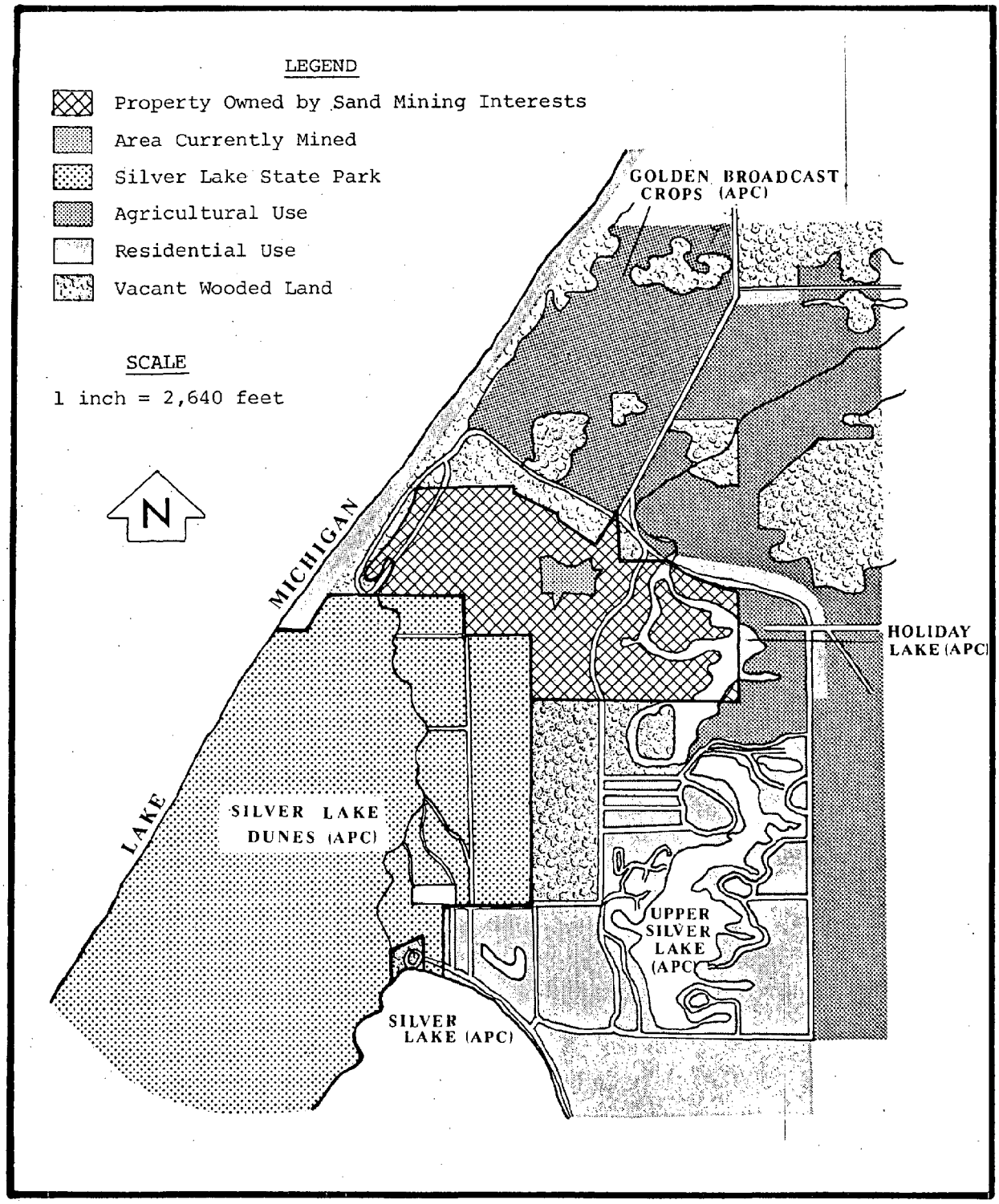
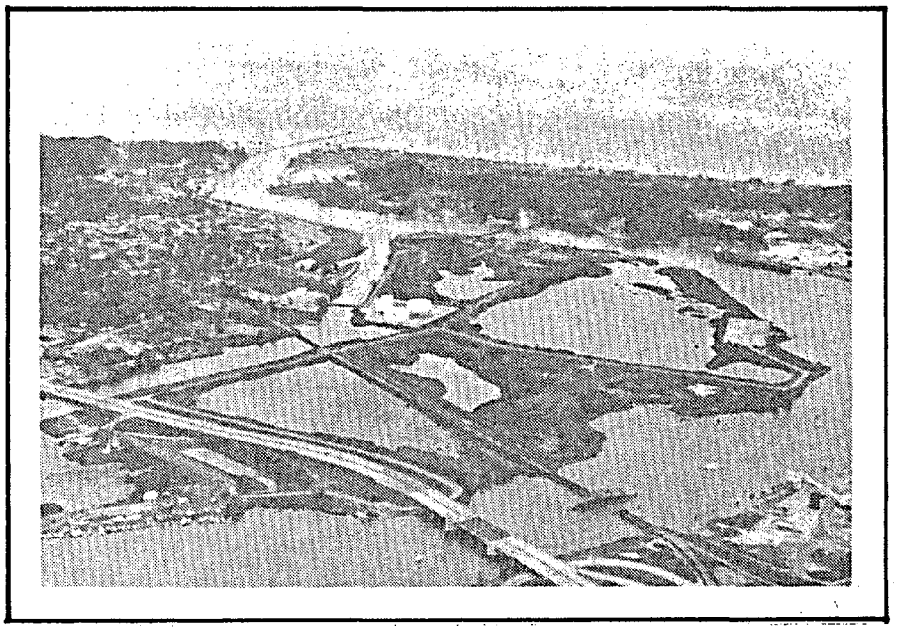


Figure III-77

Site Description - Golden Broadcast Crops

39. CITY OF GRAND HAVEN ISLAND PROPERTY



An Aerial View of Harbor Island
Photograph III-47
ISLAND AREA OF PARTICULAR CONCERN

39. City of Grand Haven Island Property

A. LOCATION: City of Grand Haven, Ottawa County. T8N-R16W-Sections 16, 17, 20, and 21.

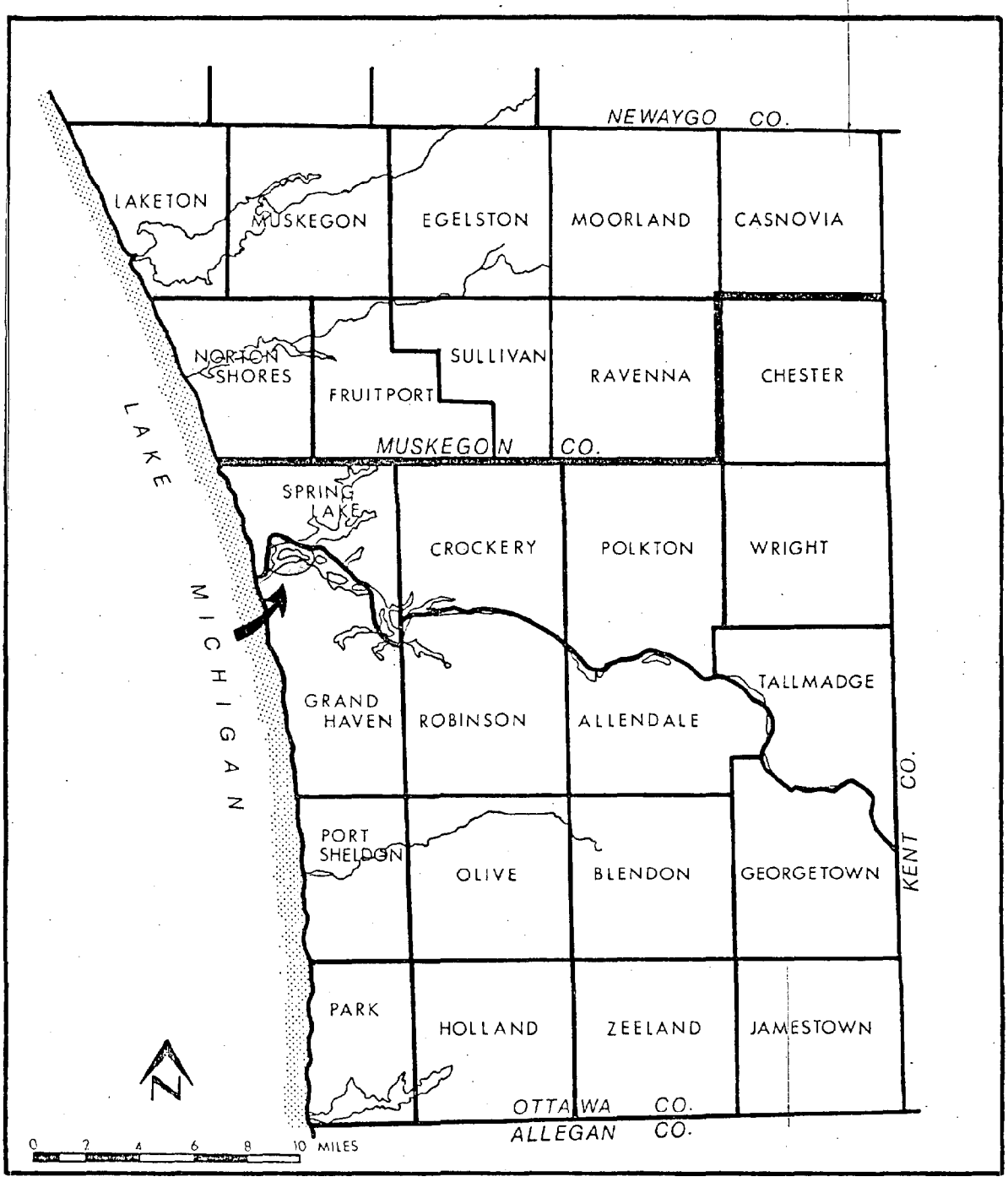


Figure III-78
General Location - City of Grand Haven Island Property

39. City of Grand Haven Island Property (cont.)

B. DESCRIPTION:

Harbor Island is within the City of Grand Haven and is located between the City of Ferrysburg and the Village of Spring Lake. The island comes close to being a peninsula formed by the meandering Grand River. The island area is, however, separated from the rest of Grand Haven by the "South Channel."

Much of the island is marsh and as such is attractive to a variety of waterfowl. The island was at one time used as a major municipal dump. It now contains petroleum storage facilities, an electric generating plant owned by the City and operated by the Grand Haven Board of Light and Power, an Army Corps of Engineers polluted dredge disposal site, the City's Rix Robinson Park (another APC), and a Municipal Boat Launching ramp. The entire Harbor Island area is approximately 300 acres, over half of which is currently flooded.

Figure III-79 shows the islands current land uses.

C. MAJOR CONCERNS:

Although small parcels of Harbor Island are privately owned, most of the land belongs to the City of Grand Haven. The City has made tentative arrangements with the Michigan Department of Natural Resources and the U.S. Army Corps of Engineers concerning filling the property and its future use for public purposes. There is a good chance that the area will be further developed for recreational use. The Grand Haven Board of Light and Power might also someday expand its present plant in response to increasing energy needs. Whatever happens to Harbor Island will, of course, be a concern.

D. MANAGEMENT NEEDS:

The development of a comprehensive long range management strategy for Harbor Island seems appropriate given its importance to the City of Grand Haven. Island development could conceivably affect reclamation efforts by Construction Aggregates at their sand mining site located just across the river. Island development might also have an effect

39. City of Grand Haven Island Property (cont.)

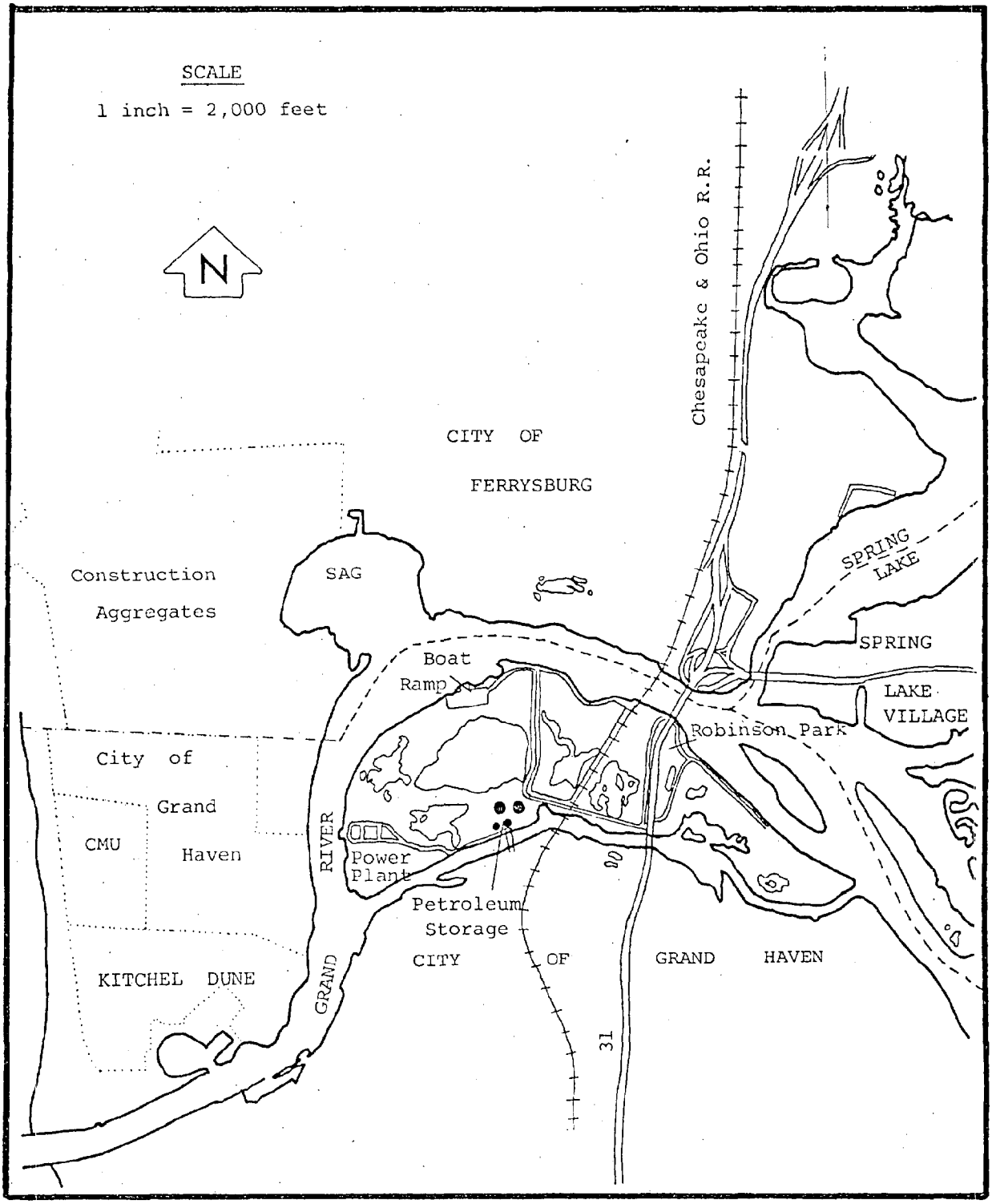


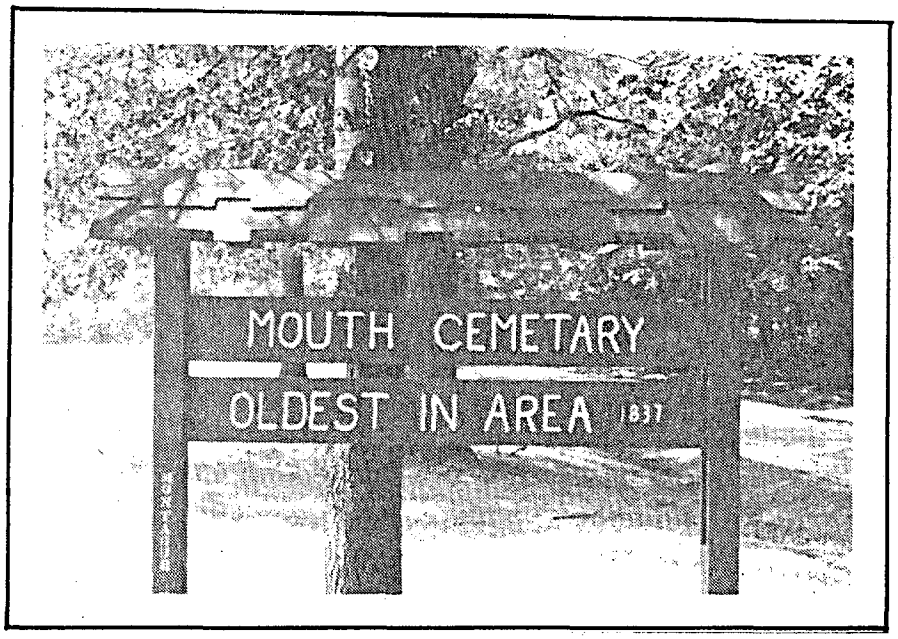
Figure III-79
Site Description
City of Grand Haven Island Property

upon the North Shore Dune Area also within the same general vicinity. These areas must be considered when formulating a Harbor Island development strategy.

E. APC STATUS:

The Harbor Island - City of Grand Haven Island Property, was originally assigned Low Regional Priority. There have been plans to deepen the Grand Haven Channel so as to accommodate larger commercial vessels. If the harbor is in fact deepened, Harbor Island might receive greater attention. This APC will, however, remain a Low Regional Priority awaiting future developments.

40. MOUTH CEMETERY



Entrance to Mouth Cemetery
Photograph III-48
HISTORIC SITE OF PARTICULAR CONCERN

40. Mouth Cemetery

A. LOCATION: White River Township, Muskegon County. T12N-R18W-Sections 22, 23, and 26.

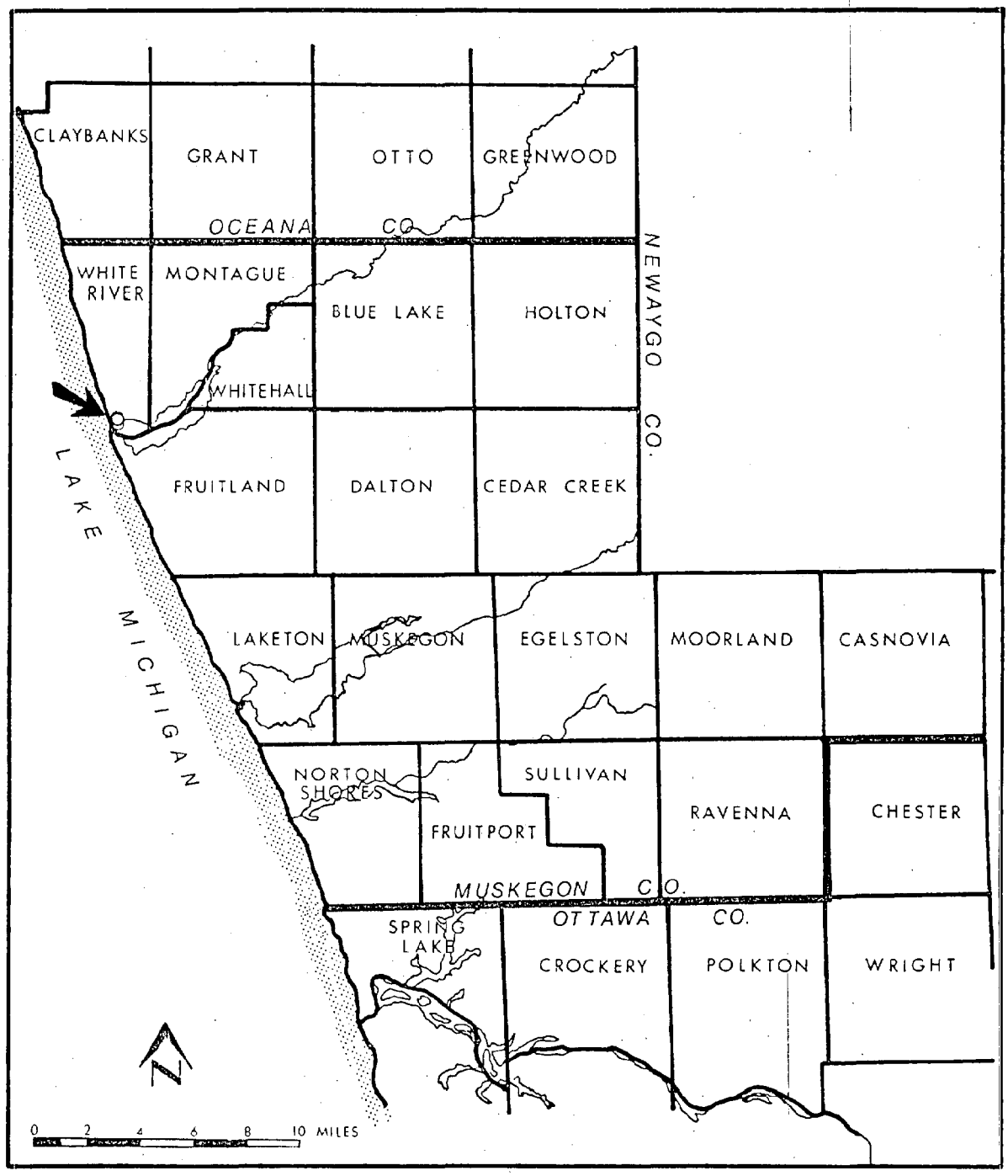


Figure III-80
General Location - Mouth Cemetery

40. Mouth Cemetery (cont.)

B. DESCRIPTION:

The Little Mouth Settlement was one of the first communities in Western Michigan, dating back to the 1830's. While the town folded in 1870, the cemetery is still there. It is located on a bluff which overlooks the Sadony Bayou and the old White Lake Channel (this Bayou and White Lake's old Channel is currently recognized as an APC). It is a small cemetery, "a resting place for indians, early settlers, children of Revolutionary War soldiers, and shipwrecked sailors."

Figure III-81 shows the cemetery's general relationship to adjacent land uses.

C. MAJOR CONCERNS:

Concerns center simply upon the preservation and continued maintenance of this historic APC.

D. MANAGEMENT NEEDS:

White River Township has an operational zoning ordinance. The Mouth Cemetery is recognized as a valued local historic site. There should be no problem in insuring its preservation, although there have been problems with its maintenance and upkeep. The cemetery is somewhat isolated and is infrequently visited. There isn't any regular caretaker. White River Township formed a Bicentennial Committee in 1976 and about 100 residents took part in clean up efforts at the site. Such occurances are rare.

E. APC STATUS:

The Mouth Cemetery APC was originally assigned Low Regional Priority. Nothing has happened to change this original prioritization.

40. Mouth Cemetery (cont.)

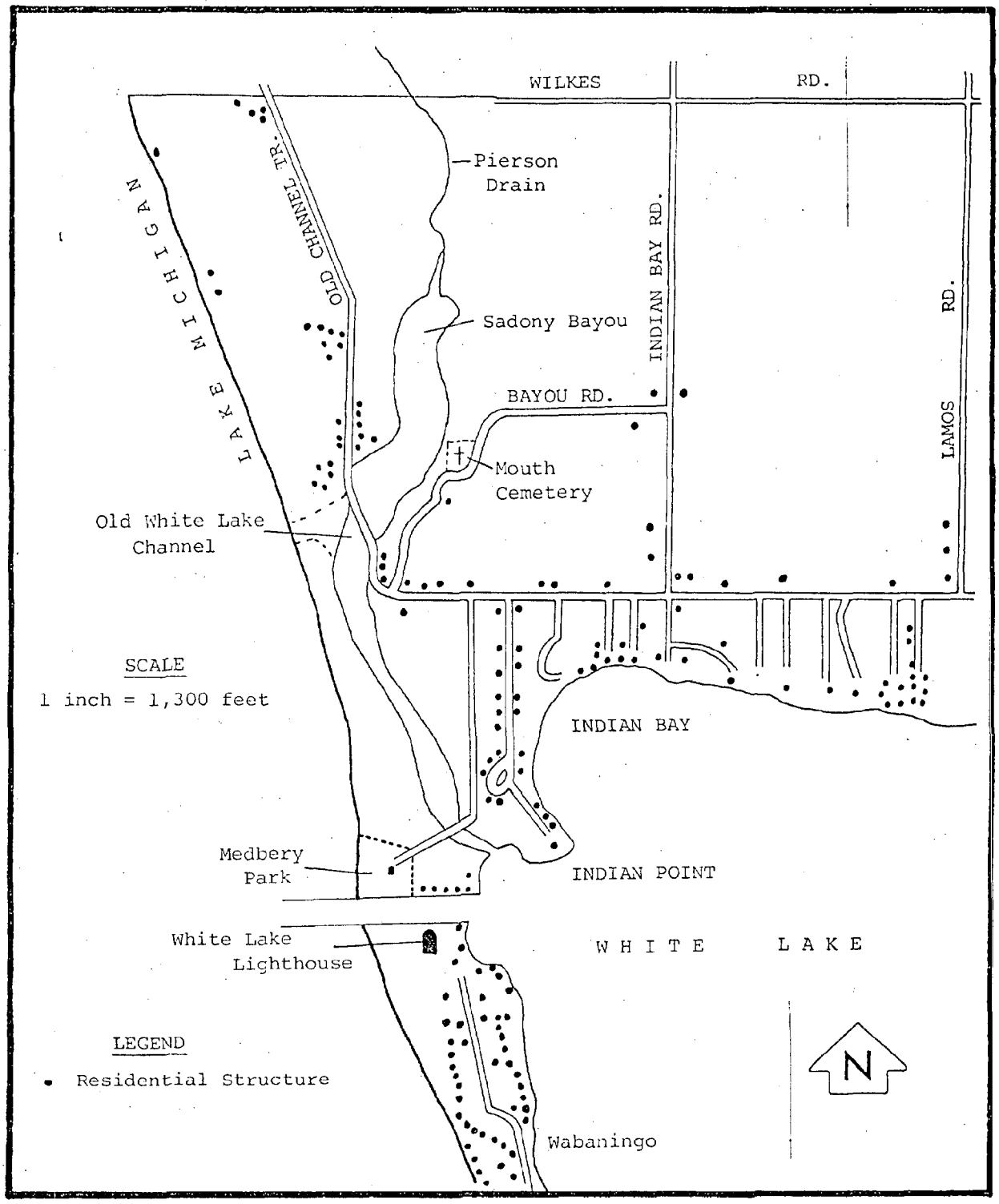
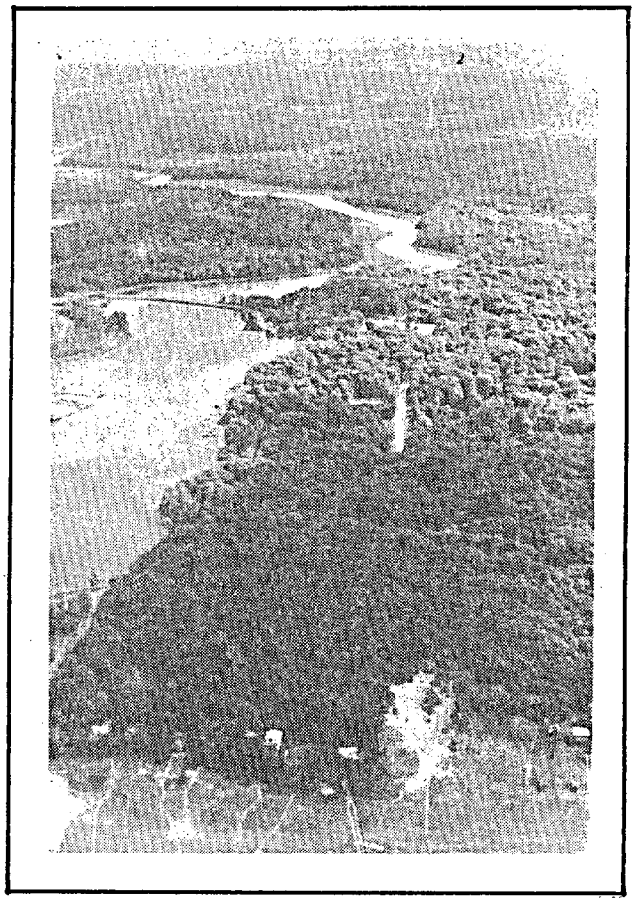


Figure III-81
Site Description
Mouth Cemetery

41. PORT SHELDON



Photograph III-49
Site of Port Sheldon Settlement

HISTORIC SITE OF PARTICULAR CONCERN

41. Port Sheldon

A. LOCATION: Port Sheldon Township, Ottawa County. T6N-R16W-Section 15 and 16.

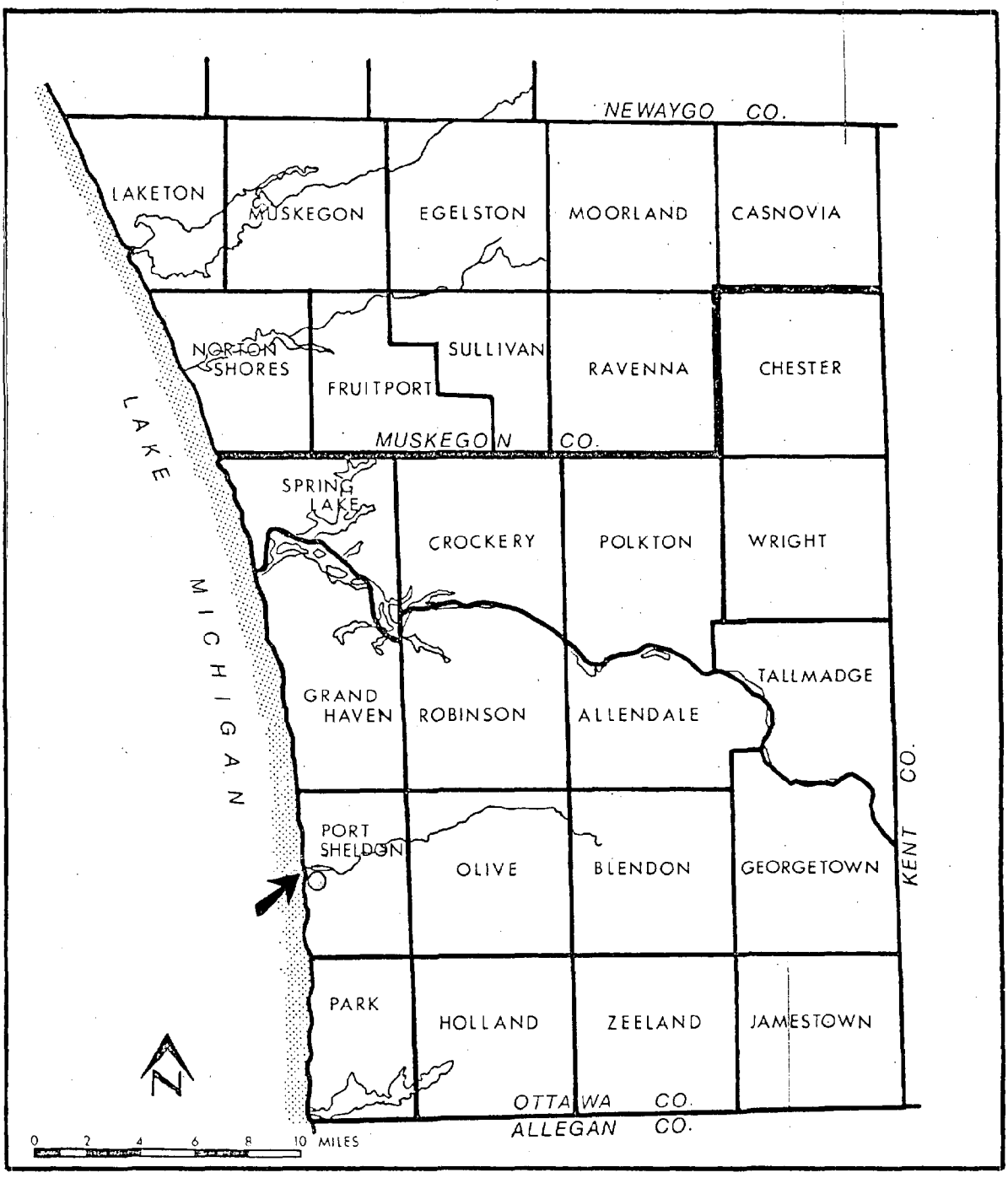


Figure III-82
General Location - Port Sheldon

41. Port Sheldon (cont.)

B. DESCRIPTION:

The Port Sheldon area south of Pigeon Lake was settled as early as 1836. Little is known about this early settlement other than it was a pilot city built in what was once wilderness. It has since been developed as a residential subdivision for primarily seasonal and cottage use. The area north of Pigeon Lake is now the site of the Consumers Power - J. H. Campbell electric generating plant.

Figure III-83 describes the area's general land use pattern.

C. MAJOR CONCERNS:

Concerns center upon the preservation and reclamation of historic values. Much more information is needed regarding this area's past. Depending upon the situation, some areas might be set aside because of their historic significance. Residents might want to reconstruct some of the more noteworthy landmarks associated with this now relic community.

D. MANAGEMENT NEEDS:

We must first investigate further into the significance of this historic site. We need more information regarding how this area originally looked. We need to determine whether or not specific management techniques are necessary or wanted.

E. APC STATUS:

The Port Sheldon APC was originally assigned Low Regional Priority. Nothing has happened to change this original prioritization.

41. Port Sheldon (cont.)

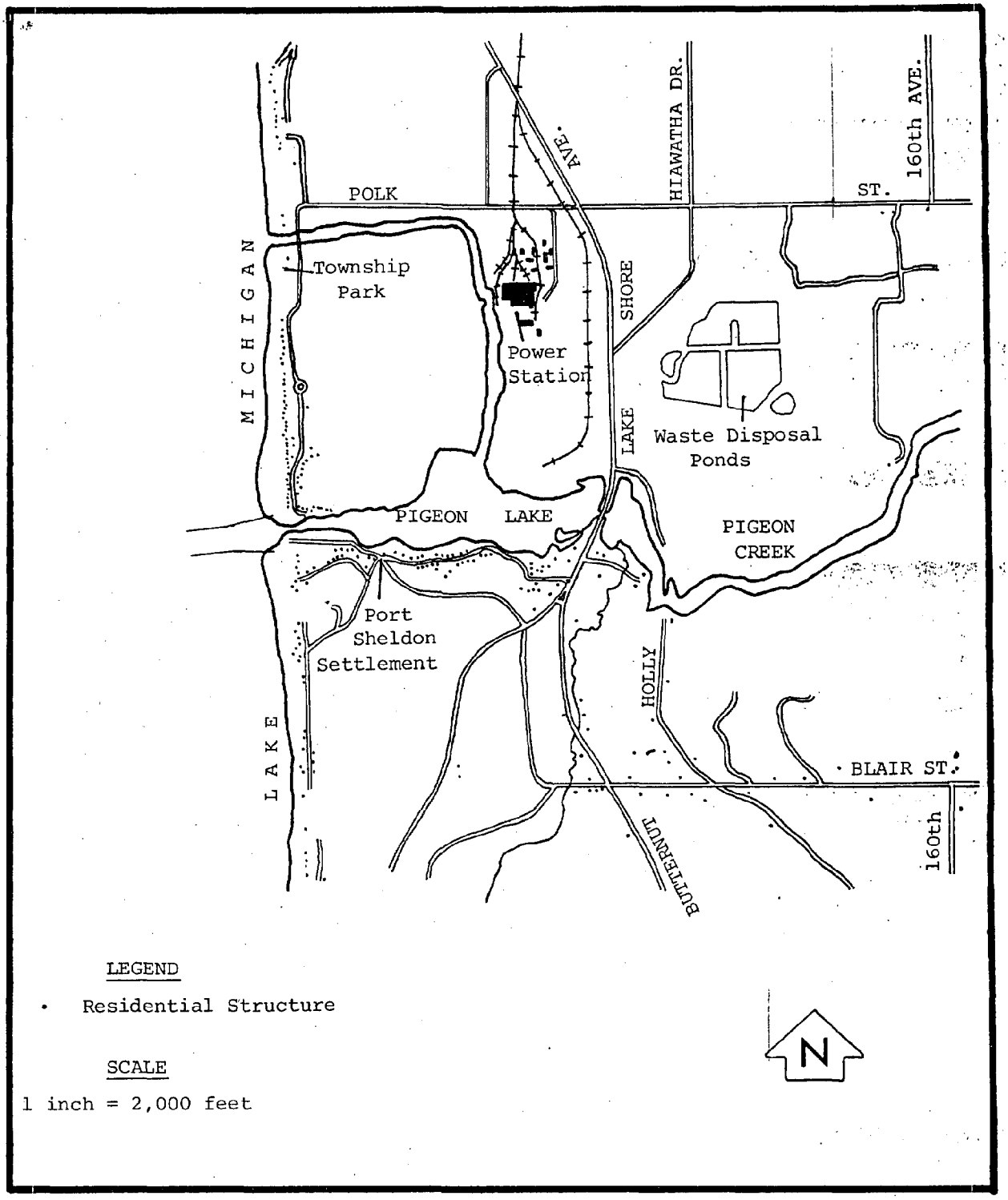
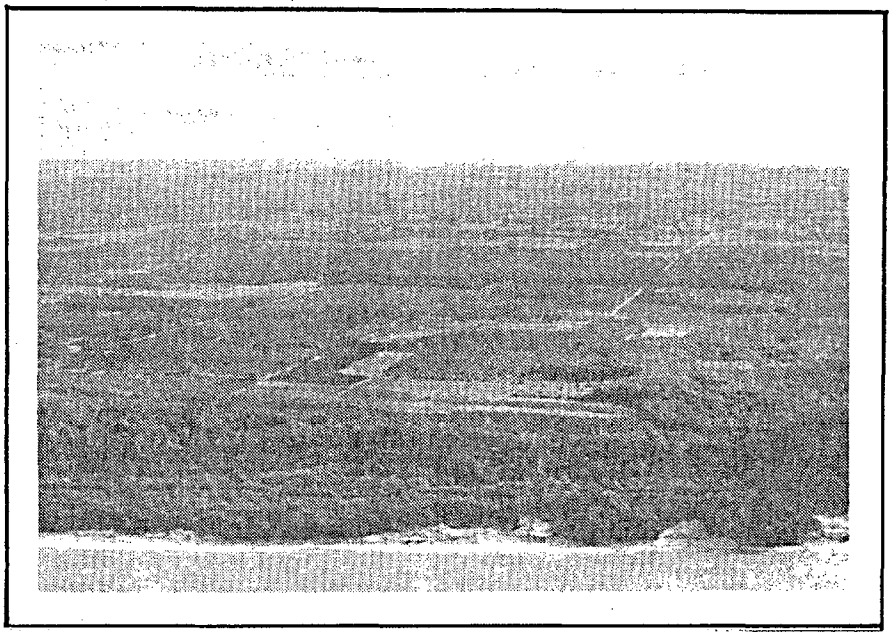


Figure III-83
Site Description
Port Sheldon

42. Indian Mounds



Aerial View of Indian Mound Vicinity
Exact Location Was Not Revealed

Photograph III-50

HISTORIC AND ARCHAEOLOGIC SITE OF PARTICULAR CONCERN

42. Indian Mounds

A. LOCATION: Benona Township, Oceana County. TBN-R18W-Section 5.

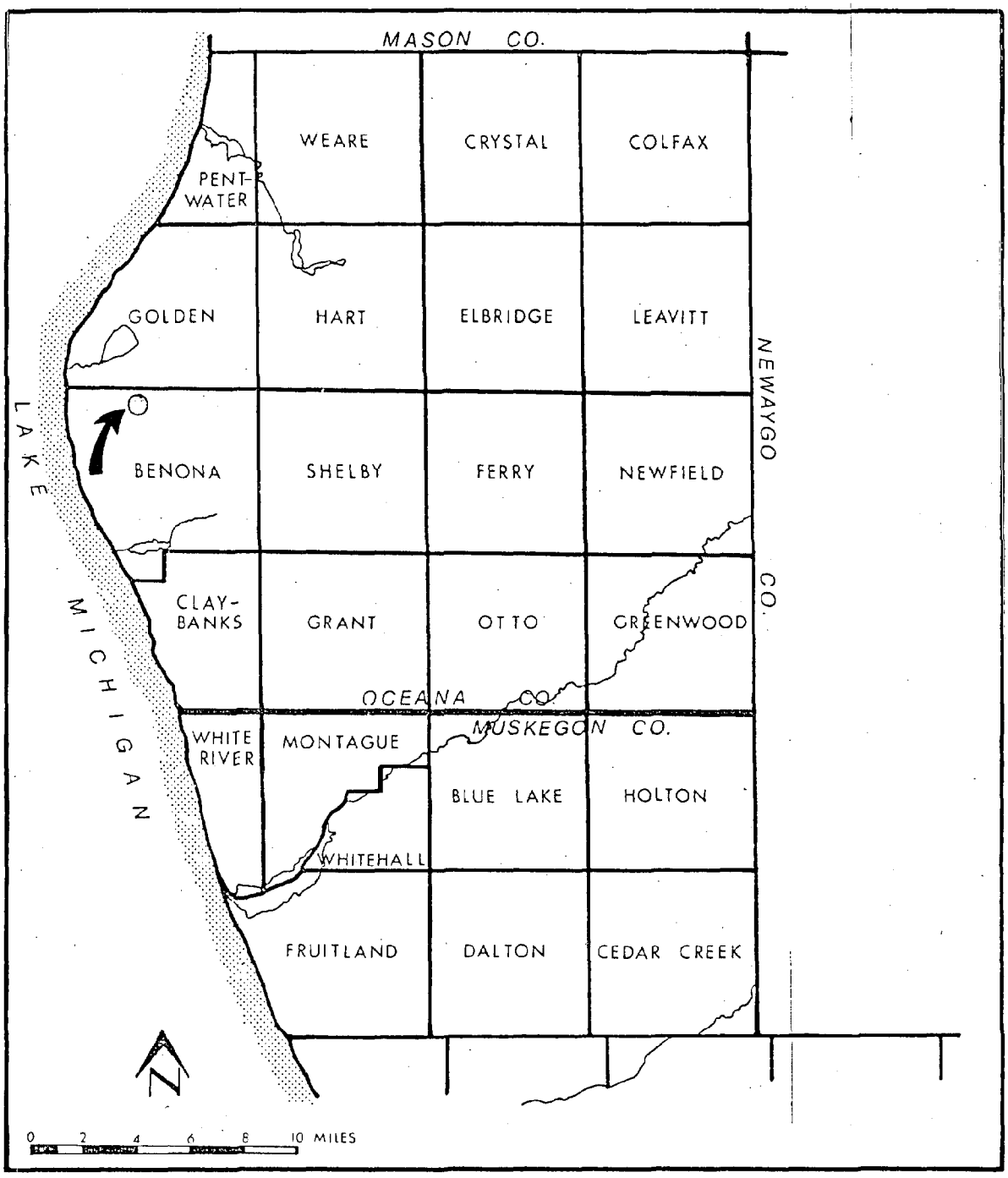


Figure III-84
General Location - Indian Mounds

42. Indian Mounds (cont.)

B. DESCRIPTION:

This APC is only generally described because the exact location of this Indian burial site has not been revealed. Approximately 480 acres of Benona Township's section 5 is in agricultural use. The remaining 160 acres is heavily wooded and vacant. Warren Road and 28th Avenue provide the only access to this area.

Figure III-85 shows the area's general land use.

C. MAJOR CONCERNS:

We are, of course, primarily concerned with the preservation of the historic and archaeologic site. We need more study and investigation concerning this area and its significance.

D. MANAGEMENT NEEDS:

Benona Township does not at present have a zoning ordinance or any long range planning strategy. Such an ordinance and its accompanying development strategy would be instrumental in any preservation attempts. We need to know more about the site before we could institute any detailed management techniques.

E. APC STATUS:

The Benona Township Indian Mounds were originally assigned Low Regional Priority. Since this area was first recognized as an APC, the Region 14 Coastal Zone has been narrowed somewhat in an attempt to concentrate planning efforts to a more specfic coastal related vicinity. The Benona Township Indian Mound currently falls outside the Region 14 Coastal Zone Boundary. The boundary might be modified to accommodate this area if local interests warrant such consideration.

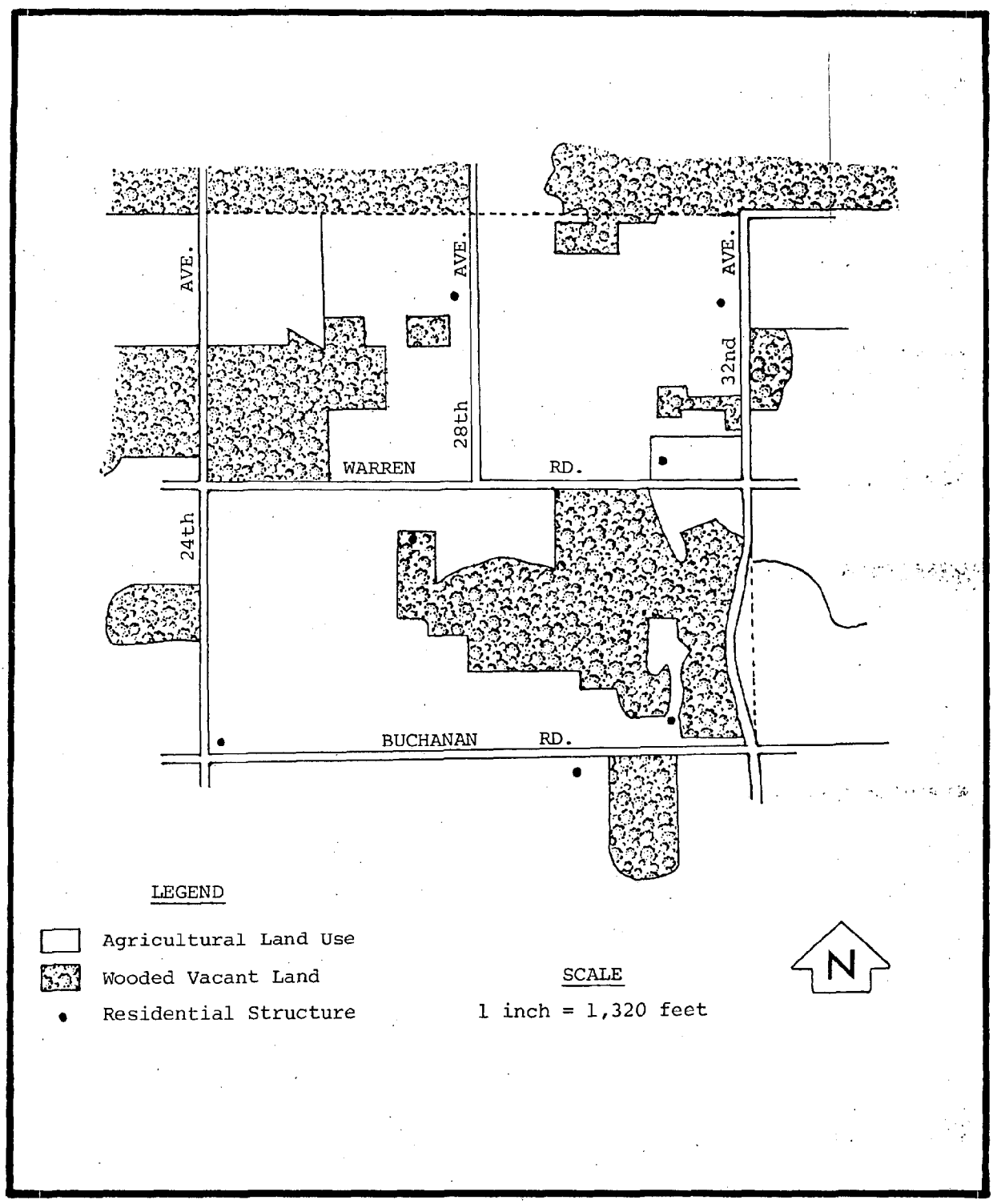
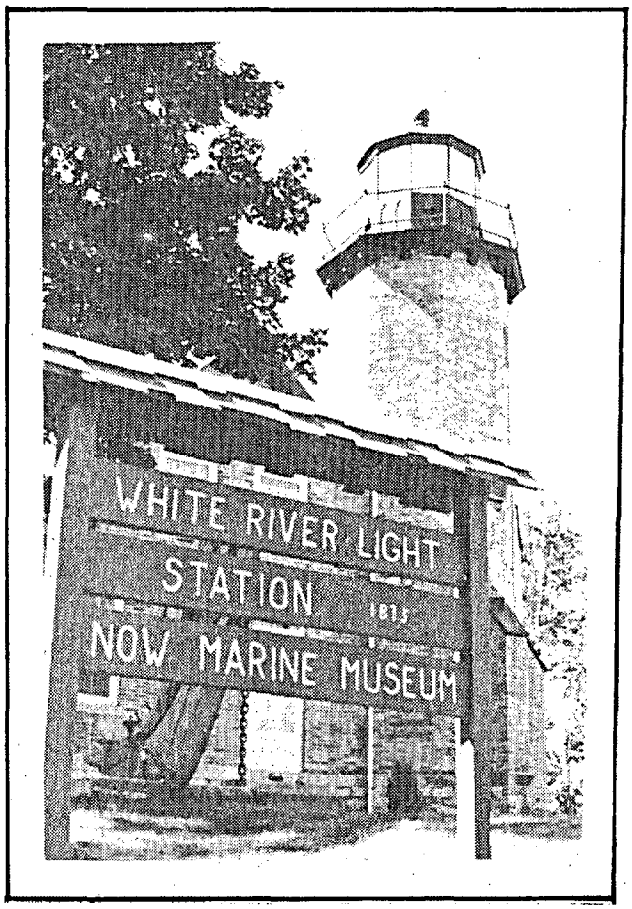


Figure III-85
Site Description
Indian Mounds

43. WHITE LAKE LIGHTHOUSE



Photograph III-51
White Lake Light Station Marine Museum
HISTORIC SITE OF PARTICULAR CONCERN

43. White Lake Lighthouse

A. LOCATION: Fruitland Township, Muskegon County. T11N-R18W-Section 2.

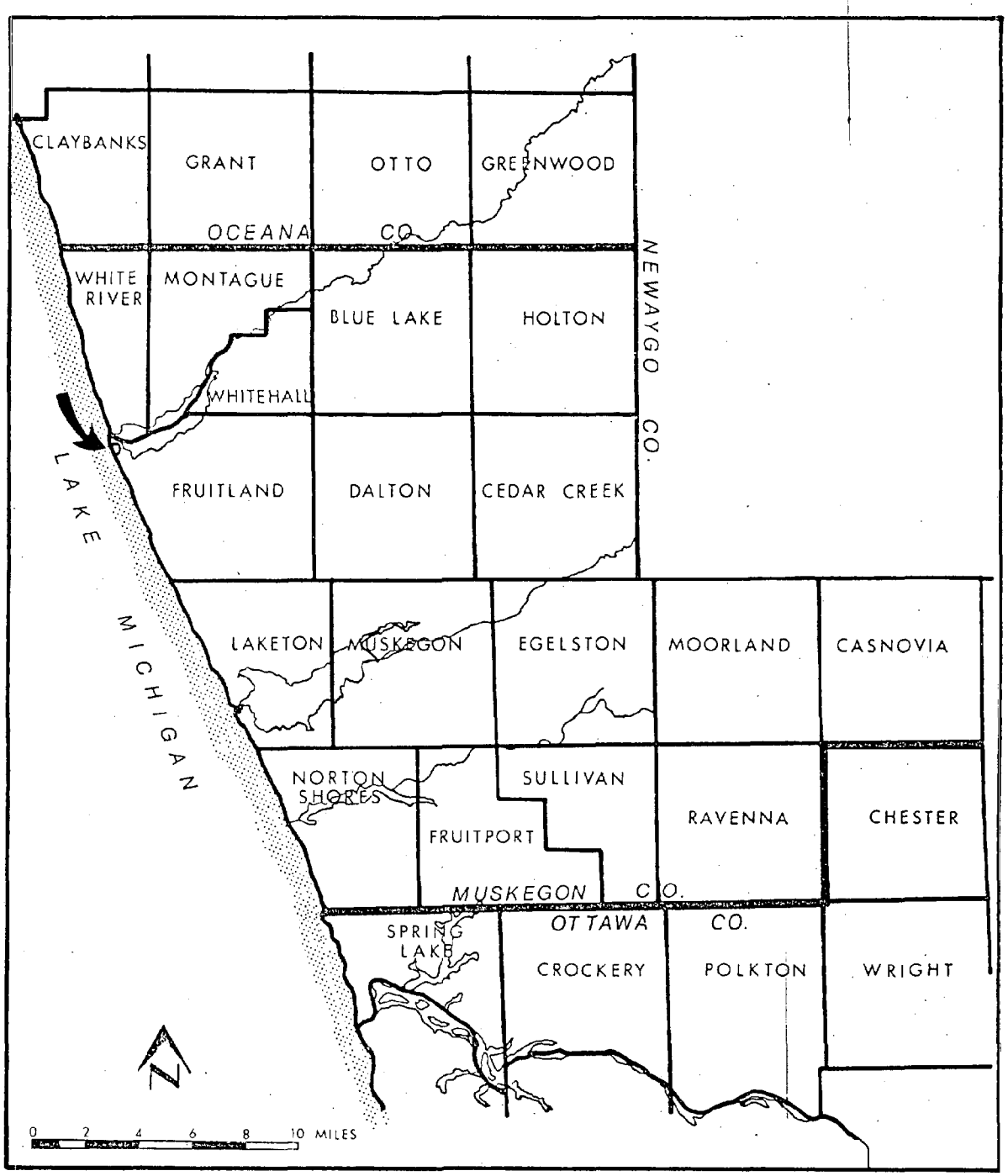


Figure III-86

General Location - White Lake Lighthouse

43. White Lake Lighthouse (cont.)

B. DESCRIPTION:

The White Lake Lighthouse sits on the southern side of White Lake Channel between White Lake and Lake Michigan. It is owned and maintained as a marine museum by Fruitland Township. The Township has for many years allowed a caretaker to reside at the lighthouse rent free in return for maintenance and museum operation.

The lighthouse and life boat station are representatives of masonary construction common during the 1800's. Nautical artifacts are continually being collected as part of the marine museum. Tours are operated throughout the summer months with donations accepted.

Residential development lies adjacent to and south of the lighthouse. The light station is, in fact, part of the old Wabaningo settlement, still a viable resort community. Figure III-86 describes the general area which surrounds the lighthouse. Photograph III-47 shows the structure as it exists today, nestled within its wooded setting.

C. MAJOR CONCERNS:

The continued preservation of the lighthouse and its use as a marine museum are the major concerns directed toward this APC. The Fruitland Township Park Commission has a limited budget and is often unable to purchase desired artifacts.

D. MANAGEMENT NEEDS:

Existing management is both appropriate and adequate. Fruitland Township would, of course, like to acquire additional maritime antiques.

E. APC STATUS:

The White Lake Lighthouse APC was originally assigned Medium Regional Priority in support of Fruitland Township's persistent management efforts. The West Michigan Shoreline Regional Development Commission continues to support Fruitland Township and recognizes that the Township is doing virtually everything that should be done to preserve this historic site. The Commission has therefore lowered its priority from Medium to Low.

43. White Lake Lighthouse (cont.)

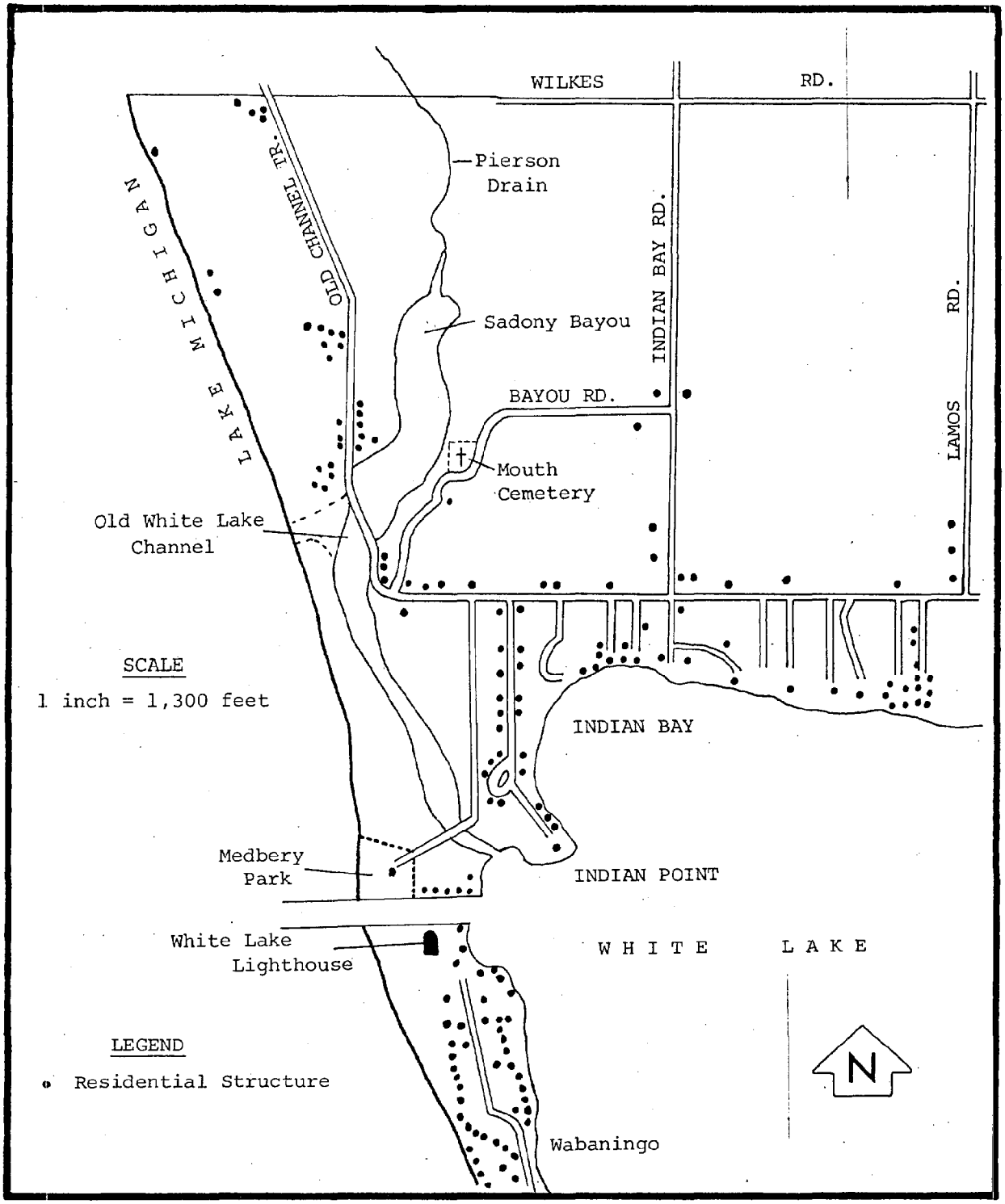


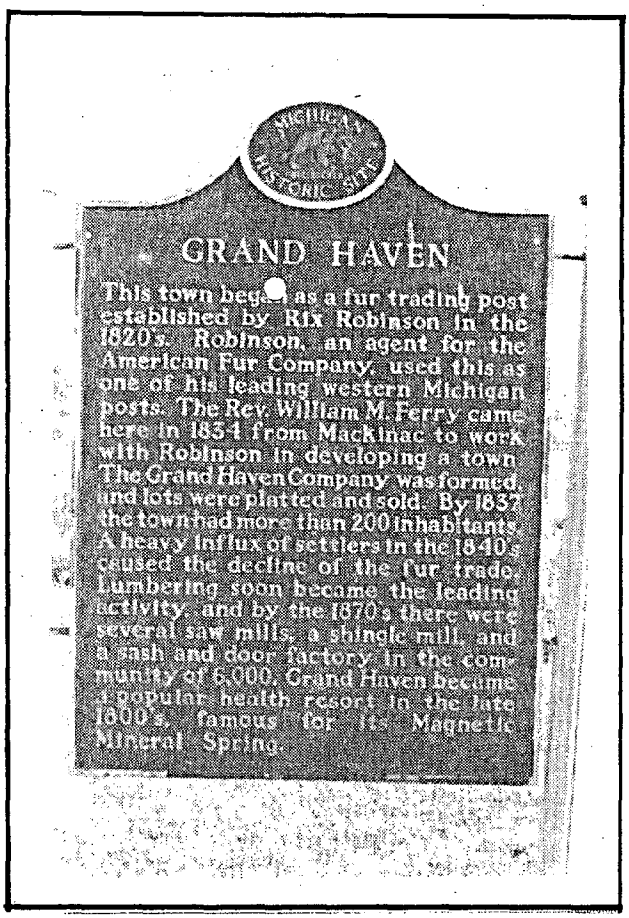
Figure III-87

Site Description - White Lake Lighthouse

43. White Lake Lighthouse (cont.)

Photograph III-52
White Lake Lighthouse Setting

44. RIX ROBINSON TRADING POST



Photograph III-53

Sign Commemorating the Rix Robinson Trading Post

HISTORIC SITE OF PARTICULAR CONCERN

44. Rix Robinson Trading Post

A. LOCATION: City of Grand Haven, Ottawa County. T8N-R16W-Section 30.

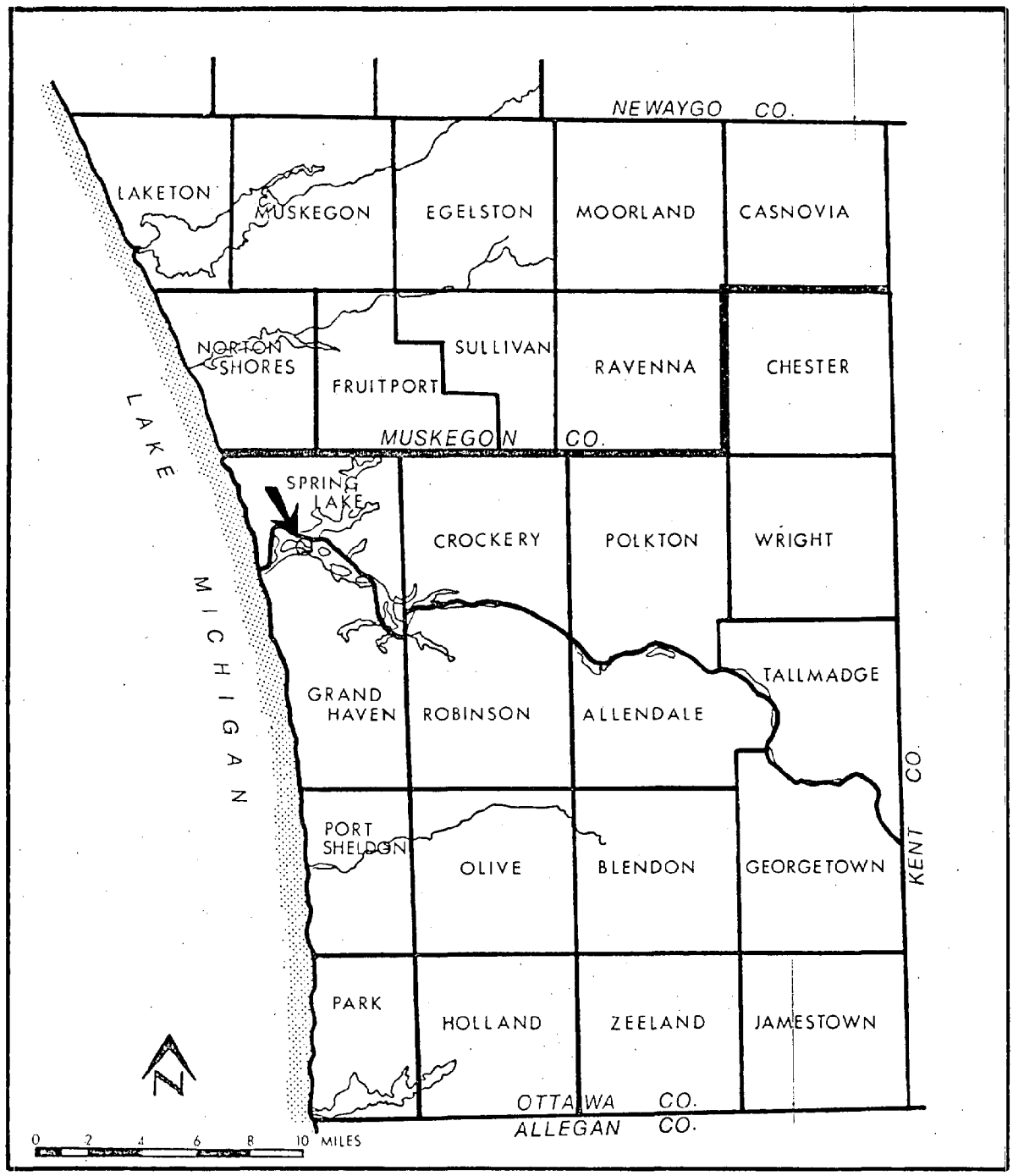


Figure III-88

General Location - Rix Robinson Trading Post

44. Rix Robinson Trading Post (cont.)

B. DESCRIPTION:

The Rix Robinson Trading Post was built sometime in the early 1820's. The actual structure no longer exists, but its site is still recognized as an important local historic area. The area is located just east of U.S. 31 on Harbor Island. It has been developed as a 5.5 acre park by the City of Grand Haven. It is a picnic area equiped with a boat launch. It serves as an ice rink during the winter months.

Figure III-89 shows the Rix Robinson Park and its general vicinity.

C. MAJOR CONCERNS:

The preservation and maintenance of this historic area is a major concern. With this in mind, the City of Grand Haven has shown an interest in further developing the site for recreation use. The only problem which currently limits such use is occasional flooding.

D. MANAGEMENT NEEDS:

The City of Grand Haven has indicated that they will request financial assistance from the Michigan Department of Natural Resources under its (306) Coastal Zone Management Program. The City hopes to use these funds to develop a recreation plan for the Rix Robinson Park area.

E. APC STATUS:

The Rix Robinson Trading Post APC was originally assigned Low Regional Priority. However, the West Michigan Shoreline Regional Development Commission wishes to support the City of Grand Haven in its recent efforts toward the development of the current Rix Robinson Park. The Commission, therefore, increases its assigned priority from Low to Medium.

44. Rix Robinson Trading Post (cont.)

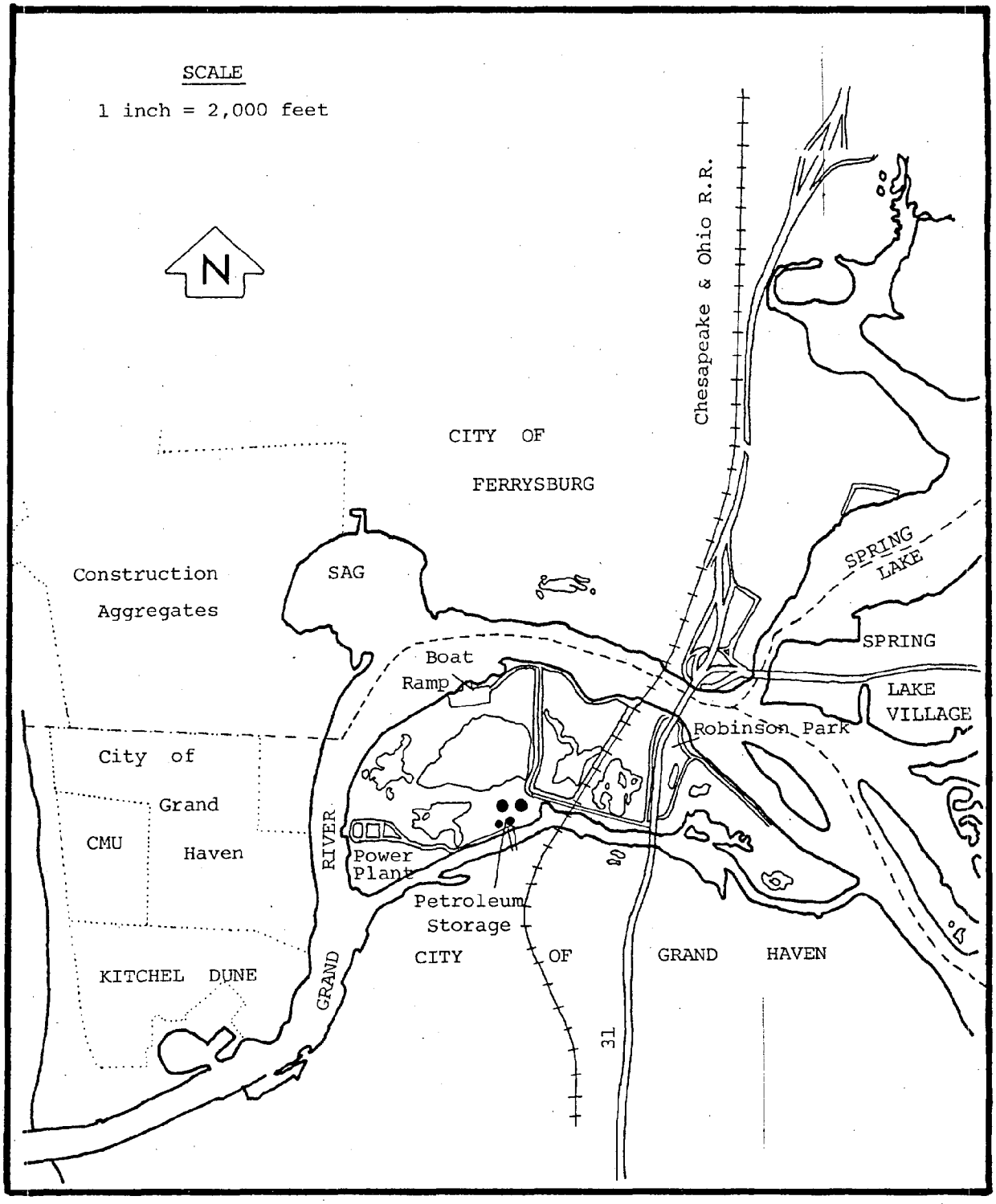


Figure III-89

Site Description - Rix Robinson Trading Post

45. GRAND HAVEN LIGHTHOUSE AND PIER

Roll #3 13-13A

Photograph III-54
Grand Haven Lighthouse and Pier

HISTORIC SITE OF PARTICULAR CONCERN

45. Grand Haven Lighthouse and Pier

A. LOCATION: City of Grand Haven, Ottawa County. T8N-R16W-Section 30.

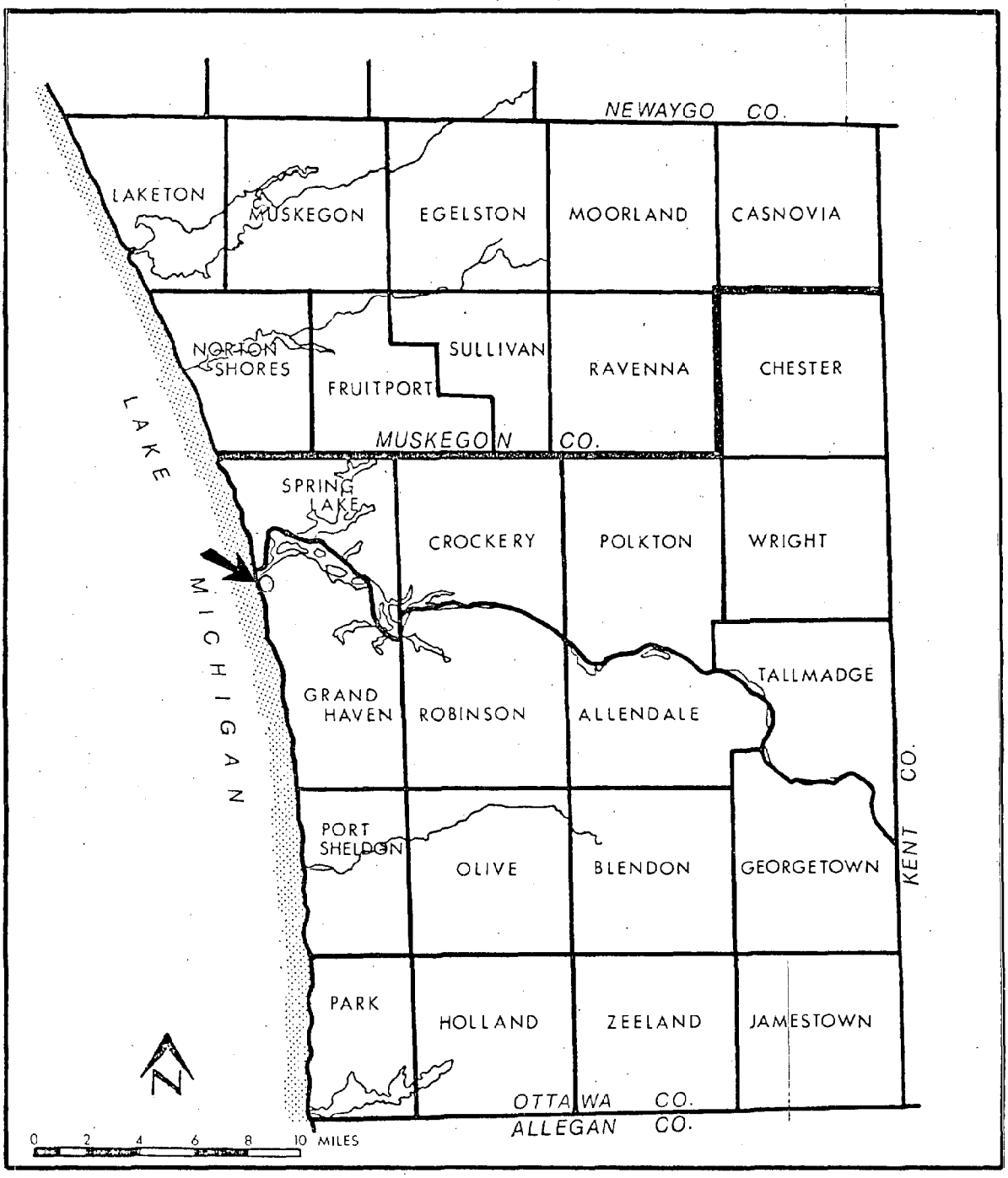


Figure III-90
General Location - Grand Haven Lighthouse and Pier

45. Grand Haven Lighthouse and Pier (cont.)

B. DESCRIPTION:

The Grand Haven Lighthouse and Pier are located on the southern side of the Grand River Channel at its mouth. These structures were built in 1838 and are recognized as important historical and recreational landmarks. The Lighthouse is still operated for navigation purposes. The pier is heavily used by fishermen and tourists.

Figure III-91 describes the general vicinity which surround this APC.

C. MAJOR CONCERNS:

Again, the preservation and maintenance of this historic landmark is a major concern. These structures still serve a useful and valued purpose.

D. MANAGEMENT NEEDS:

Existing management would seem appropriate. The use of the pier during heavy storms has caused some safety problems which might easily be handled if warranted.

E. APC STATUS:

The Grand Haven Lighthouse and Pier was originally assigned Low Regional Priority given existing management and continuous maintenance. Regional Priority will remain Low for the immediate future.

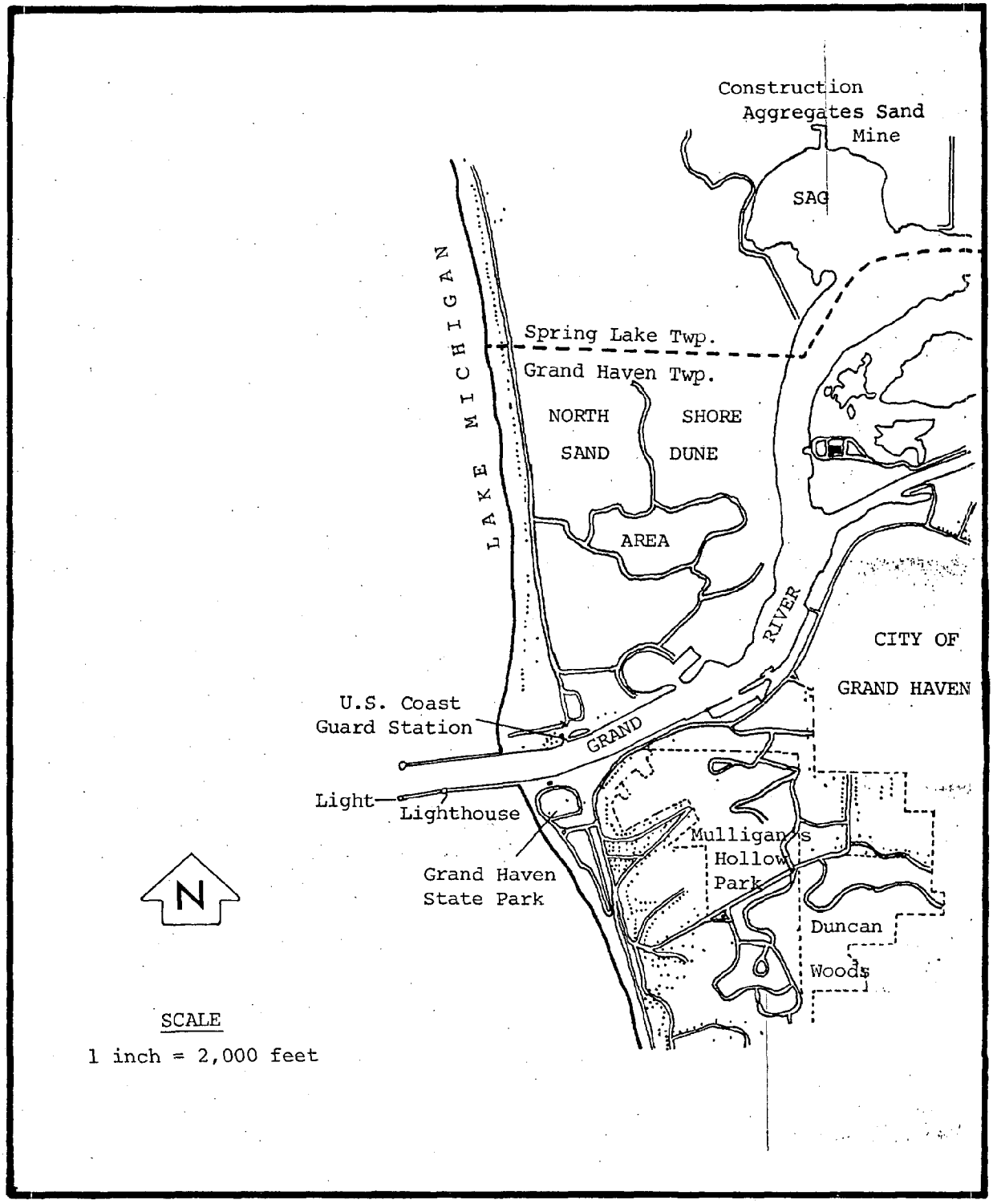
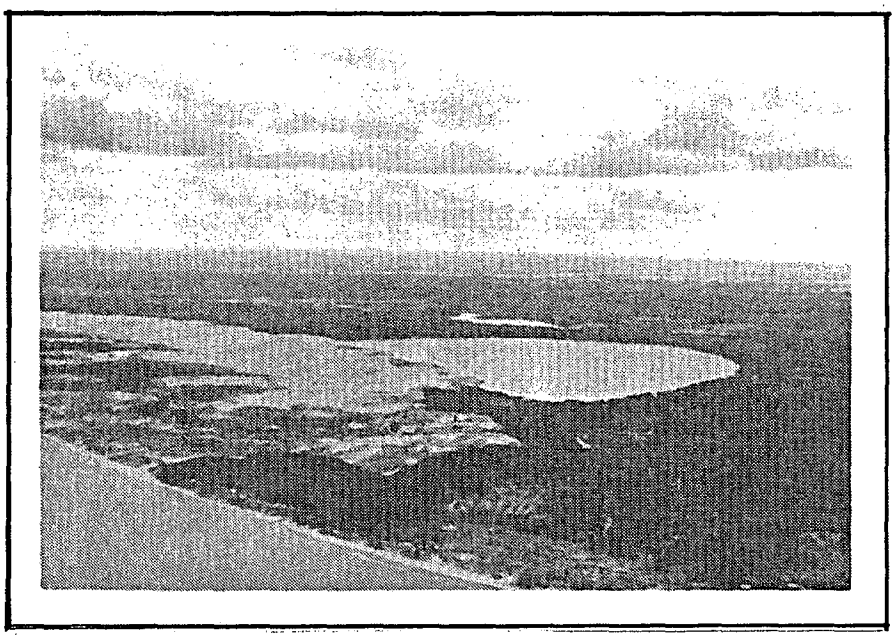


Figure III-91
Site Description
Grand Haven Lighthouse and Pier

46. Silver Lake Dunes



Photograph III-55

Silver Lake Dunes

SAND DUNE AREA OF PARTICULAR CONCERN

46. Silver Lake Dunes

A. LOCATION: Golden Township, Oceana County. T15N-R19W-Sections 24 & 25. T15N-R18W-Sections 17-20, and 30.

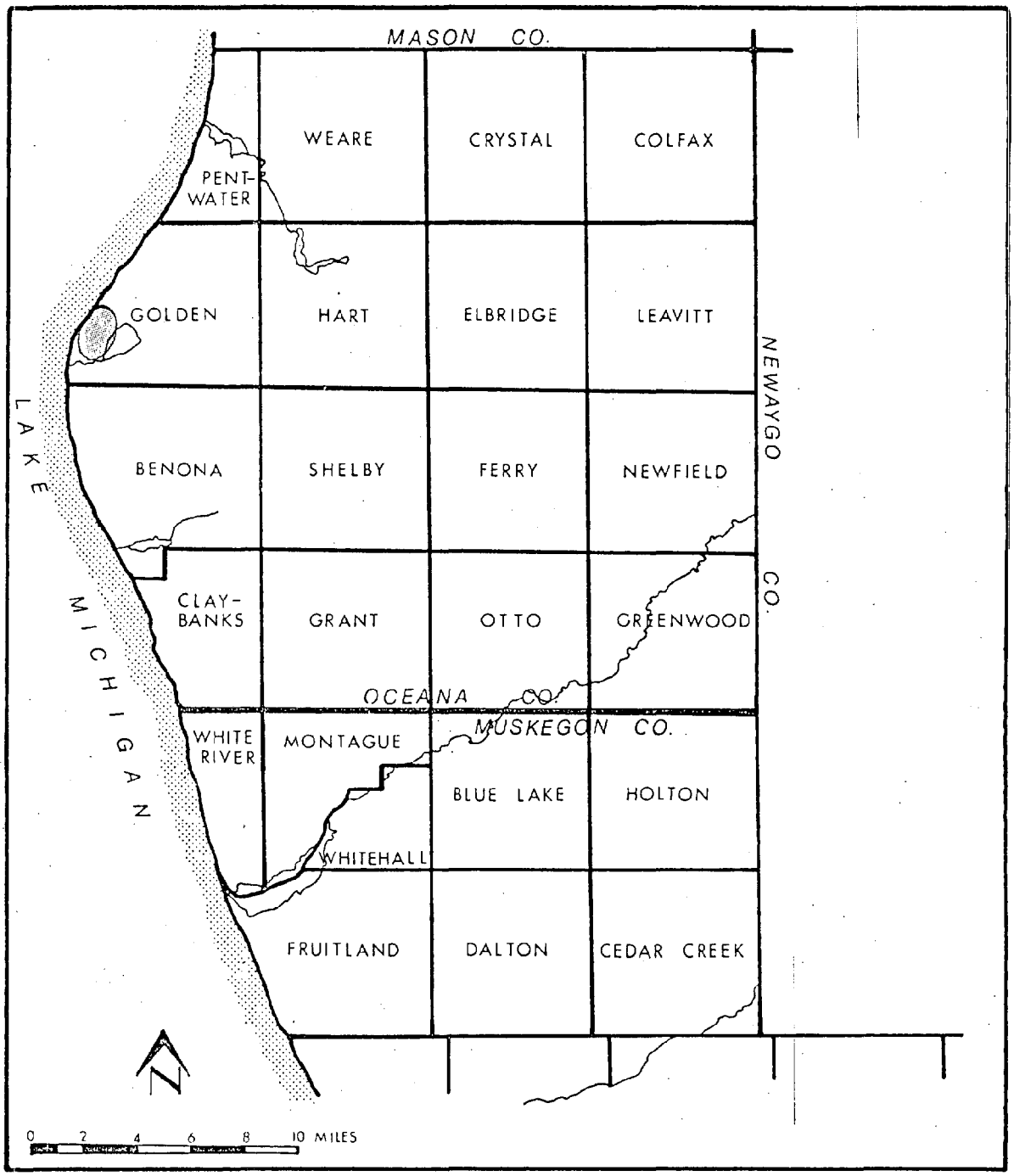


Figure III-92

General Location - Silver Lake Dunes

46. Silver Lake Dunes (cont.)

B. DESCRIPTION:

Silver Lake Dunes make up the principal share of Silver Lake State Park. These dunes range in elevation from 560 to 700+ feet above sea level. These dunes are scantly vegetated and constantly being moved inland by off-shore winds. The area is heavily used by off-road vehicles.

Figure III-93 shows the Silver Lake area and its dunes.

C. MAJOR CONCERNS:

Concerns center upon off-road vehicle use and resulting noise, user conflicts, and the destruction of fragile environments.

D. MANAGEMENT NEEDS:

The relatively uncontrolled use of off-road motorized vehicles poses considerable consequences regarding fragile dune environments. In order to protect these environments, off-road vehicle use must be more effectively regulated. This might mean fewer vehicles and their being limited to specifically designated trails. A comprehensive long range plan must be prepared so as to facilitate rational decisions on a day-to-day basis.

E. APC STATUS:

This APC was originally assigned Low Regional Priority given the Michigan Department of Natural Resources jurisdiction. This APC retains its Low Regional Priority status.

46. Silver Lake Dunes (cont.)

SCALE

1 inch = 5,208 feet

LEGEND

Wooded Duneland

-600- Elevation in Feet Above Sea Level

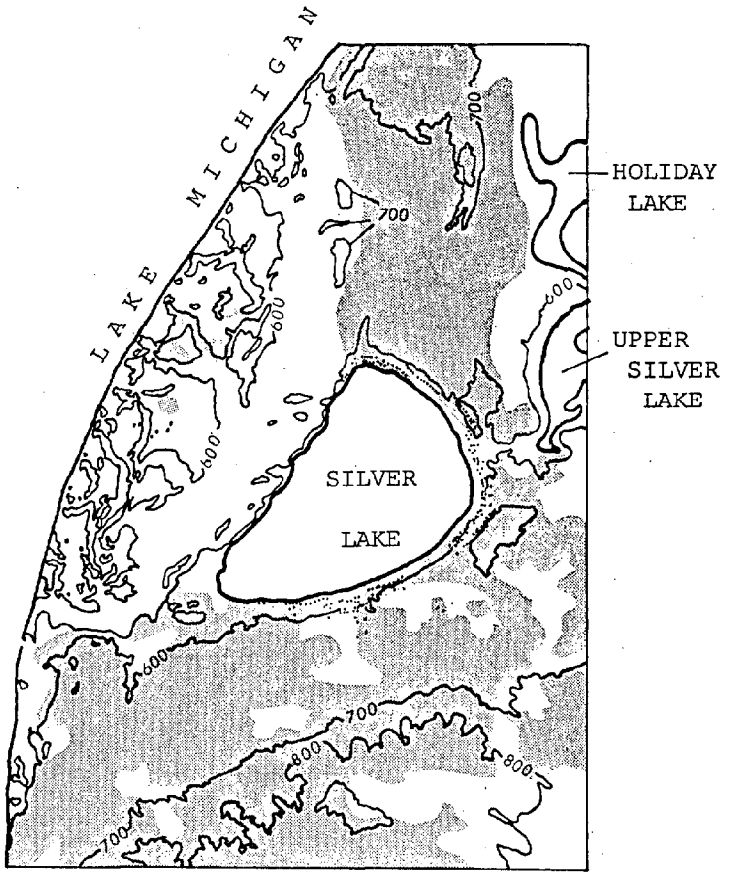
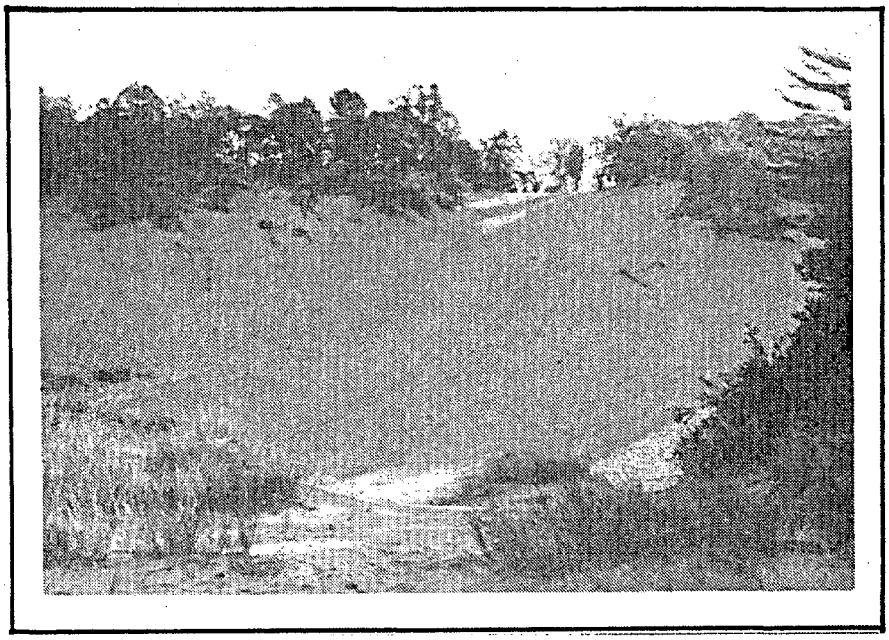


Figure III-93

Site Description - Silver Lake Dunes

47. Ferrysburg Dune Blow Out



Photograph III-56
Ferrysburg Dune Blow Out
SAND DUNE AREA OF PARTICULAR CONCERN

47. Ferrysburg Dune Blow Out

A. LOCATION: City of Ferrysburg, Ottawa County. T8N-R16W-Section 18.

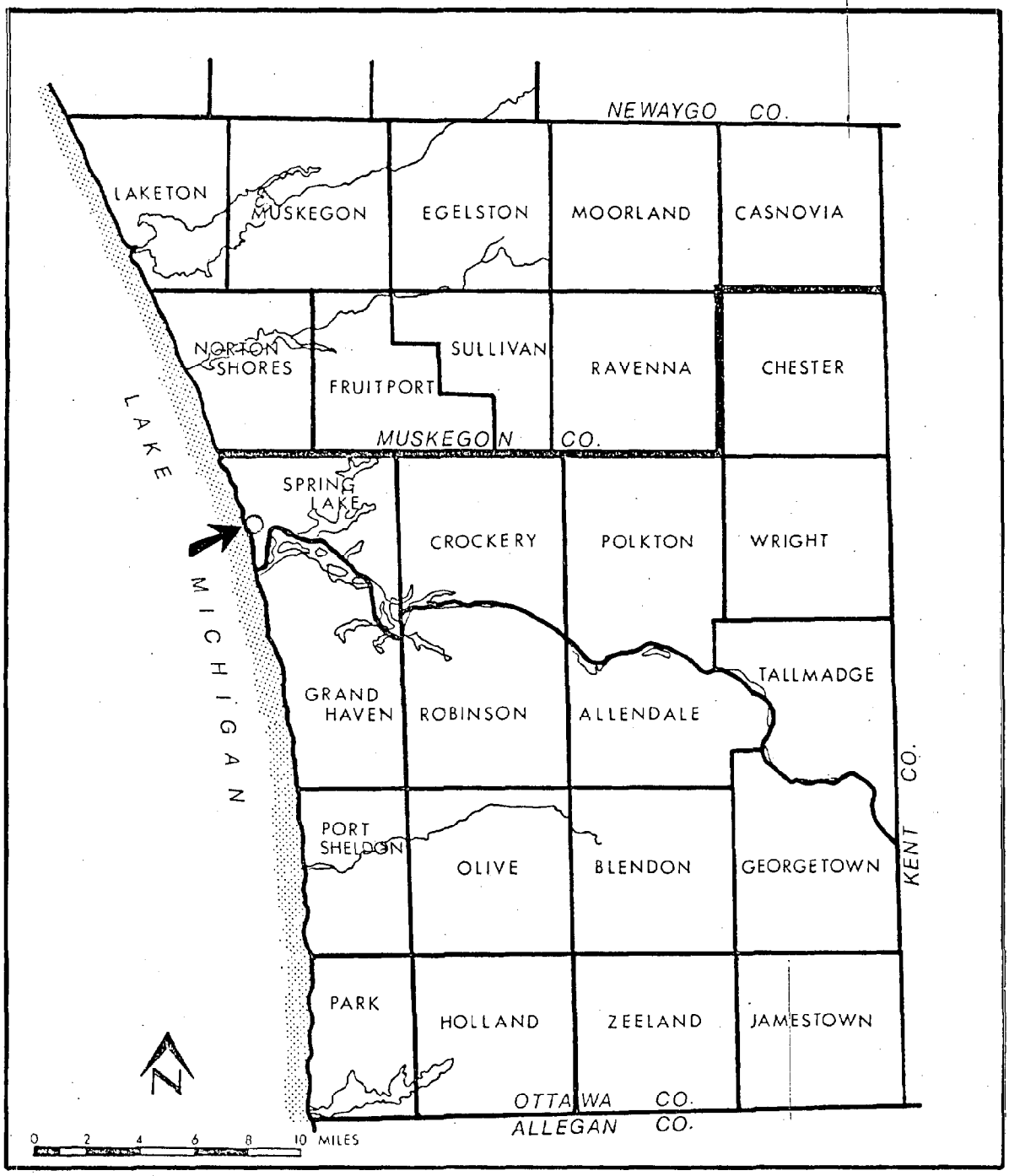


Figure III-94

General Location - Ferrysburg Dune Blow Out

47. Ferrysburg Dune Blow Out (cont.)

B. DESCRIPTION:

Within the City of Ferrysburg, along North Shore Estates Road, and across from Ottawa County's North Beach Park is a blown-out dune area having particular local significance. The entire blow out is no more than five acres in size. It is part of a larger parcel previously owned by North Shores Dunes, Inc. and now apparently owned by Construction Aggregates Corporation. This dune ranges in elevation from 620 feet to 750 feet above sea level. Except for this badly eroded wind torn slope, the rest of this dune is heavily vegetated and characterized by a beech/maple forest.

Figure III-95 shows the blown-out area, surrounding land uses, and existing ownership patterns.

C. MAJOR CONCERNS:

It was thought that this entire sand dune area might someday be developed. Construction Aggregates Corporation now owns this dune area together with more than 200 acres in the same vicinity. Company spokesmen have indicated that Construction Aggregates would like to develop this land in coordination with proposed reclamation and reuse efforts directed at their existing sand mining site.

What will actually happen in this area remains to be seen. As things stand now, this blown-out sand dune experiences some recreation spill over from Ottawa County's North Beach Park. Recreation would appear an appropriate use for this land.

D. MANAGEMENT NEEDS:

The preservation of current recreational uses for this dune area might require that this land be purchased for public ownership. The aquisition of this dune area is not a new idea, yet none of the communities involved have apparently pursued the matter. Some thought should be given to the formulation of a development strategy for the entire "North Shore" area including this duneland vicinity.

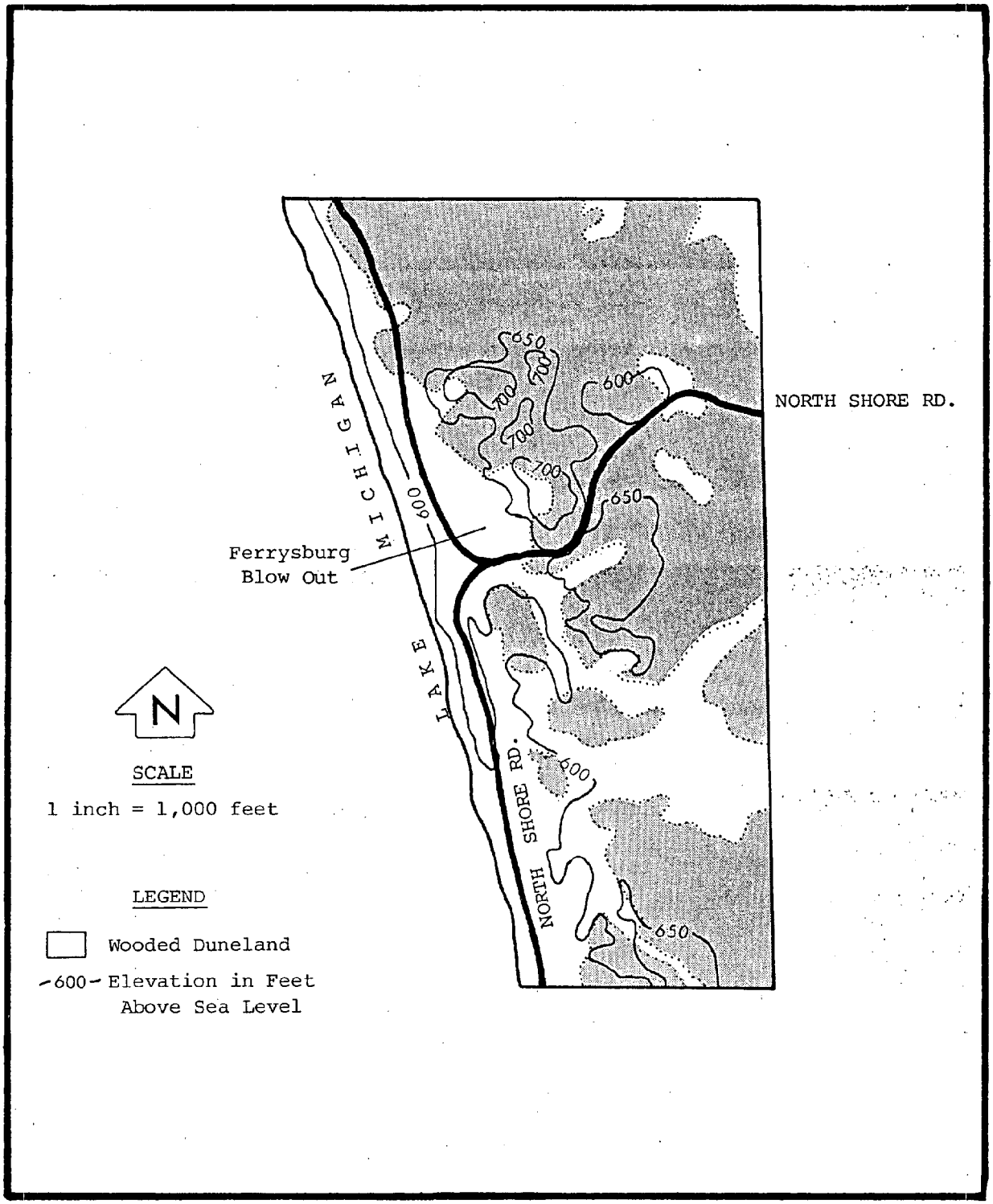


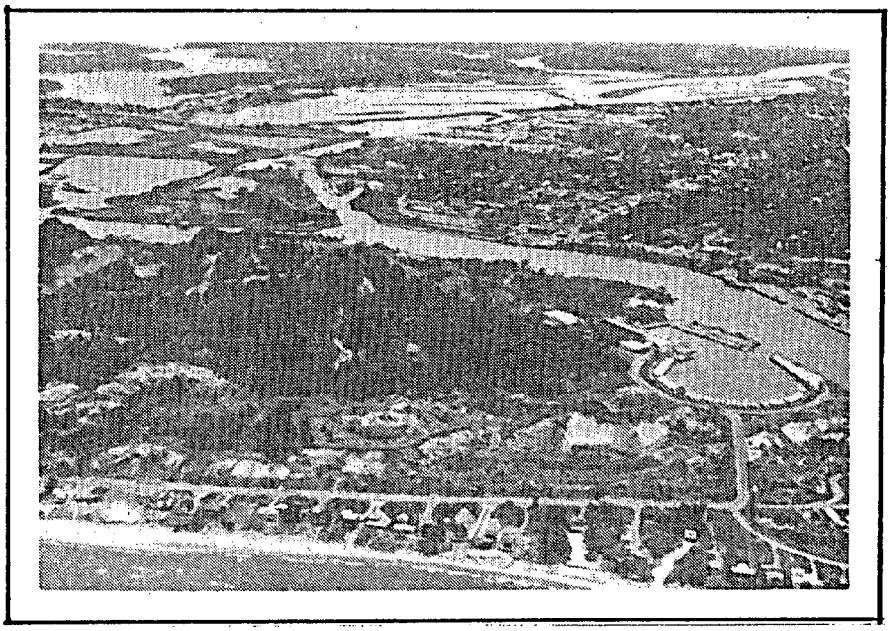
Figure III-95
Site Description
Ferrysburg Dune Blow Out

47. Ferrysburg Dune Blow Out (cont.)

E. APC STATUS:

This APC was originally assigned Low Regional Priority, given its private ownership. This dune area has recently shifted ownership. This change does not affect the original prioritization.

48. NORTH SHORE SAND DUNES



Aerial View of the North Shore Sand Dunes Area
Photograph III-57
SAND DUNE AREA OF PARTICULAR CONCERN

48. North Shore Sand Dunes

A. LOCATION: City of Grand Haven, Ottawa County. T8N-R16W-Sections 19 and 20.

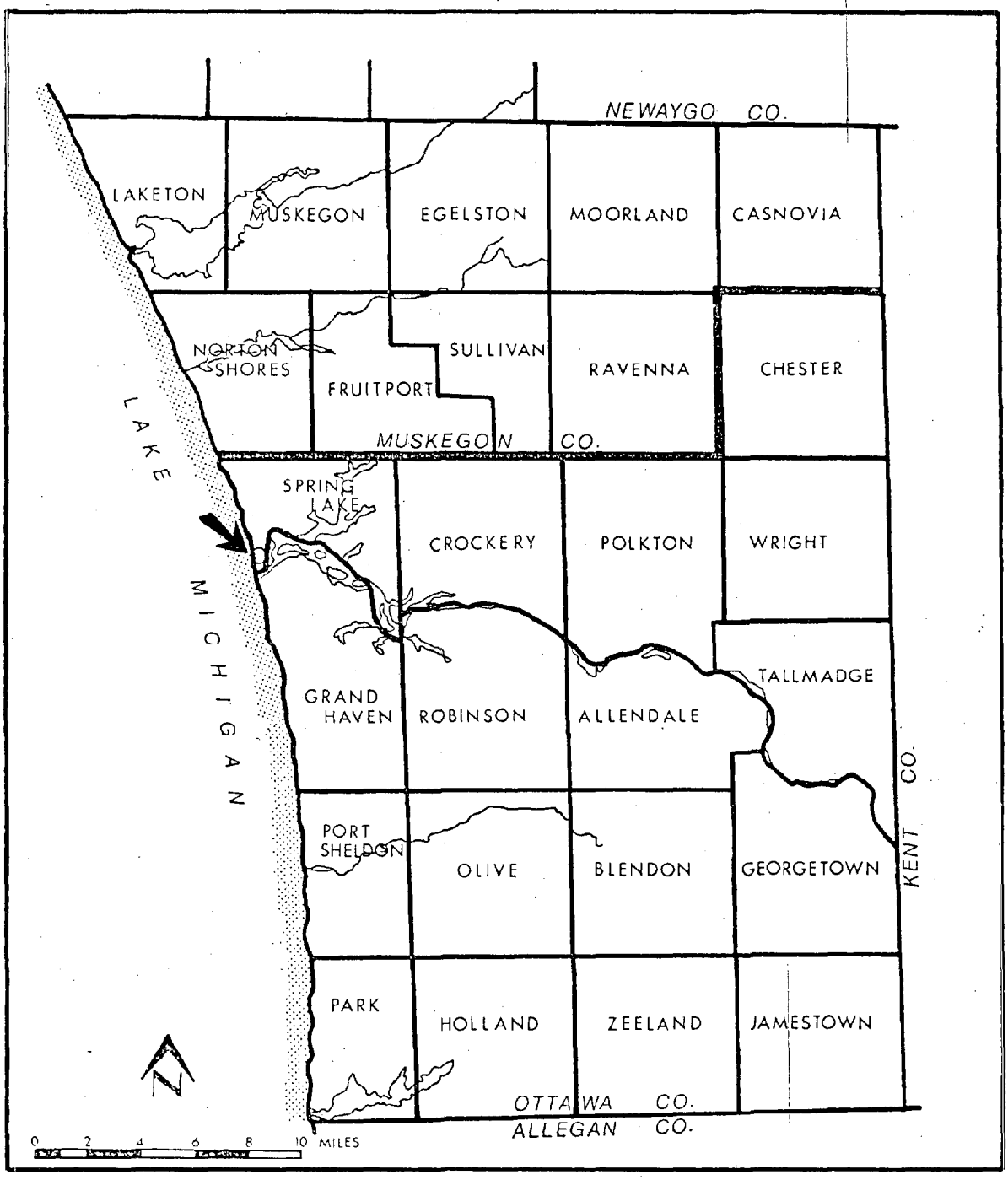


Figure III-96

General Location - North Shore Sand Dunes

48. North Shore Sand Dunes (cont.)

B. DESCRIPTION:

The North Shore Sand Dunes area is located on the north side of the Grand River Channel immediately adjacent to and south of Construction Aggregates Corporation's sand mining site in the City of Ferrysburg. The entire area is primarily undeveloped except for the string of houses bordering Lake Michigan along North Shore Drive, and the Coast Guard Station and private marina which are located next to the channel.

The entire North Shore Sand Dunes area totals approximately 271 acres. Of this area, the City of Grand Haven owns nearly 133 acres, deeded to it by the State of Michigan for "public use." Central Michigan University owns another 60 acres which it has preserved in its natural state for educational and scientific use. The Nature Conservancy currently owns an additional 52 acres which is adjacent to and east of the CMU property. The Nature Conservancy is expected to deed or lease this 52 acre parcel over to an institution like CMU or Grand Valley State Colleges with the stipulation that it remain in its present natural state. A smaller 26 acre parcel is at present owned by Construction Aggregates Corporation.

The North Shores Dunes area is prized as an exhibit of sand dune processes and ecologic progresssion. It is an area blessed with enormous diversity regarding vegetative communities and microclimatic zones. The North Shores Dunes area has been described as an important educational resource.

Figure III-97 shows the North Shore Dunes area and its present ownership.

C. MAJOR CONCERNS:

The North Shore Dunes area has been the subject of serious developmental speculation. Now, almost half of this duneland area, those parcels owned by Central Michigan University and the Nature Conservancy, looks as though it will remain in its natural state. However, the Nature Conservancy must eventually be reimbursed for its purchase of

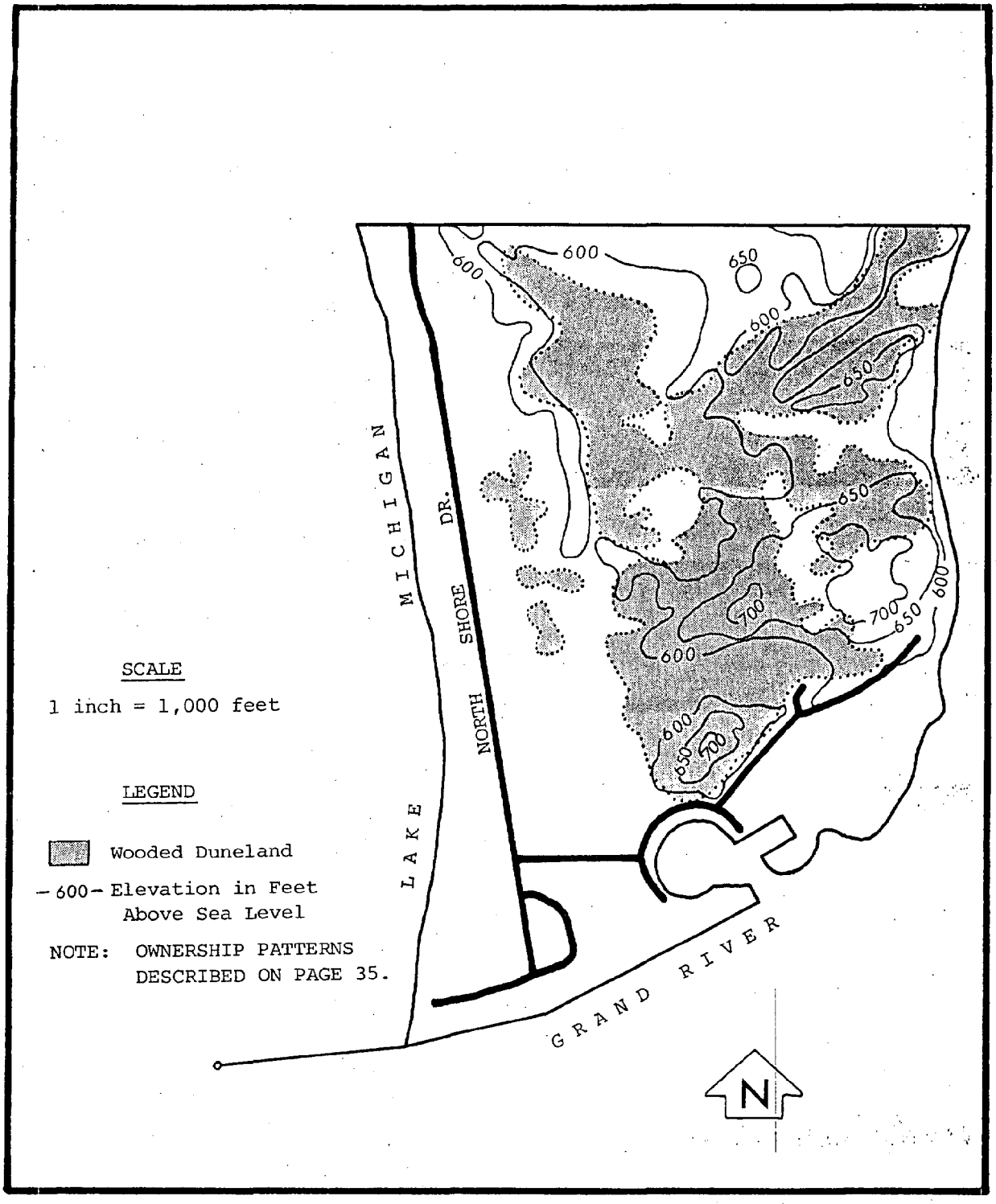


Figure III-97
Site Description
North Shore Sand Dunes

what is called the Kitchel Dune. If the Nature Conservancy is not repaid the $160,000 it cost to buy this dune area, it may be forced to offer the property for resale on the open market.

Construction Aggregates Corporation has indicated that it will leave its portion of the North Shore Dunes area as a buffer zone for its current sand mining operation. What the City of Grand Haven intends to do with its 133 acre parcel has yet to be determined. There has been some talk that the City might use its duneland as a site for a new water filtration plant. Although a water filtration system would most definitely qualify as a valuable "public use," there are many residents who are concerned about what such development might do to the area's environmental character.

Another concern regarding the North Shore Dunes area is related to the City's plans to extend municipal sewerage under the Grand River, north into the City of Ferrysburg. Sewers would serve those residents along North Shore Drive. This sewer is designed, however, at a capacity beyond what is necessary. Many people are concerned that this additional capacity will stimulate increased development in the North Shore area. The construction of sewers can, in itself, pose significant environmental consequences.

D. MANAGEMENT NEEDS:

The Nature Conservancy must eventually resolve its problem regarding the reimbursement at $160,000 spent to purchase the Kitchel Dune. The Conservancy must also find an acceptable organization which will properly manage this duneland area.

The West Michigan Shoreline Regional Development Commission has recently published a document entitled, "The Next Ten Years" 1978-1988 Development Plan for Grand Haven, Michigan (September 1978). This report recommends that the City of Grand Haven prepare a detailed plan for the entire North Shore vicinity. This plan must identify "areas

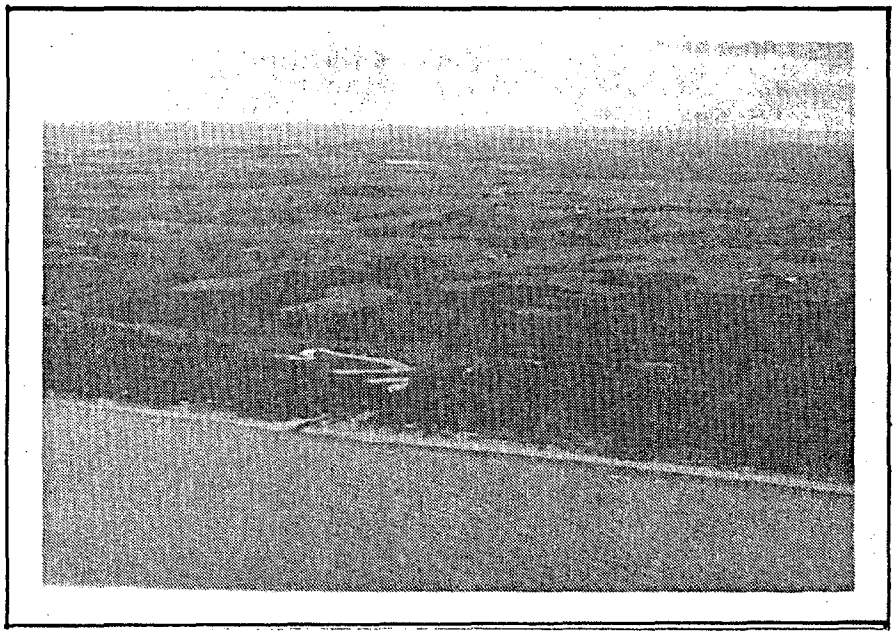
of active and passive recreation, areas to be preserved in their natural state, access points, roads, utility corridors, potential residential locations and other pertinent information necessary to the task." This report has been adopted by the Grand Haven Planning Commission.

The U.S. EPA may prepare an Environmental Impact Statement in response to the City's plans to extend sewerage into the North Shore area. The preparation and review of this EIS could delay sewer construction by as much as one year.

E. APC STATUS:

This APC was originally assigned Low Regional Priority. The Nature Conservancy had at that time just purchased the Kitchel Dune area and things looked relatively stable regarding development pressures. Since this original prioritization the Nature Conservancy has run into some difficulty in getting reimbursed for money it spent in purchasing the Kitchel Dune area. In addition, the City of Grand Haven has indicated that it would like to extend sewers into North Shore properties. There has also been increased speculation regarding how the City might develop its portion of this duneland area. All these factors have caused the Region 14 Commission to assign this APC High Regional Priority.

49. FLOWER CREEK DUNES



Flower Creek Dunelands
Photograph III-58
SAND DUNE AREA OF PARTICULAR CONCERN

49. Flower Creek Dunes

A. LOCATION: Clay Banks Township, Oceana County. T13N-R18W-Sections 33 & 34.
White River Township, Muskegon County. T12N-R18W-Secs. 3 and 4.

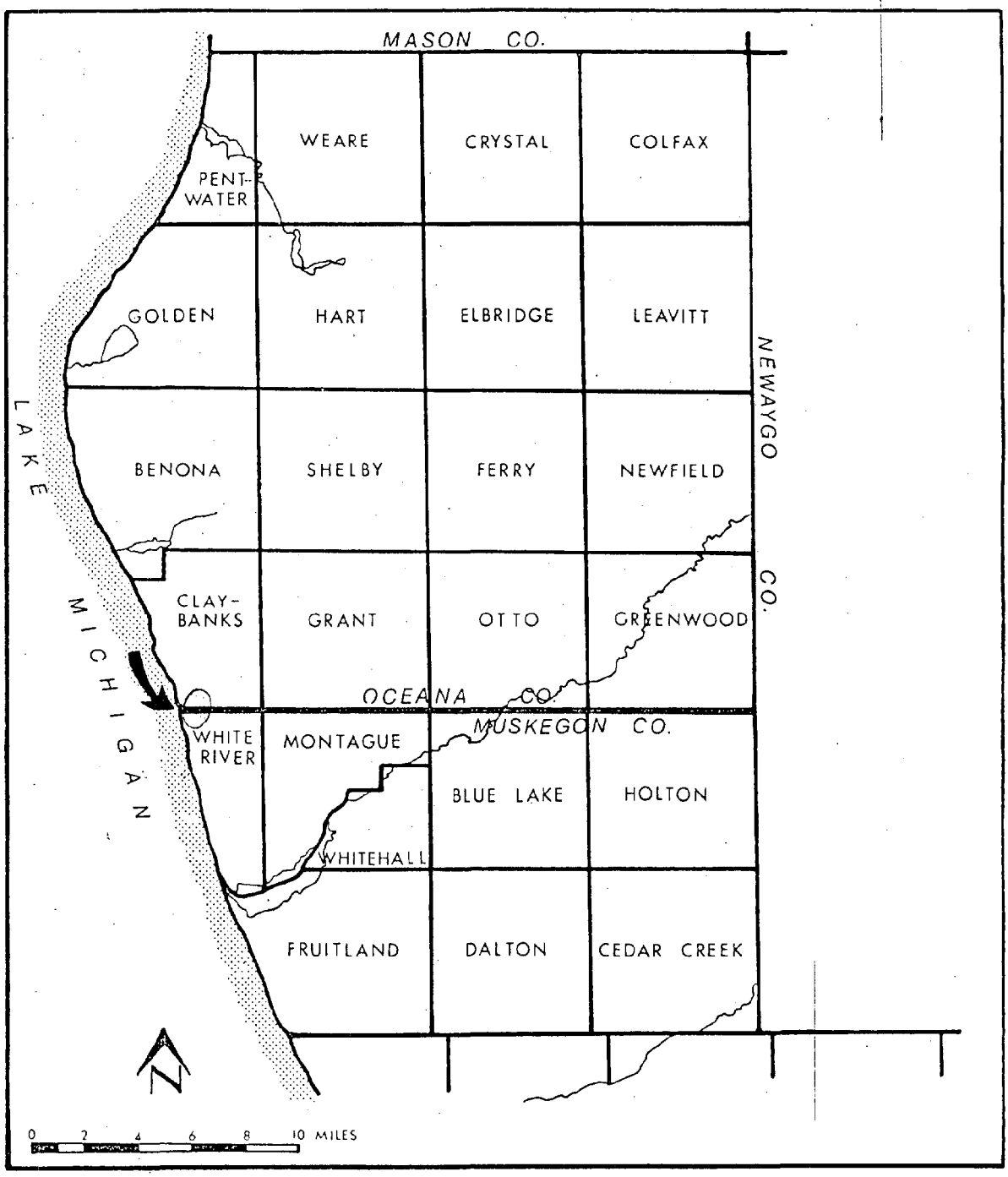


Figure III-98

General Location - Flower Creek Dunes

49. Flower Creek Dunes (cont.)

B. DESCRIPTION:

The Flower Creek Dunes are located along Lake Michigan near the Muskegon County - Oceana County boundary line. It is an area of approximately 270 acres and is primarily undeveloped except for residential structures along the lake shore and the nearby Muskegon County Meinert Park. This duneland area ranges in elevation from 600 feet to 720+ feet above sea level. The shoreline is characterized by a very steep and very high bluff. The entire dune complex is heavily wooded and is complemented by wetlands associated with the Flower Creek watershed (also recognized as an APC).

Figure III-99 describes the Flower Creek vicinity including the dune areas.

C. MAJOR CONCERNS:

Uncontrolled development in this fragile shoreland area is without a doubt the major concern. This duneland area has extraordinary aesthetic value and important environmental attributes. Development in this sensitive dune environment can have catastrophic impacts.

D. MANAGEMENT NEEDS:

Both Claybanks Township and White River Township have zoning ordinances as a control upon development within their jurisdictions. These ordinances aren't, however, all that restrictive when considering the duneland environment. Both communities might give some thought regarding the preparation of a development strategy for the Flower Creek area.

E. APC STATUS:

This APC was originally assigned Medium Regional Priority. This priority will be reduced to Low awaiting changes in the current situation.

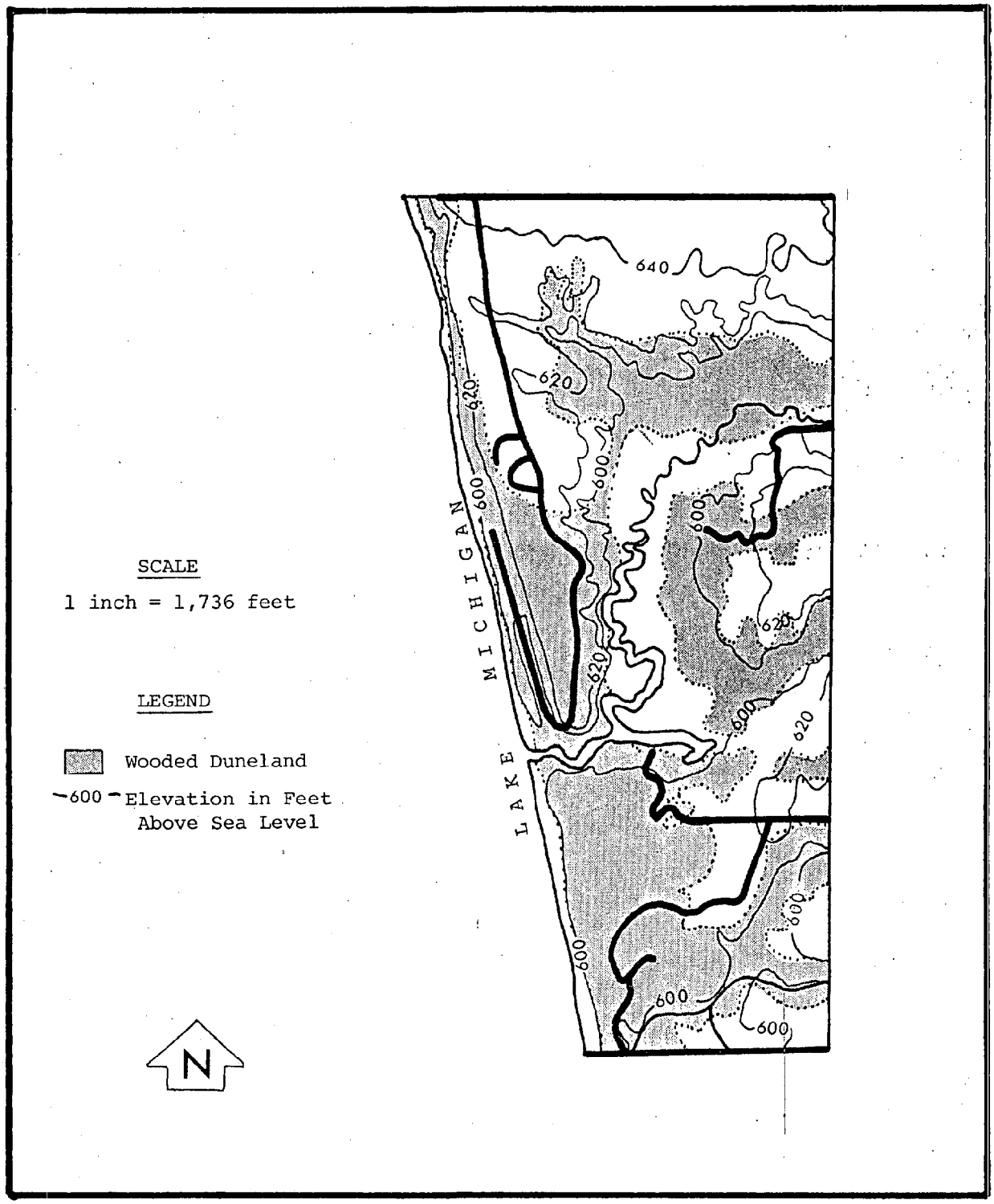
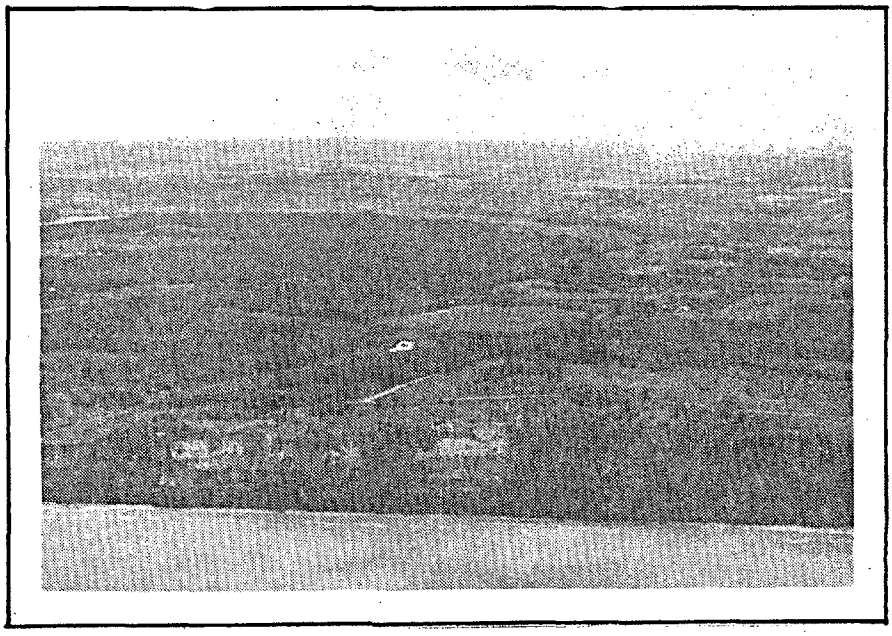


Figure III-99
Site Description
Flower Creek Dunes

50. CLAYBANKS DUNES



Aerial View of Clay Bluffs in Claybanks Township
Photograph III-59
SAND DUNE AREA OF PARTICULAR CONCERN

50. Claybanks Dunes

A. LOCATION: Claybanks Township, Oceana County. T13N-R19W-Secs. 6, 8, 17, 21, 28, and 33.

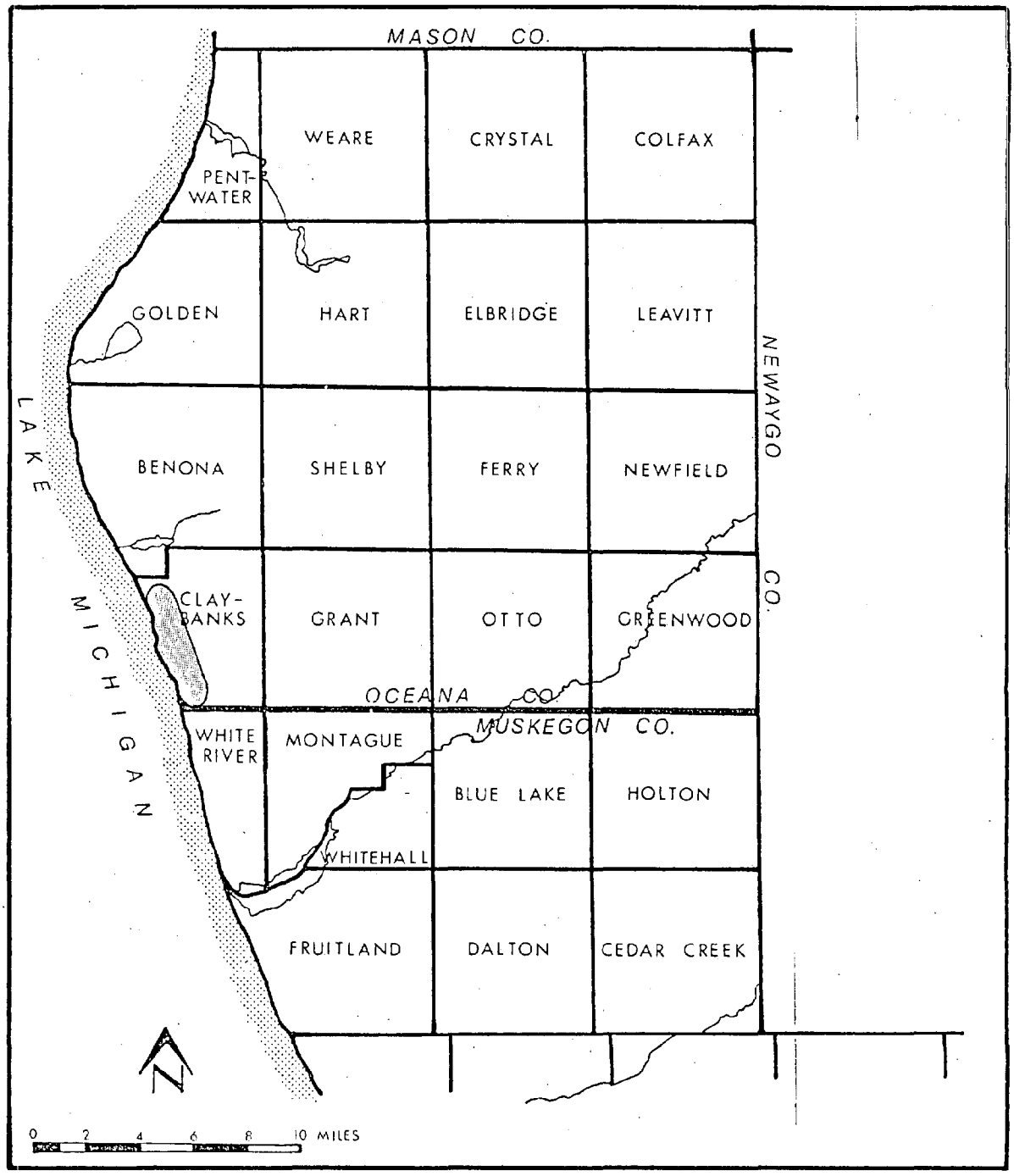


Figure III-100
General Location - Claybanks Dunes

50. Claybanks Dunes (cont.)

B. DESCRIPTION:

The Claybanks Township shoreline represents one of the more unique geologic features of the Pleistocene found in Region 14. The area's dunes are apparently perched upon a thick clay layer. When exposed by wave action, a very steep bluff may result. In fact, some places along Lake Michigan within Claybanks Township range from the water's edge at about 600 feet to the top of the dunes which are over 840 feet above sea level.

Much of Claybanks' shoreline is developed for residential use. There are, however, large tracts of land which still remain in its natural state. Claybanks Township owns over 80 acres with over 2,000 feet of Lake Michigan frontage. This land has been developed as a local park for Township residents and includes picnic area, restrooms, and campsites.

Figure III-101 describes the Claybanks shoreline.

C. MAJOR CONCERNS:

The preservation of unique geologic remnants is a major concern. There is also a need for more public access.

D. MANAGEMENT NEEDS:

Claybanks Township has an operative zoning ordinance. This ordinance doesn't give any special consideration to shoreland areas. The Township might want to investigate the inclusion of performance standards as part of its zoning procedures.

E. APC STATUS:

This APC was originally assigned Low Regional Priority. This priority remains unchanged.

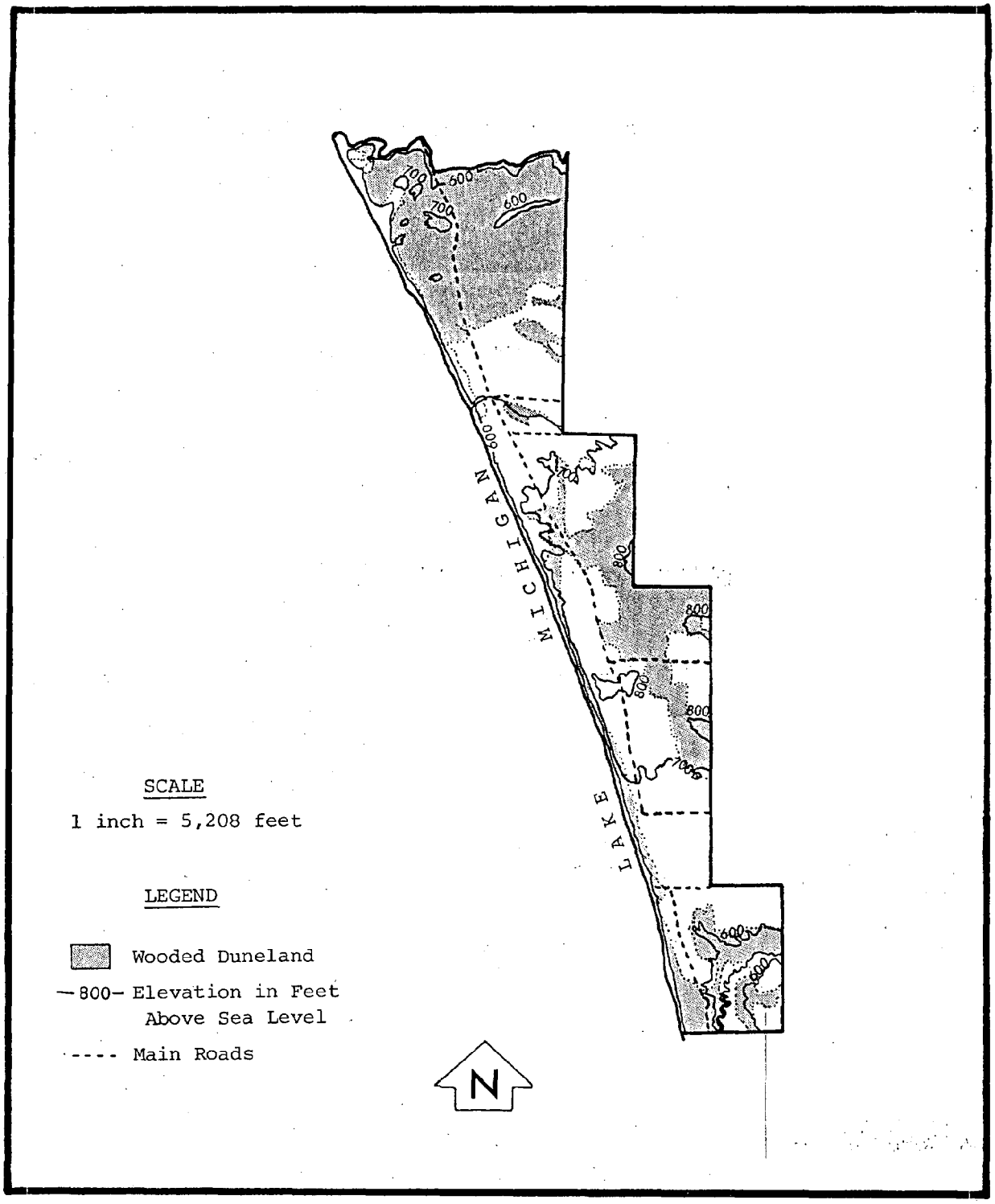
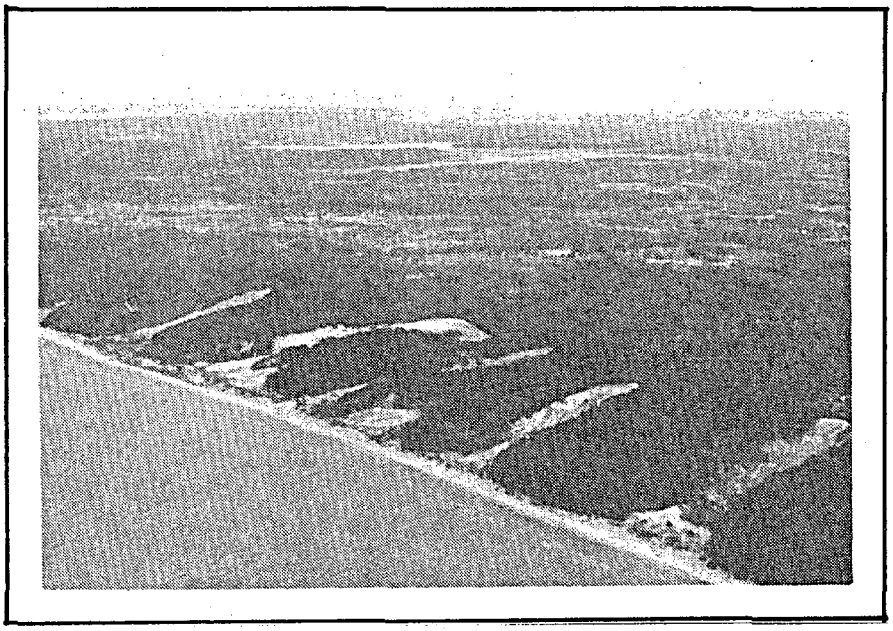


Figure III-101
Site Description
Claybanks Dunes

51. P. J. HOFFMASTER STATE PARK



Parabolic Blow Outs of P. J. Hoffmaster State Park

Photograph III-60

NATURAL AREA OF PARTICULAR CONCERN
RECREATION AREA OF PARTICULAR CONCERN

51. P. J. Hoffmaster State Park

A. LOCATION: City of Norton Shores, Muskegon County. T9N-R17W-Secs. 25 and 36. T9N-R16W-Section 31. Spring Lake Township, Ottawa County. T8N-R17W-Section 1. T8N-R16W-Sec. 6.

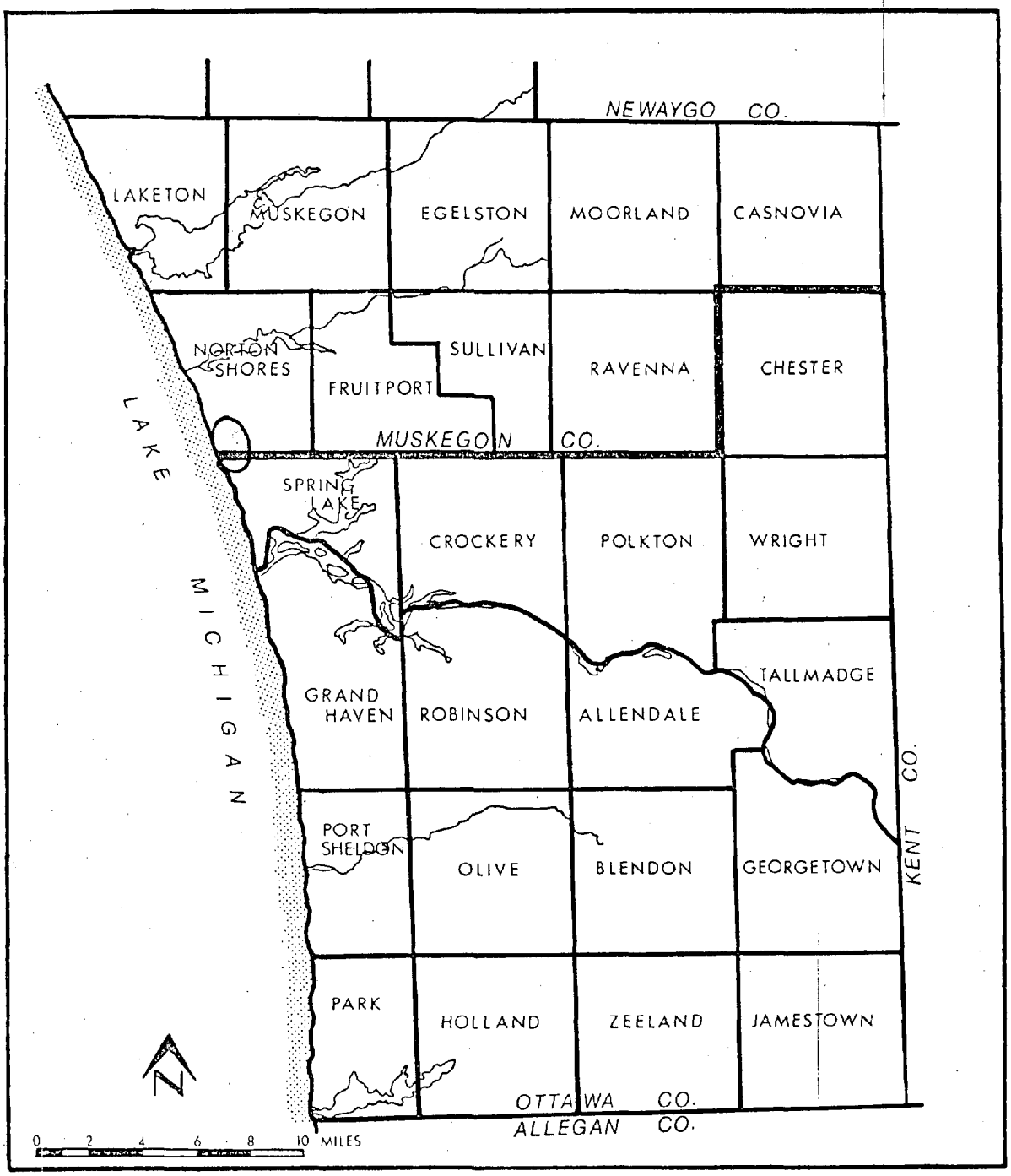


Figure III-102

General Location - P. J. Hoffmaster State Park

51. P. J. Hoffmaster State Park (cont.)

B. DESCRIPTION:

The P. J. Hoffmaster State Park is developed as a nature preserve and outdoor classroom. It is located along Lake Michigan in the southern half of the City of Norton Shores and the northernmost portion of Spring Lake Township. The park has approximately 2½ miles of lake frontage and totals an estimated 1,030 acres in area. Facilities include a picnic area, 33 campsites, bathhouse, playgrounds, trails, nature interpretation center, beach, lifeguard, snowmobile trail, and concession stands. The area is for the most part very heavily wooded and yet is known for its large parabolic shaped blow outs.

Figure III-103 describes the P. J. Hoffmaster State Park and its immediate vicinity. Note the relationship of this APC to the Black Lake area also designated as an Area of Particular Concern.

C. MAJOR CONCERNS:

Concerns center upon user conflicts. The park is open to snowmobiles throughout the winter months. This use often conflicts with those people interested in cross-country skiing and hiking. Heavy park use during other seasons has at times lead to the trampling of valued vegetation. These areas are difficult to stabilize once they have been disturbed.

D. MANAGEMENT NEEDS:

The Michigan Department of Natural Resources has done an excellent job in managing this state park. The DNR is working to eliminate user conflicts by restricting certain uses to specific locations. Trails are provided so as to minimize impacts in sensitive areas.

E. APC STATUS:

This APC was originally assigned Low Regional Priority as a reflection of the DNR's capable management. This priority remains unchanged.

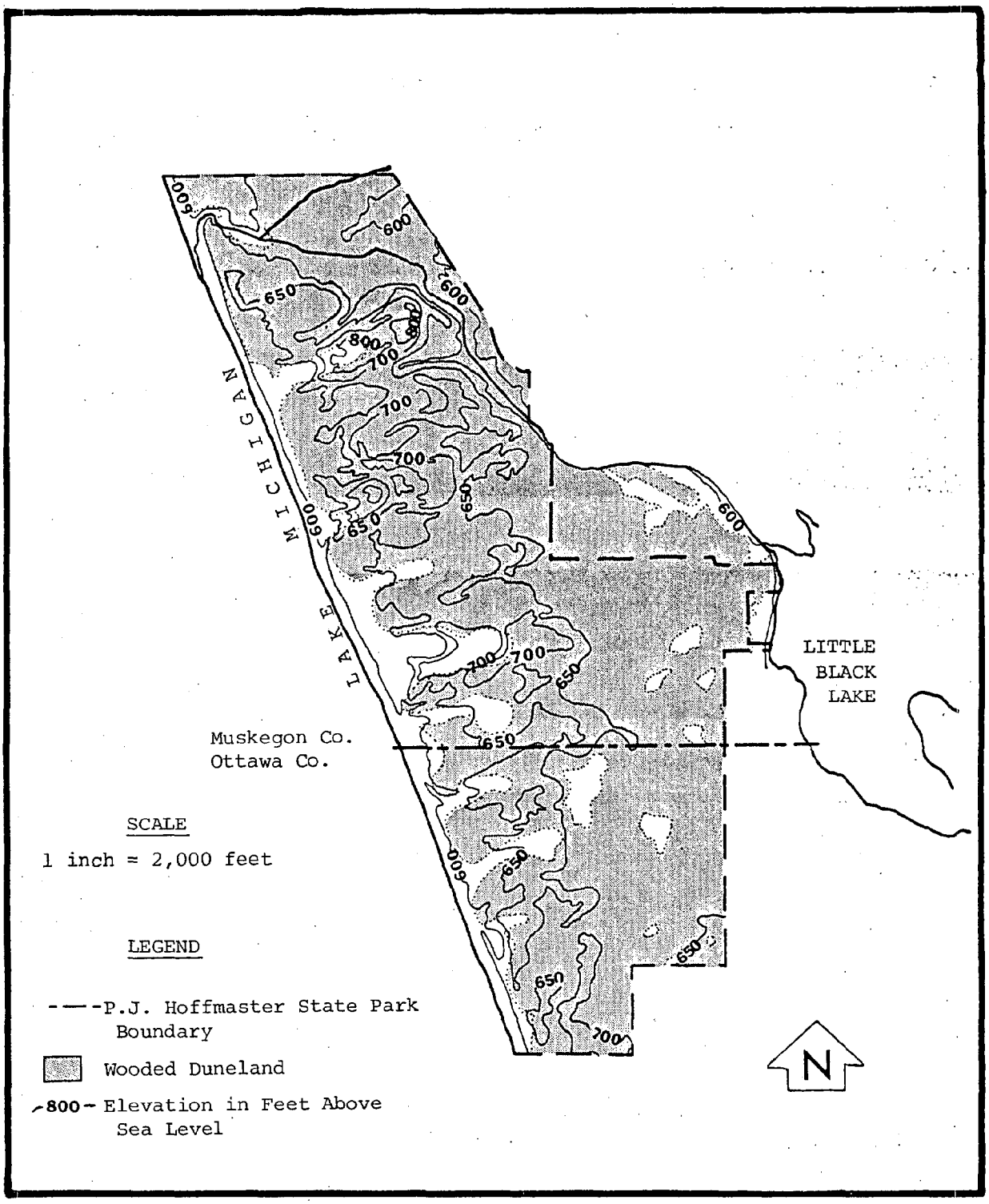
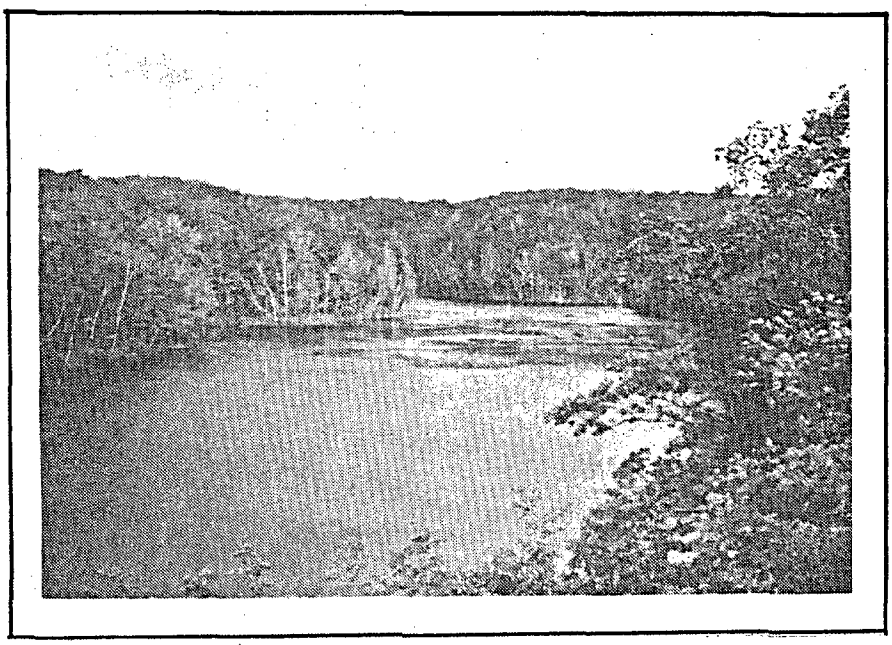


Figure III-103
Site Description
P. J. Hoffmaster State Park

52. BIGSBEE LAKE (ORWIG PROPERTY)



Photograph III-61
View of Bigsbee Lake and the Orwig Property

NATURAL AREA OF PARTICULAR CONCERN

52. Bigsbee Lake (Orwig Property)

A. LOCATION: Benona Township, Oceana County. T14N-R19W-Section 24.
T14N-R18W-Section 19.

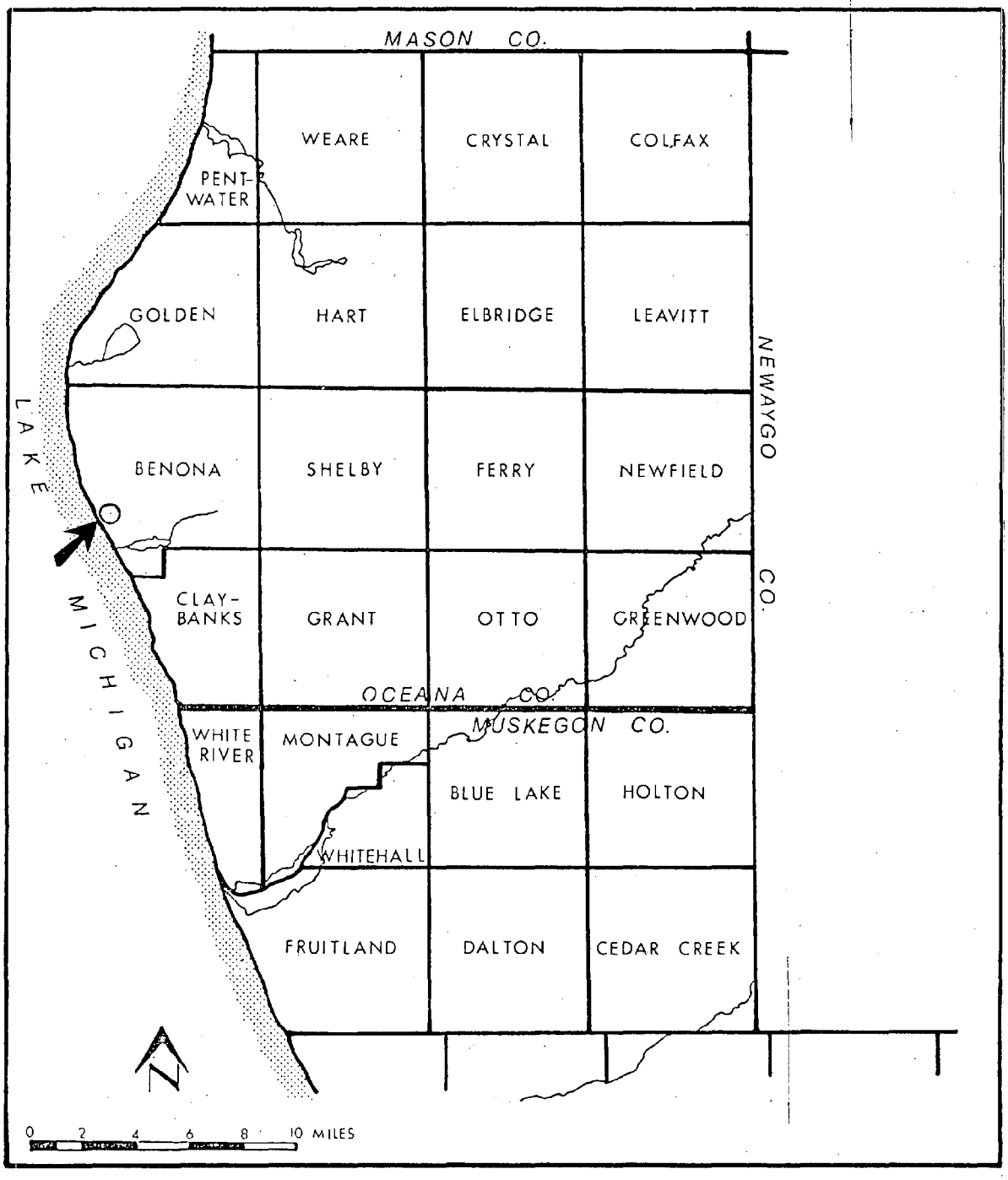


Figure III-104
General Location - Bigsbee Lake (Orwig Property)

52. Bigsbee Lake (Orwig Property) (cont.)

B. DESCRIPTION:

The Orwig Property consists of approximately 332 acres and is located about midway along Benona Township's Lake Michigan Shoreline. The property has over a half mile of Lake Michigan frontage and contains Bigsbee Lake which is almost 20 acres in size. The area is primarily undeveloped except for the numerous cottages lining the Lake Michigan shore. The Orwig Property all but surrounds an additional undeveloped 40 acres parcel owned by the St. Joseph's Catholic Church.

The Orwig Property is a heavily wooded duneland area of significant scenic value. It is particularly valuable as a wildlife habitat. Observers have noted the presence of the golden eagle, great blue heron, grey heron, pipers, gulls, ducks, warblers, osprey, wood peckers, etc. Vegetation includes arbutus, slippers, indian pipes, pulpits, trillium, etc. The area has been described as an important educational resource.

Figure III-105 describes this general area.

C. MAJOR CONCERNS:

The preservation of this unique and sensitive shoreland area is a major concern. Its scenic value cannot be overstressed. Its importance as a wildlife habitat is enormous.

D. MANAGEMENT NEEDS:

The area might be purchased and preserved as public property. At the very least it should be maintained as a natural area for possible light recreation use. Benona Township has no zoning ordinance so development may locate almost anywhere. Oceana County might bring relief to this situation if it adopts a county wide zoning ordinance.

E. APC STATUS:

This APC was originally assigned Low Regional Priority because it is private property and its management currently left up to its owner. This priority will remain unchanged unless stimulated by local government.

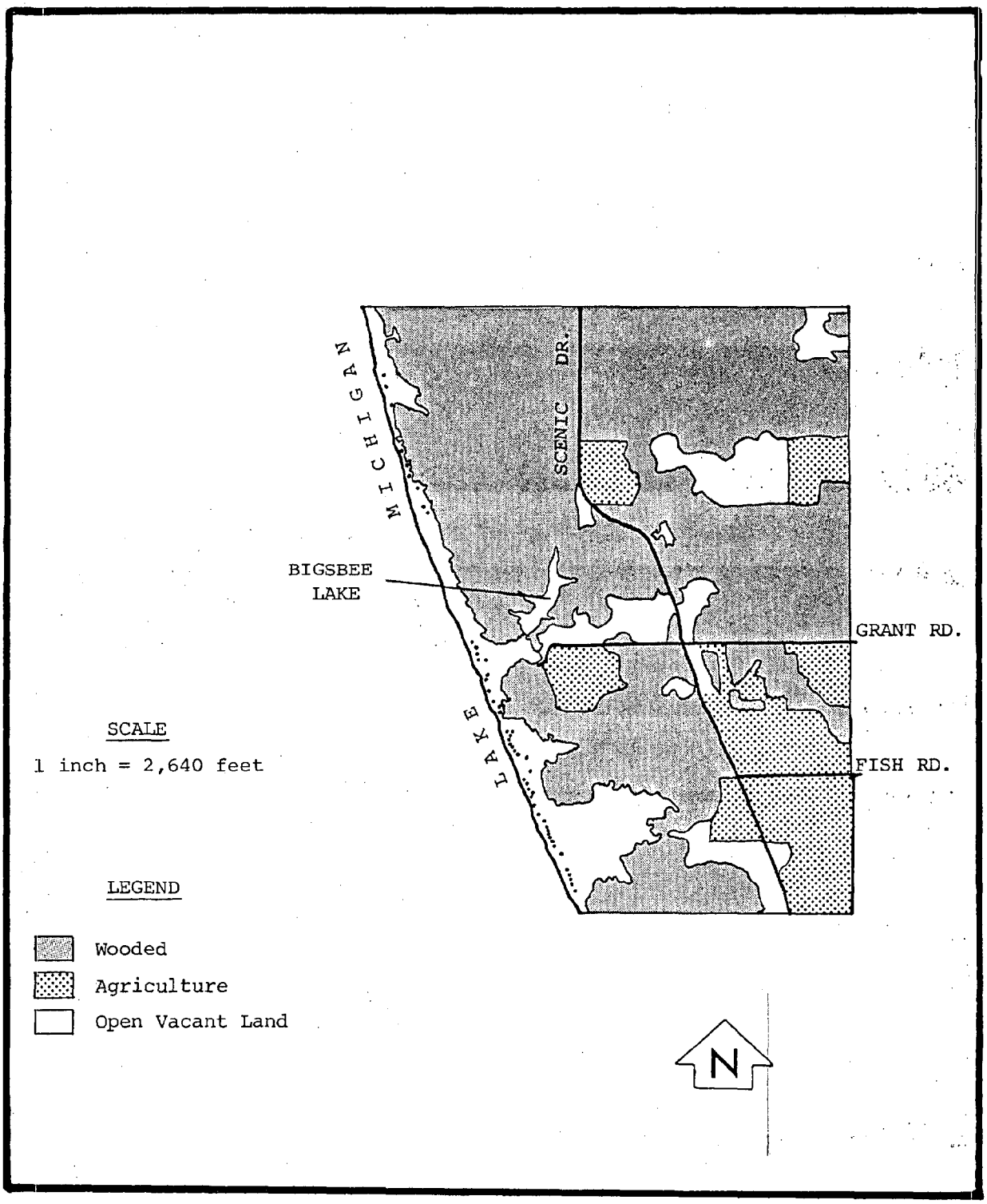
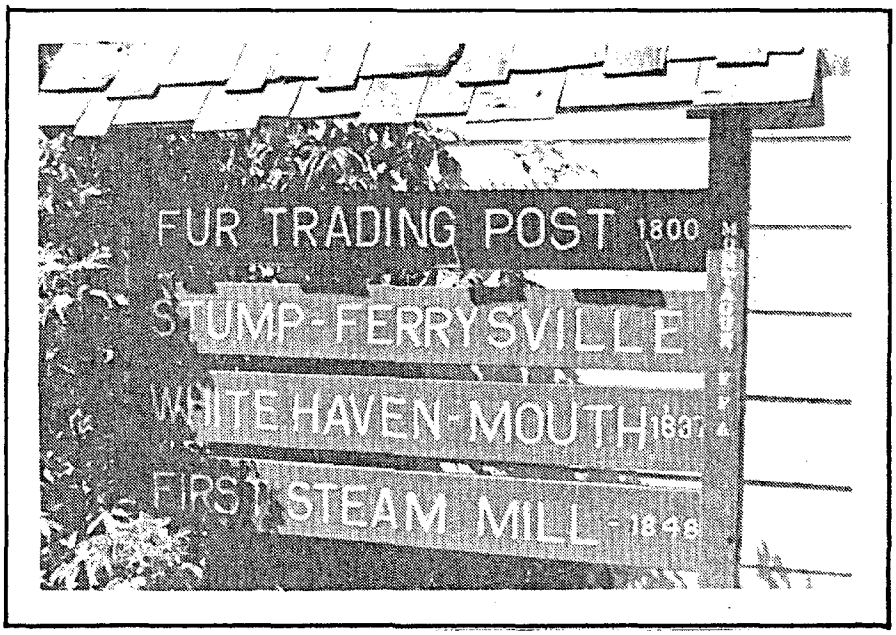


Figure III-105
Site Description
Bigsbee Lake (Orwig Property)

53. OLD WHITE LAKE CHANNEL & BAYOU



Sign Commemorating the "Old Channel Area"
as an Historic Site

Photograph III-62

NATURAL AREA OF PARTICULAR CONCERN
HISTORIC SITE OF PARTICULAR CONCERN

53. Old White Lake Channel & Bayou

A. LOCATION: White River Township, Muskegon County. T11N-R18W-Section 2.

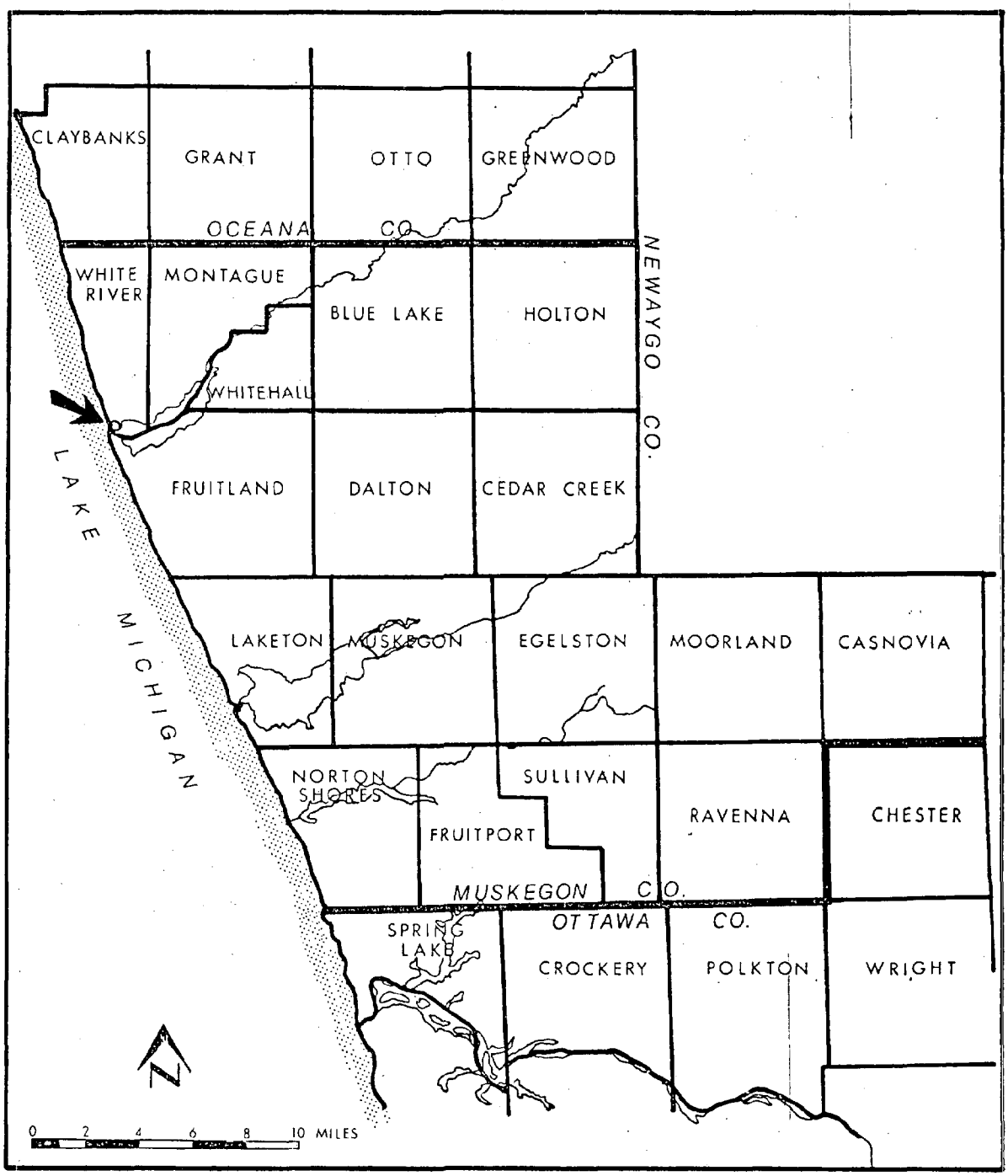


Figure III-106
General Location - Old White Lake Channel & Bayou

53. Old White Lake Channel & Bayou (cont.)

B. DESCRIPTION:

White Lake originally drained through a meandered channel north of its present mouth. This old channel was the site of one of this area's first settlements. Aside from its historic significance, the old channel and its associated bayou (Sodony Bayou) serve as a valued wildlife habitat.

Pierson Drain flows south into the Sodony Bayou. The Bayou empties into White Lake through the old channel. Together, the bayou and channel are a little more than one mile in length.

The old channel and bayou area are not heavily developed although there are several homes scattered throughout. Most of the area is wooded with limited access.

Figure III-107 describes the old channel and bayou area. Photographs III-58 and III-59 show Sodony Bayou northeast of the Old Channel Trail Bridge, and the old channel as seen southwest of the bridge.

C. MAJOR CONCERNS:

This area's preservation is a major concern. It is both an historic site and an important natural area. Increased development and degraded water quality can have serious repercussions regarding environmental attributes.

D. MANAGEMENT NEEDS:

Current land uses do not seem all that troublesome to the area's historic relevance or wildlife values. Future development should probably be limited and certain restrictions imposed regarding construction technique. The area's preservation requires the formulation of a conscientious developmental strategy.

E. APC STATUS:

This APC was originally assigned Medium Regional Priority. The lack of any real interest in planning efforts has caused the Region 14 Commission to reduce the priority to Low.

53. Old White Lake Channel & Bayou (cont.)

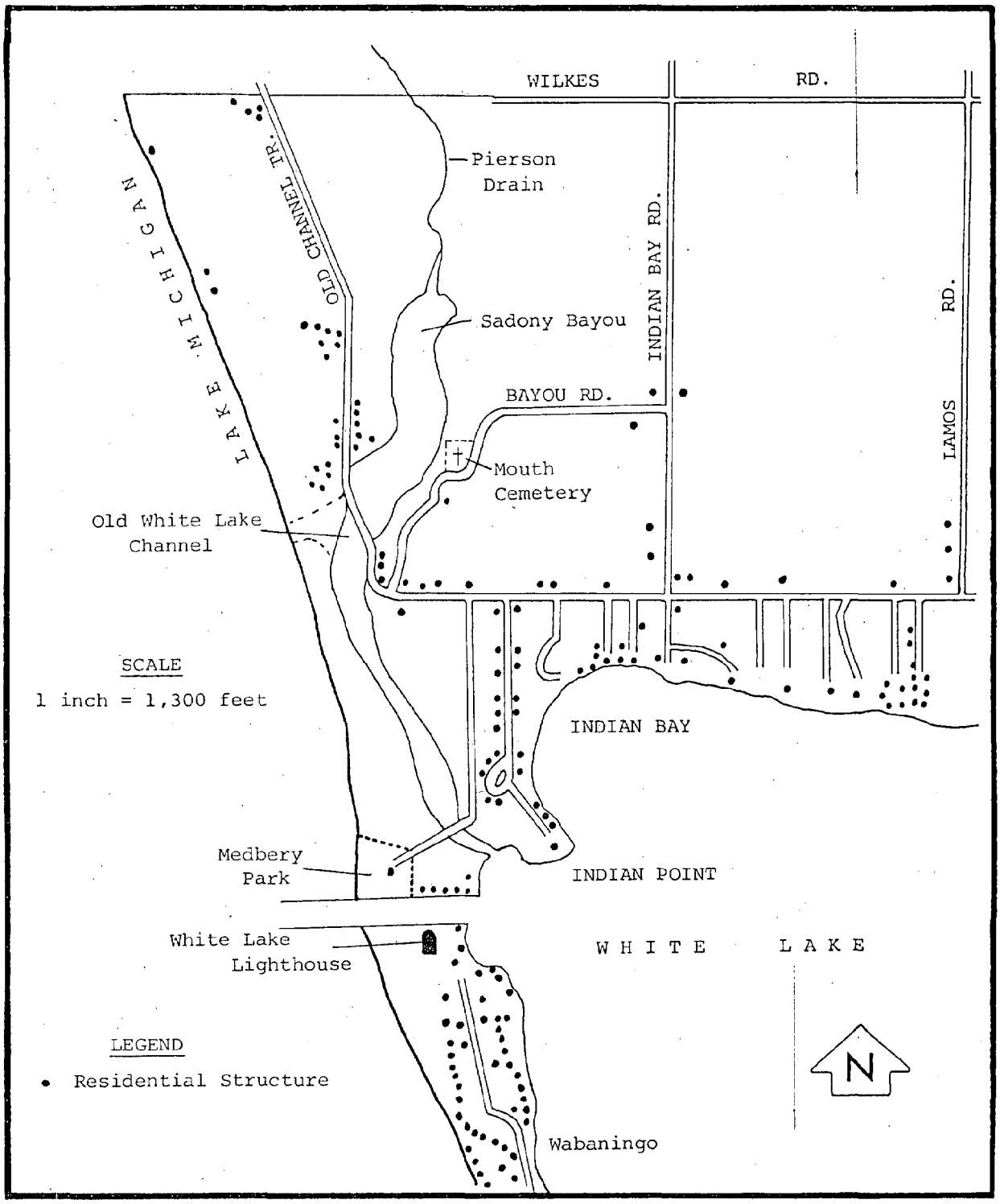
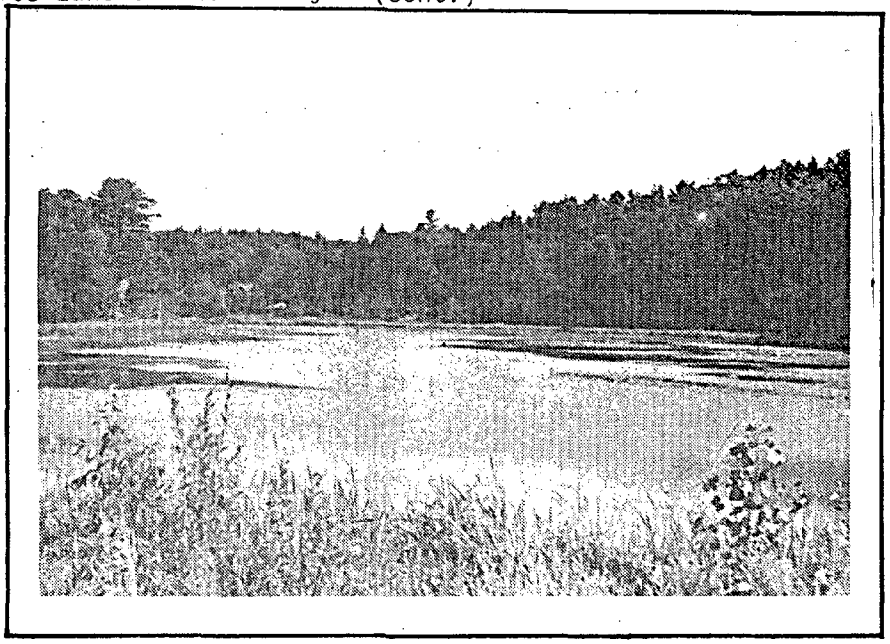


Figure III-107

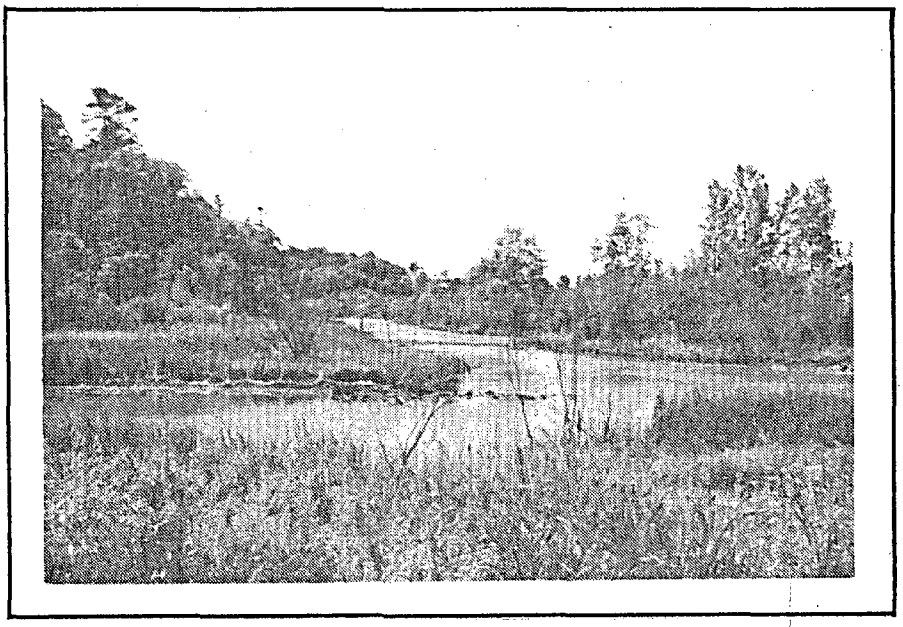
Site Description - Old White Lake Channel & Bayou

53. Old White Lake Channel & Bayou (cont.)



Photograph III-63

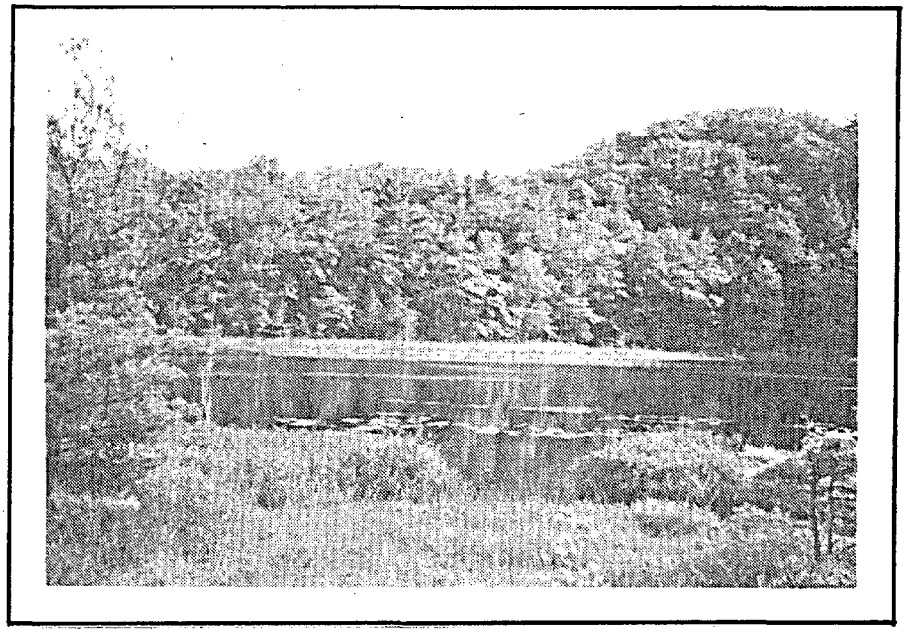
Sodony Bayou as seen looking northeast
on Old Channel Trail Bridge



Photograph III-64

The Old White Lake Channel as
seen from the same bridge looking southwest

54. LOST LAKE



Photograph III-65
Lost Lake
ECOLOGICALLY SENSITIVE AREA OF PARTICULAR CONCERN

54. Lost Lake

A. LOCATION: Laketon Township, Muskegon County. T10N-R17W-Section 6.

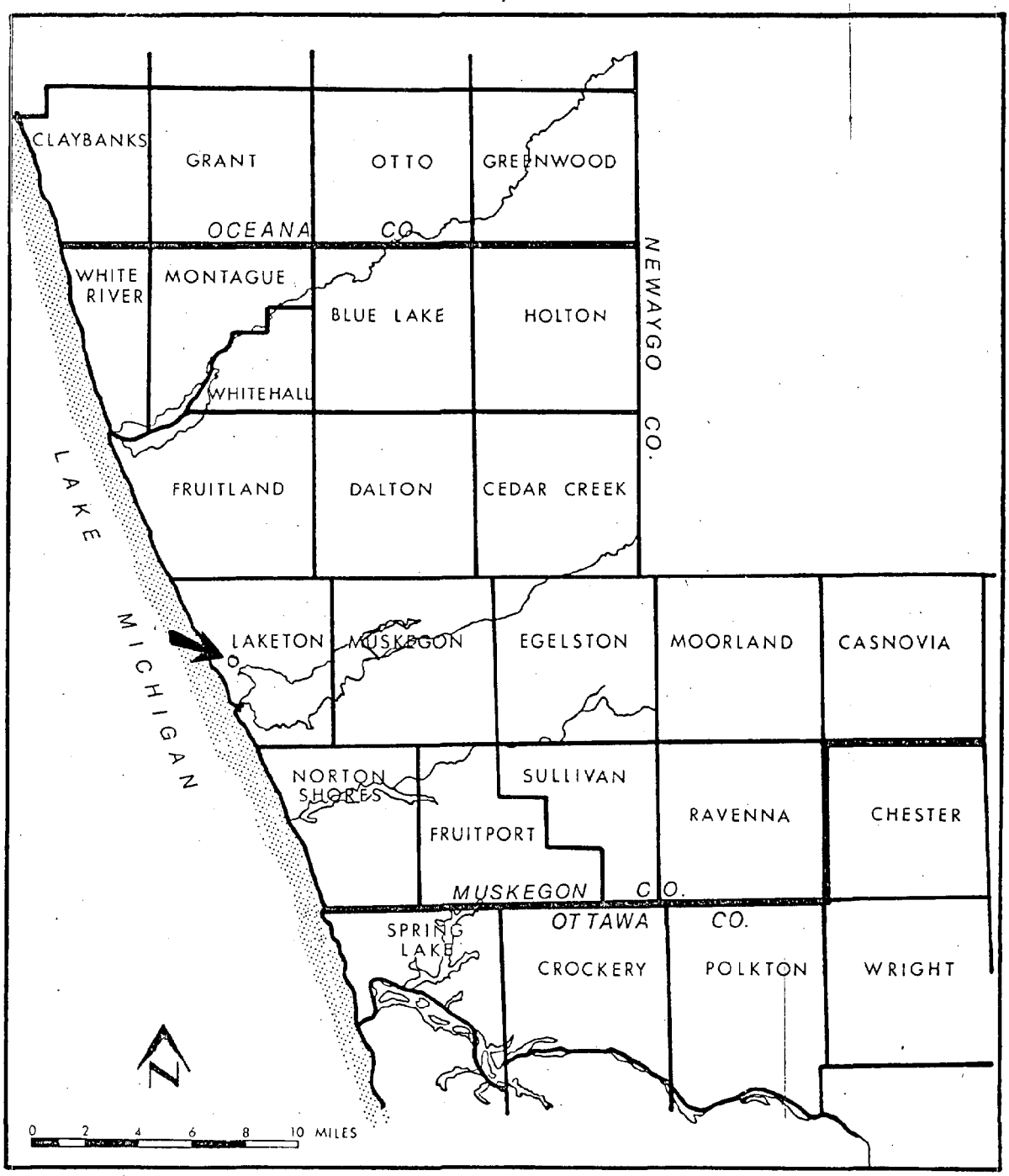


Figure III-108
General Location - Lost Lake

54. Lost Lake (cont.)

B. DESCRIPTION:

Lost Lake is a bog type lake located just east of Muskegon State Park between Scenic Drive and Peterson Road. The lake is approximately 10 acres in size. It is surrounded by vacant, mostly wooded, land. It is accessible by trail only. A small portion of the Lost Lake area falls within the Muskegon State Park boundary. The rest is split between two private owners.

Lost Lake is known for its unusual vegetation and as a wildlife habitat. The lake is used regularly as an educational area, for it is an excellent example of bog ecology.

Figure III-109 describes the Lost Lake area.

C. MAJOR CONCERNS:

The preservation of this particularly sensitive ecologic area is, of course, the major concern. Development of this area would, without a doubt, destroy it. The area's heavy use might seriously jeopardize its ecological vitality.

D. MANAGEMENT NEEDS:

The entire Lost Lake area might be acquired as part of the already extensive Muskegon State Park. Access to this area is at present limited. Access could be improved with the bog environment still protected.

E. APC STATUS;

The Lost Lake APC was originally assigned Medium Regional Priority. Nothing has happened regarding this area since it was recognized as an APC. Its priority has been reduced to the Low category.

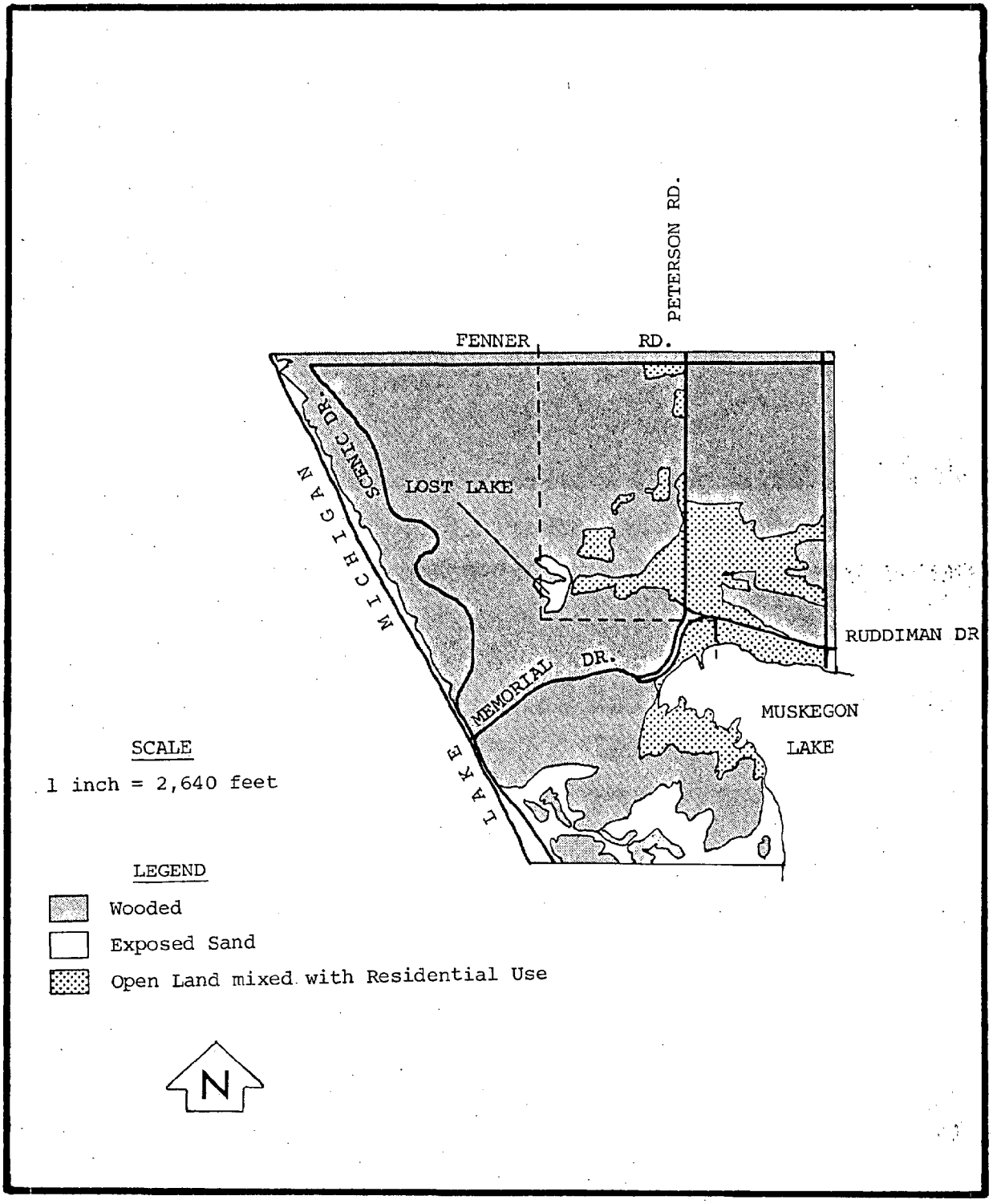


Figure III-109
Site Description
Lost Lake

CHAPTER IV
APC PRIORITIZATION

The West Michigan Shoreline Regional Development Commission seeks, as part of its policy, the orderly development of shoreland resources, the preservation of areas having special interest, and the enhancement of shoreline recreation potential. The Commission realizes that it must encourage public involvement in its Shoreland Management Program if it wishes to successfully accomplish its stated objectives, and implement its derived policy. It is for these reasons that the Commission was so willing to recognize the many Areas of Particular Concern nominated by the regional community.

The recognition given to those areas listed in the previous Chapter is not intended to suggest that the Commission desires responsibility for their subsequent management. In fact, many of the areas mentioned are being used and managed in a responsible, reasonable, and practical way. The Commission wants foremost to identify the Shoreland resources important to the region's citizens. The Commission also seeks to understand the problems and concerns which might affect these resources. Finally, the Regional Commission wishes to aid local and state governments in formulating effective management options with intent to enhance use potentials and mitigate associated problems.

Many of the problems and concerns referred to in Chapter III fall outside the Commission's given authority. Some municipalities would rather handle specific shoreland issues themselves. The Commission is, in many ways, limited in what it can do by the money it receives and the staff it is able to assign. All these factors require that the Regional Commission decide on certain priorities regarding its involvement with the recognized APC's.

In August 1976, the West Michigan Shoreline Regional Development Commission selected 26 of the 54 recognized APC's as being "Areas of Immediate Concern." These were areas where the Commission felt it might provide planning assistance to local governmental units, should these municipalities desire such assistance. These were areas that the planning staff thought deserved close attention.

The remaining 28 APC's (referred to as "Areas of Long Term Concern) would not be forgotten, but simply set asside, pending further developments.

The 26 APC's selected by the Regional Commission were summarized in a brochure published by the Michigan Department of Natural Resources in April 1977, entitled West Michigan Shoreline, A Proposed Program for Michigan's Coast. These same areas are listed below in Table IV-1. The following table also indicates whether an APC was assigned either a High, Medium, or Low action priority by the Regional Commission. This simple ranking was used to help articulate planning emphasis and was intended to give the DNR some indication as to what areas the Regional Commission thought were most important.

TABLE IV-1

COASTAL AREAS OF IMMEDIATE CONCERN
(August 1976)

OCEANA COUNTY

Area Name (Index No.)	Regional Priority
(2) Sand Mine (Golden Twp.)	Medium
(8) Cedar Point Twp. Park	Low
(10) Cheyenne Hills, Fawn Park	Low
(30) Pentwater Lake & River	High

TABLE IV-1 (continued)

COASTAL AREAS OF IMMEDIATE CONCERN
(August 1976)

MUSKEGON COUNTY

Area Name (Index No.)	Regional Priority
(4) Nugent Sand and Campbell, Wyant, & Cannon Mineral Resource Area	Low
(5) Pigeon Hill	High
(6) Swett Property	Medium
(7) Pioneer County Park	Low
(9) Whitey's Woods	Low
(19) Mona Shores School District	Low
(24) Flower Creek	Medium
(25) Little Black Lake	High
(26) Muskegon Lake, Bear Lake, and Muskegon River	High

TABLE IV-1 (continued)

COASTAL AREAS OF IMMEDIATE CONCERN
(August 1976)

MUSKEGON COUNTY (continued)

Area Name (Index No.)	Regional Priority
(28) White Lake, White River	Medium
(33) Mona Lake, Black Creek, Little Black Creek	Medium
(43) White Lake Lighthouse	Medium
(49) Flower Creek Dunes	Medium
(53) Old White Lake Channel & Bayou	Medium
(54) Lost Lake	Medium

TABLE IV-1 (continued)

COASTAL AREAS OF IMMEDIATE CONCERN
(August 1976)

OTTAWA COUNTY

Area Name (Index No.)	Regional Priority
(1) Standard Sand - Sand Mine	High
(3) Construction Aggregates - Sand Mine	High
(14) Kirk Park	High
(23) Grand River	High
(31) Lake Macatawa, Macatawa River	High
(32) Pigeon Lake, Pigeon River	High
(45) Grand Haven Light House and Pier	Low

In the time since August 1976, many changes have taken place concerning several of the recognized Region 14 APC's (many of these changes are referred to in the previous chapter as part of each APC's status report). These changes have caused the WMSRDC to look again at its APC priorities. The Commission has again divided the Region's APC's into two groups; those being an immediate concern, and those which are a long term concern. Those APC's determined as being an immediate concern were assigned a priority rating just as before. Table IV-2 lists those APC's now considered an immediate concern.

TABLE IV-2

COASTAL AREAS OF IMMEDIATE CONCERN
(September 1978)

OCEANA COUNTY

Area Name (Index No.)	Regional Priority
(2) Sand Mine (Golden Twp.)	Medium
(8) Cedar Point Twp. Park	Medium
(29) Silver Lake, Upper Silver Lake, and Holiday Lake	High
(30) Pentwater Lake, Pentwater River	High
(34) Stony Lake and Watershed	High

TABLE IV-2 (continued)

COASTAL AREAS OF IMMEDIATE CONCERN
(September 1978)

MUSKEGON COUNTY

Area Name (Index No.)	Regional Priority
(4) Nugent Sand and Campbell Wyant & Cannon Mineral Resource Area	High
(5) Pigeon Hill	High
(6) Swett Property	High
(7) Pioneer County Park	Medium
(9) Whitey's Woods	High
(19) Mona Shores School District Property	High
(23) Grand River, Spring Lake, and Associated Wetlands	High
(25) Little Black Lake	Medium
(26) Muskegon Lake, Bear Lake, and Muskegon River	High
(27) Duck Lake, Muskrat Lake	Medium
(28) White Lake, White River	High

TABLE IV-2 (continued)

COASTAL AREAS OF IMMEDIATE CONCERN
(September 1978)

MUSKEGON COUNTY (continued)

Area Name (Index No.)	Regional Priority
(33) Mona Lake, Black Creek, Little Black Creek	High
(43) White Lake Lighthouse	Low

TABLE IV-2 (continued)

COASTAL AREAS OF IMMEDIATE CONCERN
(September 1978)

OTTAWA COUNTY

Area Name (Index No.)	Regional Priority
(1) Standard Sand - Sand Mine	Medium
(3) Construction Aggregates - Sand Mine	Medium
(23) Grand River, Spring Lake, and associated wetlands	High
(25) Little Black Lake	Medium
(31) Lake Macatawa, Macatawa River	High
(32) Pigeon Lake, Pigeon Creek	High
(39) City of Grand Haven Island Property	Low
(48) North Shore Sand Dunes	High

CHAPTER V

CONCLUSIONS

The West Michigan Shoreline Regional Development Commission has begun to focus its attentions upon the formulation of a regionwide Comprehensive Development Strategy. In so doing, Oceana, Ottawa, and Muskegon Counties have been divided into two general development zones: the "Urbanizing Corridor," and the "Rural Corridor." Our planning goal is to strengthen growth in existing urban areas through a systematic development process. At the same time we will seek to preserve very valuable rural areas.

All of Region 14's Coastal Zone lies within the "Urbanizing Corridor" and will unquestionably experience considerable development pressure. Our objective is to minimize the impacts associated with this development through the prudent and rational use of shoreland resources.

The previous chapters provide the reader with a brief review of Region 14's Coastal Areas of Particular Concern. Each APC has been described in detail, its problems and potential problems have been discussed, and its Regional priority has been explained.

Figures V-1 through V-6 lists current Region 14 APC's and indicates whether or not each is considered an immediate or long-term concern.

The West Michigan Shoreline Regional Development Commission will continue to update its APC list and will re-evaluate its priorities according to its needs and the desire of those citizens it serves. The Commission has already taken certain steps to assure a continuous link between itself and the regional community. The Commission has formed two advisory groups specifically interested in Coastal Management efforts. The first group, referred to as the Region 14 Shoreland Advisory Council, is made up of elected and appointed government officials representing each of the local units sharing the Lake Michigan Shoreline. The second group, called the Region 14 Coastal Management

Task Force, has as its members citizen volunteers. The first advisory group is contacted by Commission staff regarding coastal management efforts and possible financial assistance. The second group reviews APC nominations and helps in assigning regional priorities.

This document outlines the information used by the Regional planning staff when considering the identification and management of "special shoreland areas." As such, this document is a progress report concerning just one facet of the Region 14 Coastal Management Program. It is interesting to note, however, that the management of these coastal areas is inseparably related to the welfare of the entire region. The systematic appraisal of coastal resources will go a long way in the implementation of the Comprehensive Development Strategy referred to above.

FIGURE V-1

OCEANA COUNTY COASTAL AREAS OF IMMEDIATE CONCERN
(September 1978)

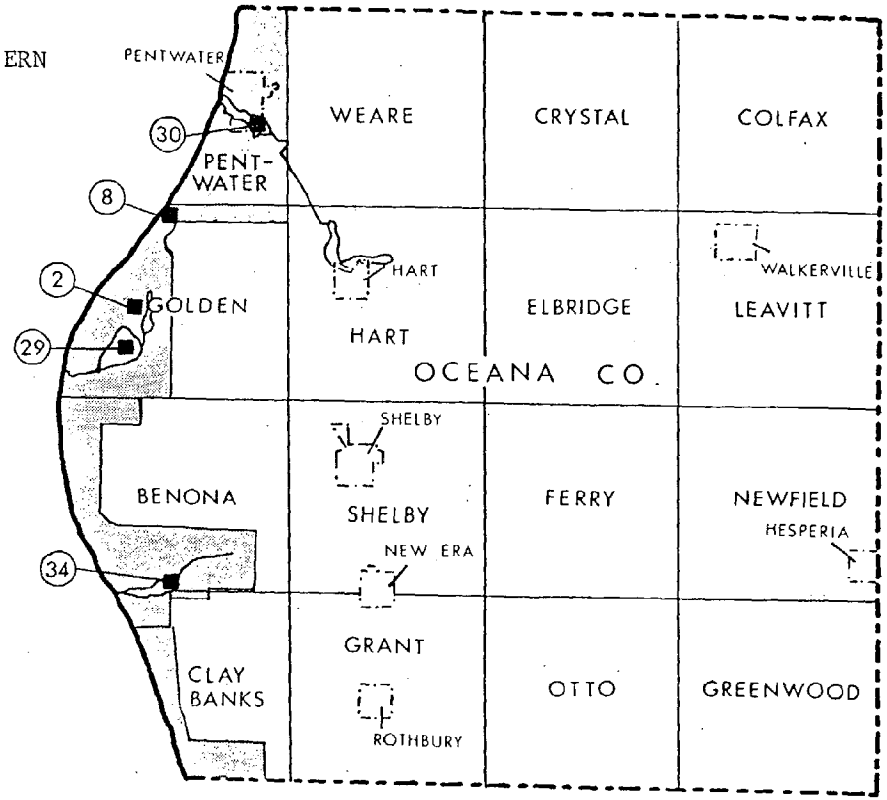
(2) Sand Mine (Golden Township)

(8) Cedar Point Township Park

(29) Silver Lake and Upper Silver Lake

(30) Pentwater Lake and Pentwater River

(34) Stony Lake and Watershed



Coastal Zone Area

County Boundary

Township Boundary

Incorporated City or Village Boundary

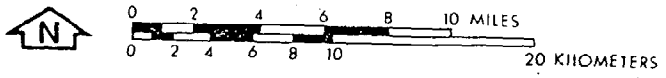


FIGURE V-2

OCEANA COUNTY COASTAL AREAS OF LONG-TERM CONCERN
(September 1978)

(10) Cheyenne Hills, Fawn Park

(17) Juniper Beach and Sahara Sands

(21) Cobmoosa Shores

(22) Cedar Bluff

(24) Flower Creek

(35) Benona Orchards

(37) Clay Banks Orchards and Row Crops

(38) Golden Broadcast Crops

(42) Indian Mounds

(46) Silver Lake Dunes

(49) Flower Creek Dunes

(50) Clay Banks Dunes

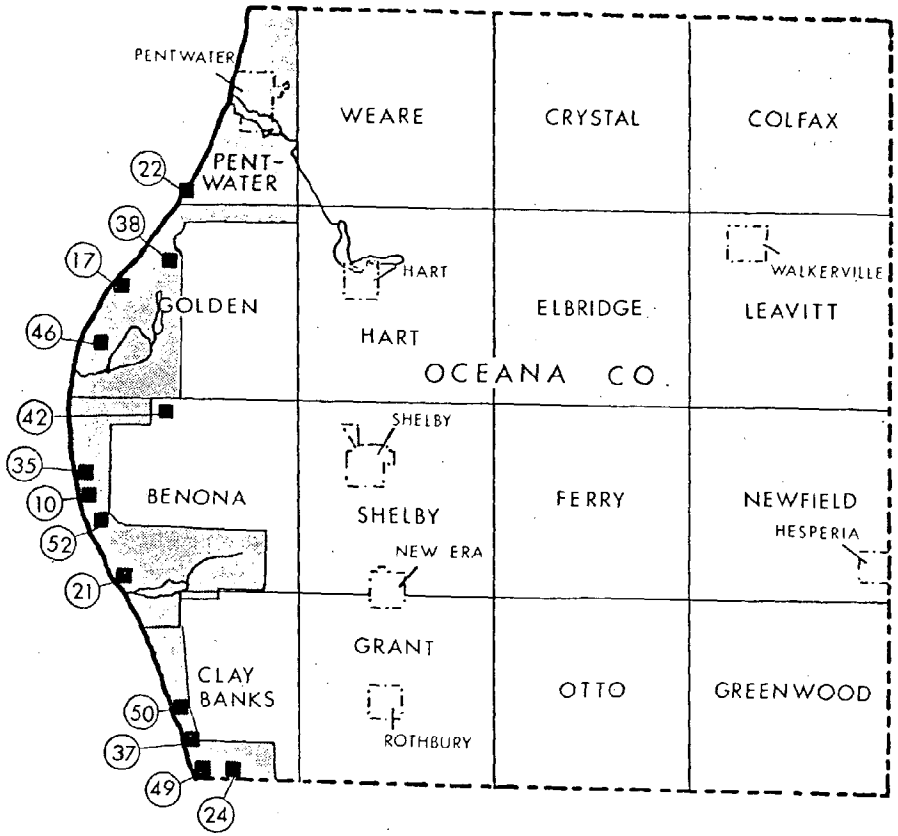
(52) Bigsbee Lake (Orwig Property)

Coastal Zone Area

County Boundary

Township Boundary

Incorporated City or Village Boundary



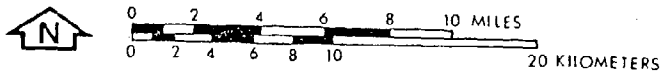
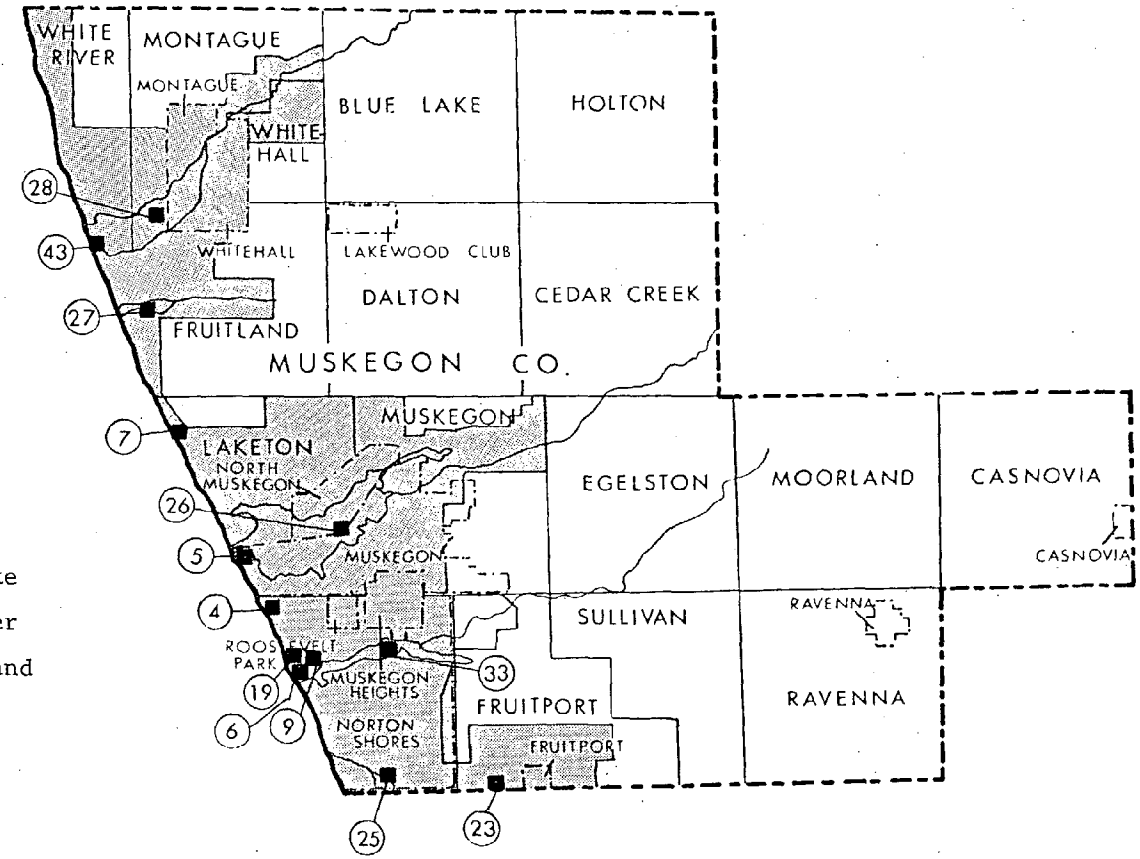


FIGURE V-3

MUSKEGON COUNTY COASTAL AREAS
OF IMMEDIATE CONCERN
(September 1978)



(4) Nugent Sand and CWC Mineral Resource Area
(5) Pigeon Hill
(6) Swett Property
(7) Pioneer County Park
(9) Whitey's Woods
(19) Mona Shores School District Property
(23) Grand River, Spring Lake, and Associated Wetlands
(25) Little Black Lake
(26) Muskegon Lake, Bear Lake, and Muskegon River
(27) Duck Lake and Muskrat Lake
(28) White Lake and White River
(33) Mona Lake, Black Creek, and Little Black Creek
(43) White Lake Lighthouse

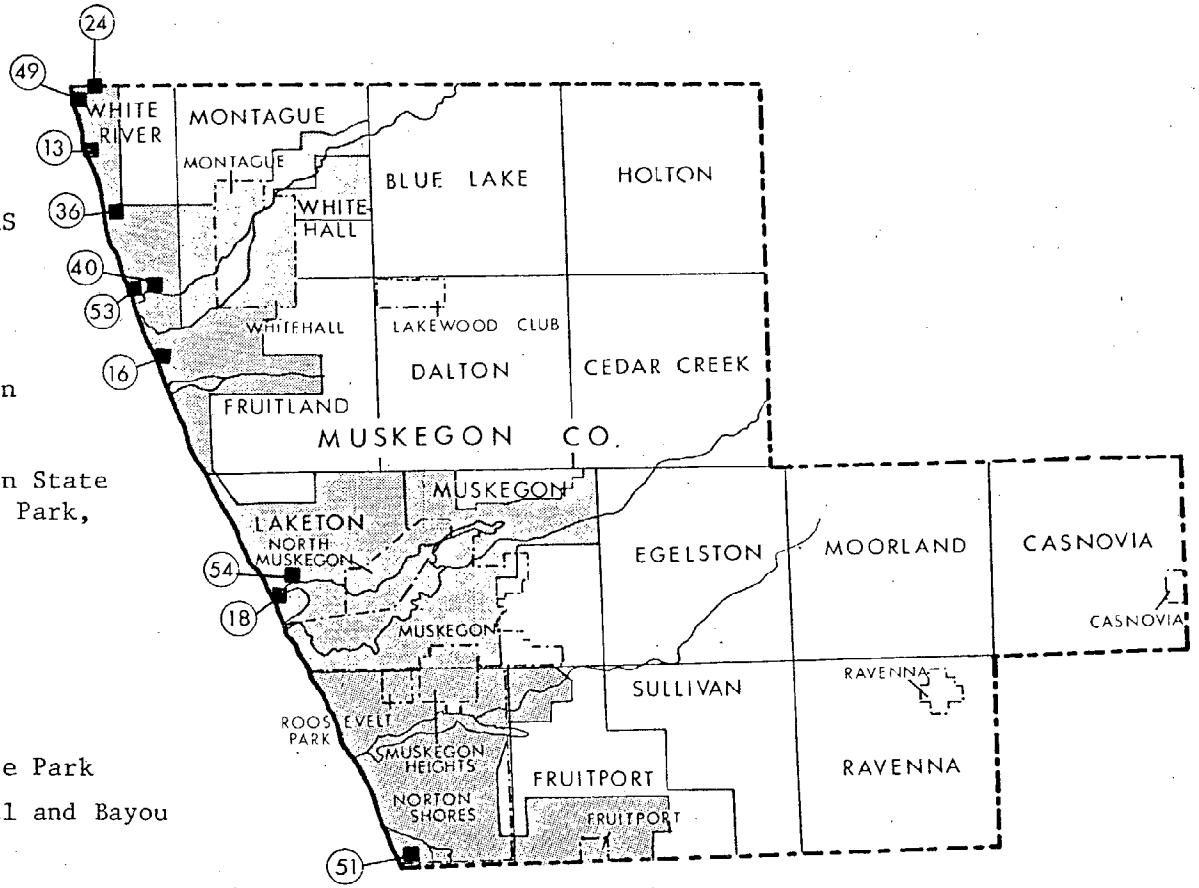
Coastal Zone Area
County Boundary
Township Boundary
Incorporated City or Village Boundary

N

0 2 4 6 8 10 MILES
0 2 4 6 8 10 20 KILOMETERS

FIGURE V-4

MUSKEGON COUNTY COASTAL AREAS
OF LONG-TERM CONCERN
(September 1978)



(13) Gray Dunes Subdivision
(16) Michillinda Beach
(18) Pioneer Park, Muskegon State Park, Pere Marquette Park, and Bronson Park
(24) Flower Creek
(36) White River Row Crops
(40) Mouth Cemetery
(49) Flower Creek Dunes
(51) P. J. Hoffmaster State Park
(53) Old White Lake Channel and Bayou
(54) Lost Lake

Coastal Zone Area

County Boundary

Township Boundary

Incorporated City or Village Boundary

N

0 2 4 6 8 10 MILES
0 2 4 6 8 10 20 KILOMETERS

FIGURE V-5

OTTAWA COUNTY COASTAL AREAS OF IMMEDIATE CONCERN
(September 1978)

(1) Standard Sand - Sand Mine

(3) Construction Aggregates - Sand Mine

(23) Grand River, Spring Lake, and Associated Wetlands

(25) Little Black Lake

(31) Lake Macatawa, Macatawa River

(32) Pigeon Lake, Pigeon Creek

(39) City of Grand Haven Island Property

(44) Rix Robinson Trading Post

(48) North Shore Sand Dunes

Coastal Zone Boundary

County Boundary

Township Boundary

Incorporated City or Village Boundary

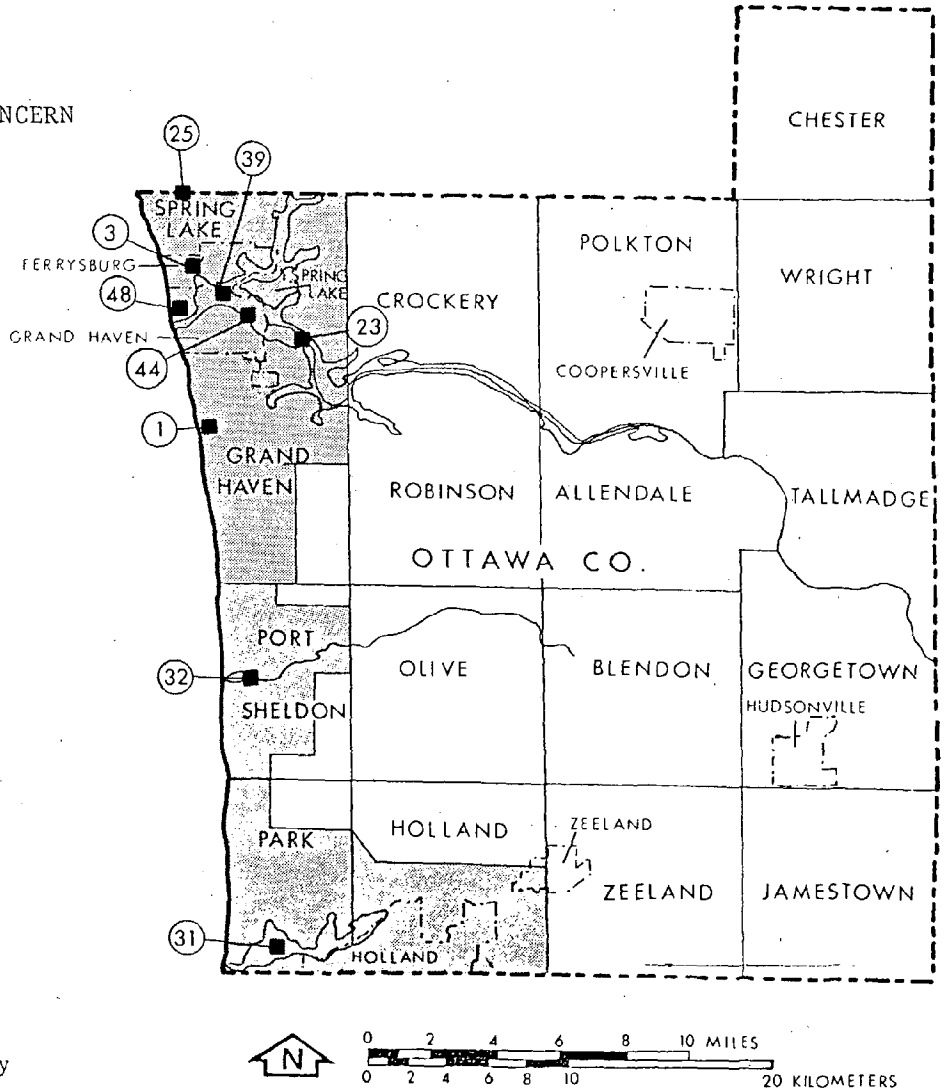


FIGURE V-6

OTTAWA COUNTY COASTAL AREAS OF LONG-TERM CONCERN
(September 1978)

(11) Idlewood Beach

(12) Postma Subdivision

(14) Kirk Park

(15) Tunnel Park

(20) Stickney Ridge

(41) Port Sheldon (Village)

(45) Grand Haven Lighthouse and Pier

(47) Ferrysburg Dune Blow-Out

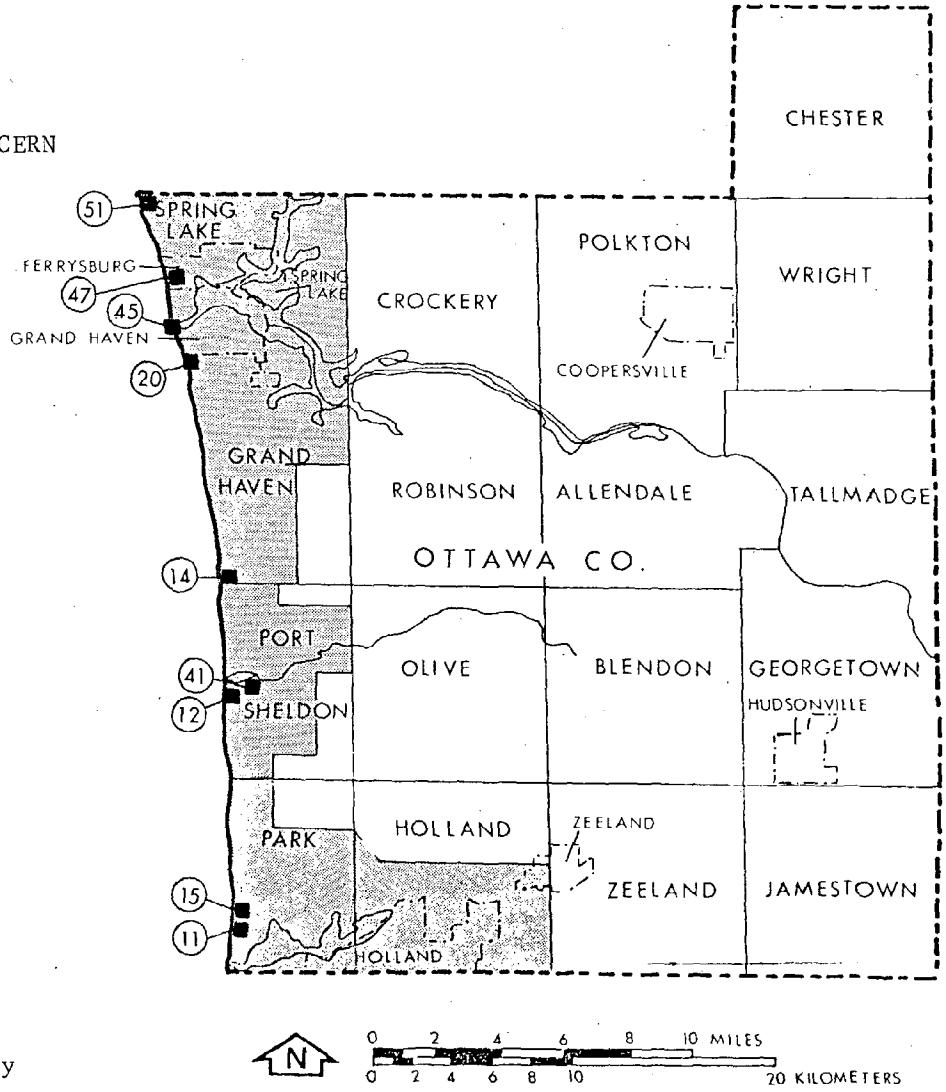
(51) P.J. Hoffmaster State Park

Coastal Zone Boundary

County Boundary

Township Boundary

Incorporated City or Village Boundary



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