Chapter 3: Natural Features

Burt Township occupies the extreme eastern end of Alger County on the south shore of Lake Superior. Most of the township's 234.4 square mile land area is occupied by the Pictured Rocks National Lakeshore and other large timber holdings, such as Benson Forest Products. Pictured Rocks National Lakeshore was designated the first National Lakeshore in America; a further discussion on this park is found at the end of the chapter.

How do the natural features, especially those of the Pictures Rocks National Lakeshore, affect development opportunities within Burt Township? What are these features? In Chapters One and Two, human and economic qualities were discussed; this Chapter will focus on specific natural features and the impact that these features have on development opportunities. These factors, along with the man-made features to be discussed in Chapter Five, will provide a framework within which public policies can be developed to produce a better environment.

Historical Role of Natural Resources

A dramatic chapter in Grand Marais history began in 1893 when the Alger-Smith Lumber Company of Detroit built its railroad from Seney to Grand Marais and moved milling operations there. During the next several years, over two thousand persons flocked to Grand Marais; Grand Marais was turned into a boom town consisting of 30 saloons, two newspapers, a dozen hotels, boarding houses and two banks. Grand Marais had become a bustling lumber port and commercial center.

Unfortunately, this economic prosperity did not endure, and the decline of Grand Marais was just as dramatic as its rapid rise was. In 1910, Alger-Smith announced the closing of operations and the abandonment of the Manistique Railway. This resulted in the hurried exodus of three-quarters of the population, and within several years, the community was left almost a ghost town.

Fishing and lumbering revived gradually, and the growing tourist trade gained momentum to give Grand Marais a more stable economy and population. The village's picturesque setting, it's air of quiet stability, and it's legacy of colorful history reach back 300 years.

Grand Marais has a combined total of twenty miles of lake and bay shoreline. Five of the twenty miles make up one of the most beautiful bays in the State. The remaining fifteen miles scan the second largest inland lake in the world, Lake Superior.

The bay shoreline is dotted with a few old fishing shacks, a public marina, a township band stand, summer homes, resort cabins, and permanent homes. Little remains of the lumbering and fishing activity that occupied so much of the shoreline in the late 1800's and early 1900's.

The harbor has been used as a place of refuge for voyagers for over 300 years. With the construction of the marina, activity has increased steadily. Pleasure boating and charter boat fishing generate the majority of trips into and out of the harbor. Commercial fishing out of Grand Marais continues to endure also.

The often turbulent lakeshore is in marked contrast to the quiet safety of the bay. The fifteen mile shoreline is almost barren of development. Two miles of shoreline are part of the Township park. More and more tourists each year search the shore for agates thrown up on the beach by the powerful wind and wave action of Lake Superior.

Geologically speaking, Alger County is relatively young. Topographically features are changing constantly, but the natural erosion processes remain active. The numerous waterfalls and shallow streams demonstrate immaturity. The most spectacular features in the county are the rock escarpments along the Lake Superior Shoreline east of Munising, and the Grand Sable Sand Dunes, near Grand Marais. The popular tourist activity is combing Lake Superior's shoreline for the highly acclaimed agate.

It was on these bases that the organic soil making processes began their long uphill battle toward fertility. These organic processes, working with the physical processes of water, have produced a beautiful township consisting of lakes, streams and small waterways; lush northern hardwood – conifer forest; and some boreal forests which are common further north in Canada. These forests are evidence of the subtle soil distinctions of the soils bases. Beach, maple, birch, elm, and hardwoods are found in the well-trained loam developed from the basal tills and morainal hills. They give way to swamp conifers, pine, and hemlock on the well-drained, yet fertile, outwash soils. If the soils are not drained, outwash soils give way to swamp conifers also. The boreal forests: spruce, fir, birch, and aspen are found in the unfertile outwash soils; giving way to stands of aspen or lush willow in poorly drained areas.

This variety of forest habitat provides a variety of wildlife. Pine martin, fisher, otter, beaver, mink, muskrat, and black bear were all sought by the fir trader. There homes were destroyed as the loggers harvested timber. By virtue of their adaptability, the mink, muskrat and black bear survived. The other species of wild life survived in smaller populations and are now recovering slowly under protective legislation. As the forests were logged, the population of coyotes and bob cats increased, keeping the populations of snow shoe hair, deer, and game birds under control. This trend is reversing itself slowly as new forests are replacing the logged-over lands. The swamp lands and along the shoreline of lakes, water fowl proliferate.

These features provide the reader with some natural determinants which, when coupled with man-made features, begin to suggest a pattern of development for Burt Township.

Bedrock Geology

Usually, bedrock occurs as solid rock layers below the surface. This is the case in Burt Township, with surface soil appearing on top of these layers. Bedrock serves a valuable function as it captures and stores water that is tapped by wells for drinking. The capacity of each different type of bedrock for providing a source of well water plus the waters quality is discussed next.

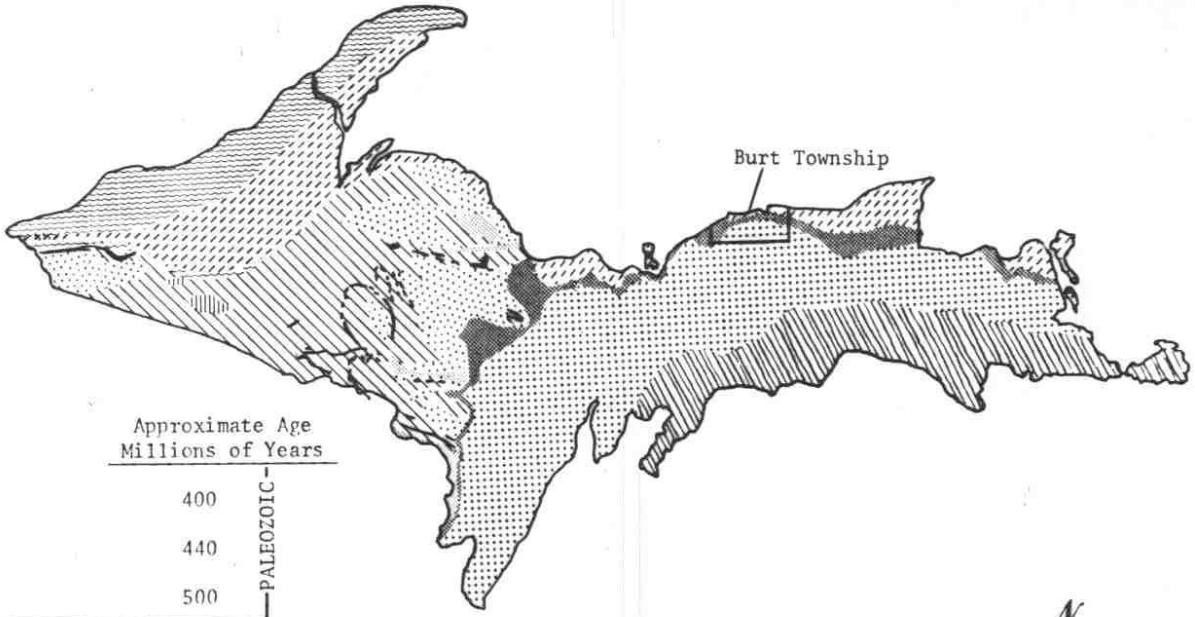
Cambrian Sandstone

This type of bedrock is found in a long narrow band that parallels the shoreline of Lake Superior. Most wells drilled into this bedrock will yield enough water for domestic purposes. Large diameter wells drilled down into the bedrock in excess of 50 feet may yield more than 100 gallons per minute (gpm). Some wells drilled down into bedrock will fade because of impermeable shale or crystalline igneous and metamorphic rocks encountered at a shallow depth. Except for moderate hardness, water quality is good.

Cambrian-Ordovician Sandy Dolomite

The southern portion of Burt Township consists of Cambrian-Ordovician Sandy Dolomite. Essentially, the sandy dolomites are composed of sandy limestone, with some shale. Most wells drilled down into this bedrock will yield enough water for domestic purposes. Large diameter wells drilled down into the bedrock in excess of 50 feet may yield as much as 50 gpm. If sufficient water is not obtained from their beds, the well may be deepened to penetrate the underlying sandstone.

MAP III-3a



Geological Period	Approximate Age Millions of Years	
Silurian	400	PALEOZOIC
Ordovician	440	
Cambrian	500	
Cambrian and/or Keweenawan	600	PRECAMBRIAN
Keweenawan	750	
Huronian	1,000	
Iron Formation		
Unassigned Intrusives	2,000	
Laurentian		
Kewatin	4,600	

BEDROCK OF THE UPPER PENINSULA OF MICHIGAN

Jacobsville Sandstone

Jacobsville Sandstone appears predominantly along the shore of Lake Superior. A narrow strip occurs in the northeast corner, running east from Grand Marais. A second narrow strip occurs on Au Sable Point. Moderate yields of water have been reported. Generally, water from Jacobsville Sandstone is moderately hard to hard, and locally it contains objectionable amounts of iron. In other areas of Alger County, wells drilled down into Jacobsville Sandstone in excess of 100 feet have produced salty water. When drilling wells in the sandstone, wells should be as shallow as possible.

Surface Geology

In this overview of the earth that makes up Burt Township, surface geology is the intermediate step between bedrock geology and soils. General categories are used to distinguish the deposits from each other. These categories imply certain processes of formation and also variety in material content. Glacial deposits occurred in three ways. Materials deposited from the ice directly without being transported by moving water are called tills; materials deposited in streams of water and transported through the movement of the water are called outwash; and those deposited in glacial lakes are called lake deposits. More specifically, the individual or combined actions of wind, water, and glaciers, produce a surface geology that reflects the forces responsible for its formation.

A brief description of the glacial deposits that are present in Burt Township follows. A map illustrating the location of each deposit is included also.

Glacial Lake Plain Deposits

This deposit occurs along the shore of Lake Superior. This material is composed of sand usually, but may contain silt or clay also. Deposits are well sorted and are well to moderately permeable. Water supply is sufficient for all domestic, and some moderate additional uses. The amount of silt or clay present determines permeability and water yield; concentrations of more than 25% silt or clay impede drainage, and in most cases the result is a swamp or marsh.

Dune Sand Deposits

Dune Sand is present west of Grand Marais in the Grand Sable Dunes, in the Beaver Lake area, and in a narrow strip southeast of Grand Marais. Dunes consist of well-sorted windblown sand of high permeability. Generally, the dunes are located above the water table and are not a good source of water.

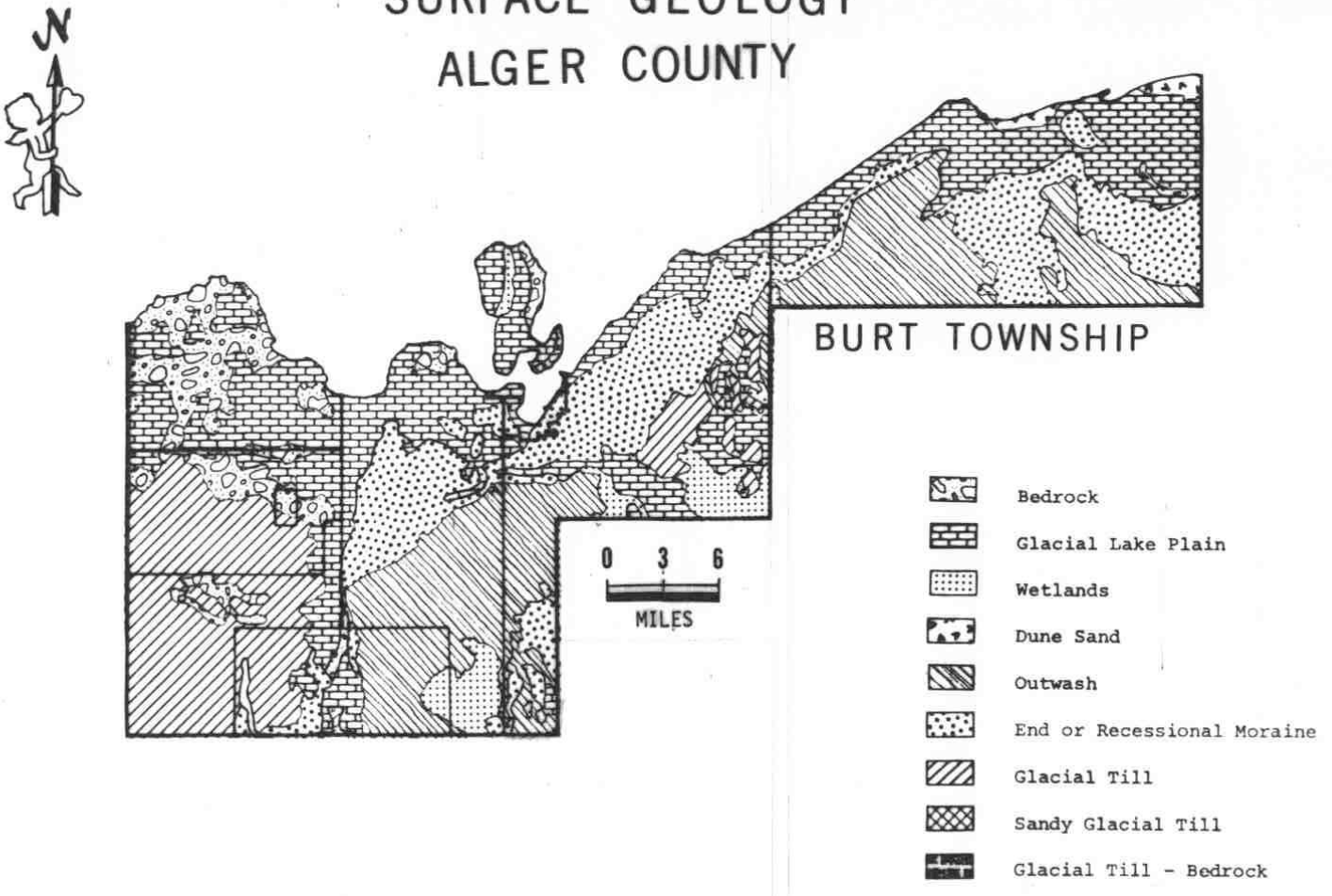
Outwash

These deposits occur in the southern portion of Burt Township. Usually, outwash deposits are found south of End or Recessional Moraines. This is the case in Burt Township, as the map illustrates.

Areas of outwash consist of stratified sand and gravel which have been deposited by glacial meltwater streams. These deposits are very permeable and are a good source of ground water. Water from outwash is of good chemical quality generally and is soft or moderately hard only. In some areas, water may contain objectionable amounts of iron.

MAP I 2

SURFACE GEOLOGY
ALGER COUNTY



End or Recessional Moraines

In Burt Township, moraine deposits are found in a belt that starts in the southeastern portion of the Township. Another belt parallels the shore of Lake Superior in the northwest portion of the Township. Sand and gravel till, with small areas of sand and gravel outwash predominates in end or recessional moraines. Locally, till is clayey or silty. Permeability varies greatly, being low in clayey till and high in outwash areas.

Soils

The soils originated from the movement of glaciers over bedrock. Tons of pressure and the slow movement of the ice turned solid rock into an extremely fine-ground material. This finely ground rock was not transported and/or deposited in any orderly pattern. This fact is easy to discern by looking at the soils map which resembles a patchwork or mosaic. Because of this scattering and mixing of soil types, general statements have to be made with regard to type and location of soils. Any specific work with soils should refer to specific data about the locations involved.

Soils are an integral and vital part of the environment and may be defined as discrete bodies produced by interactions of climate, vegetation, and surficial geologic materials on the earth's surface. Soils vary greatly from place to place in landscapes, often within short distances.

Soil Taxonomy is a natural comprehensive system of soil classification, which classifies soil properties for many uses. Soil Taxonomy is a tool designed to serve the soil mapping programs, so that characteristics of soil can be translated into maps showing areal distribution of attributes which influence past, present, and future land use and management.

Users of soil classification systems are unable to comprehend all of the complexities of soils unless the soils are grouped into meaningful units. Soil groupings involve methods and criteria by which specific narrowly defined soils and maps at the lowest levels can be placed into broader classes or categories necessary for making management and design decisions about use of land. This grouping converts a soil map into a special purpose map. Soil groups enable planners and developers to consider only those soil properties that are important to a specific purpose or use. Each user of soil maps can exploit the information in numerous ways. For example, land classification is a group of soil map units primarily on the basis of their capability to produce common cultivated crops and pasture plants without deterioration over an extended period of time.

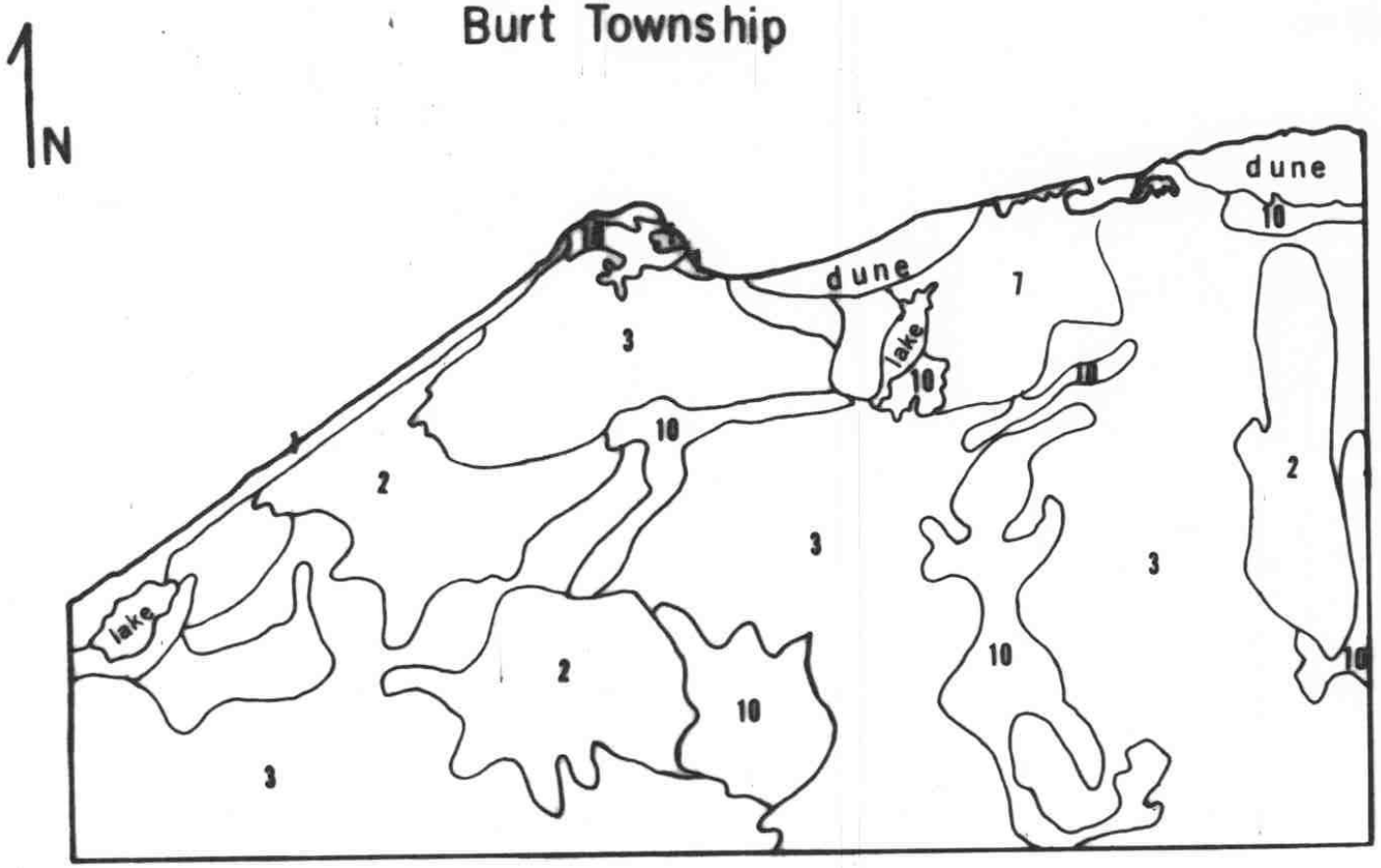
If man ignores the soil's capacity to support a specific land use, problems arise. Using technology to overcome limitations that would hold back an incompatible land use is not always wise. Everyone has heard of septic tanks that will not function because of high water tables or run off problems because of acres of land being paved with no provision for water collection. This technological overpowering of existing conditions should be done intelligently. Immediate and long-range effects need to be researched and studied and steps taken to minimize negative aspects of development. A study and analysis of soils is the first step in locating areas suitable for development.

The United States Soil Conservation Service has completed a comprehensive study of soil types and their suitability for development. They have identified soils found in the Upper Peninsula in addition to noting the specific characteristics of the soil. This Soil Conservation Service study was used as the source for that data pertaining to soils in Alger County and Burt Township.

MAP III-3

SOIL ASSOCIATIONS

Burt Township



Sources: USDA, MDOT & National Park Service

1 0 1 2 3 miles

Scale

1" = 2.75 miles

When soil suitability is considered, Alger County has four main uses that were inventoried as to limitations of soil characteristics with respect to development of these uses. These main uses do not included all uses, but are typical of the uses not mentioned. Agriculture, residential, recreation, and woodland are the four major uses. Each use and the soil characteristics which are compatible with a specific use, are outlined in the following paragraphs.

Agricultural activity consists of the production of adapted crops and the production of livestock for beef and dairy products. When rating the soil for agricultural use, topography, natural drainage, moisture holding capacity, productivity, crop adaptability, and erosion hazard are examined. The soils with compatible characteristics according to the list of desirable criteria would be best suited for agricultural use. The soil's suitability for agricultural use decreases as the number of soil characteristics that do not fulfill the requirements for agricultural activity increase.

Ratings of soil suitable for residential uses were divided according to two types of development. The first category is comprised of subdivision residences that are on lots of less than one acre in size or are part of a housing project. The second category consists of soils that are rated for suitability, according to their ability to support estate type residences that are built on lots larger than one acre in size. The soil characteristics that are used to evaluate residential development potential are: topography, natural drainage, suitability for foundations, basements, septic tank disposal systems, lawn establishment, suitability for grading, and stability in excavations. To a limited degree, these residential suitability ratings can be applied to road building, industrial sites, and other similar uses.

Two types of recreation activities are rated. Open type uses including hunting, golf courses, ski developments, parks, and nature trails. The second consists of active types of activities, including ball fields, play grounds, and tennis courts. The criteria used in evaluating the suitability of the soil for both types of recreation use were based on topography, drainage, suitability for establishing turf, suitability of an area for producing food and cover for wildlife, and availability of pond sites.

Next, an inventory of ;soil types and their major characteristics was completed. The soils were arranged into groups according to similarity in type. A general description and a list of the predominate soil types is included in this chapter. In addition, a broad interpretation of the suitability of each soil group for each of the four major uses is included. Only those soil groups that are indigenous to Burt Township will be discussed.

Soil Group #1 Shelldrake-Rubicon Association

The predominant soils in the association are deep, nearly level to sloping, well drained soils that have coarse textured subsoils. These soils are rated fair for forestry, and poor for cropland or pasture because of droughtiness. Moderate limitations exist for recreational uses because of the coarse texture of the soil. For intensive uses requiring septic tank fields, only slight limitations exist. Pollution of shallow groundwater supplies is a hazard because of the rapid permeability of the subsoil or substratum. This soil occurs in Alger County from Grand Portal Point in Munising Township to Au Sable Point in Burt Township.

Soil Group #2 Rubicon Association

The predominant soils in this association are deep, nearly level and gently sloping soils with coarse textured subsoils. Because of droughtiness, these soils are rated fair for forestry and poor for use as cropland or pasture. They have moderate limitations for recreational use because of their coarse texture. These soils are well suited to residential development. Only slight limitations exist for intensive uses requiring septic tank drainage fields. Pollution of shallow groundwater supplies is a hazard because of the rapid permeability of the subsoil.

This association is found in many areas of Burt Township. It is found both inland and along the shore of Lake Superior.

Soil #3 Kalkaska Association

The predominant soils in this association are deep, nearly level to sloping strongly, well drained and moderately well drained soils that have coarse textured subsoils. This association is rated fair for forestry and poor for pasture and croplands because of droughtiness. It has moderate limitations for recreational use because of the coarse texture subsoils. Except in areas of steep slopes, only slight limitations exist for intensive uses requiring septic tank drain fields. This association is most common in Alger County and in Burt Township. It comprises 31% of soil types found in Alger County, and a much greater percentage is present in Burt Township.

Soil Group #7 Onata-Onata, Wet Variant Association

The predominant soils in this association are moderately deep, nearly level to gently sloping, well drained and poorly drained soils with moderately course textured subsoils overlying sandstone bedrock. This soil group is rated fair for forestry, cropland, and pasture because of the sandstone bedrock; except for the wet variant association which is poorly suited for these uses because of wetness. These soils are well suited for forestry and agricultural uses and have slight limitations only for forestry, agricultural, recreational, or residential uses. This soil association is found in Burt Township from Grand Marais to Grand Sable Lake.

Soil Group #10 Tawas – Carbondale, Lupton and Rife-Roscommon Association

The predominant soils in this association are nearly level, very poorly drained organic soils; and deep, nearly level, poorly drained soils with coarse textured subsoils. Primarily because of its wetness and organic nature, this soil association is poorly suited to agricultural use and has severe limitations for a recreational or residential purpose. This soils association is spread throughout Burt Township.

Conclusions

Now that the soil groups and their inherent characteristics have been described, some general statements pertaining to the location of specific land uses in Burt Township can be discussed.

All of the soil associations that appear in Burt Township have been evaluated and rated as being poor for agricultural use; Soil Group #10, Tawas-Carbondale, Lupton and Rifle-Roscommon Association, present severe limitations to agricultural use. The only exception to the overall poor rating of the soil groups found in Burt Township is Soil Group #7. The Onota-Onota, Wet Variant Association is rated as being fair for agricultural use. This soil group is present in a relatively small area that extends from Grand Marais southwest to Grand Sable Lake. Caution should be exercised; however, because this is a wetland soil and areas considered for agricultural use that need to be drained must comply with state wetland regulations.

The soil associations that are rated poor for agricultural use are rated fair for forestry use. Soil Group #7 is rated as being fair for both agricultural and forestry use.

Soil Group #7, the Onota-Onota, Wet Variant Association is rated as being fair for agricultural and forestry uses, and only slight limitations to recreational uses exist. It would appear that the best location for any agricultural, forestry, or recreational use would be around the Grand Marais area southwest to Grand Sable Lake where Soil #7 is located.

It is important to keep in mind that in some areas in Burt Township where the soil group appears, it is a wet variant and poses some additional restrictions for agricultural and forestry uses.

Soils compatible with residential use or intensive uses requiring septic tank drain fields are distributed throughout the township. Soil Groups #1, #2, and #3 are well suited for these uses.

Soil Group #7 poses severe limitations to intensive use, because of the bedrock and wetness. Soil Group #10 is described as imposing severe limitations on both recreational and / or residential uses.

Mineral Resources

The extraction of sand and gravel for use in road construction and repair is the extent of Alger County and Burt Township's mineral resources. Two gravel pits are located just out of Grand Marais. As a source of employment, the extraction of sand and gravel does not provide a significant amount of jobs in either Alger County or Burt Township. However, these minerals are important to construction and building activities. In serving this function, they are an important natural resource. As with most natural resources, there is a finite amount of sand and gravel. To meet future demand, amounts that are sufficient in quality and quantity to meet these demands should be identified and protected for the years to come.

Floodplains and Wetlands

Rivers, streams, and creeks have areas adjacent to them that at times are inundated by excess water that cannot be handled by the natural volume of flow. These areas are called floodplains. Depending on drainage basin size, capacity of streams, normal flow, and average rain or snowfall, flooding may occur as often as every spring or as seldom as every 15 years. Therefore, development on designated floodplains should be regulated as to the type of use, building standards, and activities that would alter flooding patterns. Regulations should be consistent with state laws also.

Areas designated as wetland look like the title indicates. They are lowlands of level or nearly level poorly drained soils. In Alger County, these soils are poorly drained loams, sandy, and organic soils. For much of the year, the water table is at or near the surface. This means that if the water is not above the ground, it is near surface level below the ground. Thus, water occurring on the surface tends to collect rather than drain away or enter the soil. Wetlands are described sometimes as marsh, swamp, bog, or general muck. As a functional area serving a useful purpose, this type of land is limited to select useful purpose, this type of land is limited to select recreational activity. For example, the production of food and cover for wildlife would be the most appropriate land use. One of the most important functions of wetland areas is the filtering and retention of water.

Alger County contains spotting of these lands across its entire northern half. Burt Township occupies the northeast portion of the county. Soil Group #10, Tawas-Carbondale, Lupton and Rifle-Roscommon Association, is an organic soil association that can be described as a wetland soil. This soil association is scattered throughout all of Burt Township. A relatively large area of this soil association runs south of Grand Marais in the central area of the Township. The wet variant of the Soil Group #7, Onota-Onota, that is found around Grand Marais can be described as a wetland soil also.

Topography

The physical features of the landscape provide an area with its own unique character. Topography describes this character in terms of elevation above mean sea level. This reveals the size and shape of watersheds as well as places to avoid with development because of slopes in excess of recommended standards.

Steep topography (10% slope or greater) can be attractive aesthetically for residential, as well as some commercial, development. However, as the slope increase so does the likelihood of soil movement or slides that can be exacerbated by the increased weight of a structure or residential and commercial development. In addition to the physical danger of building on a steep slope, there is the additional cost of over-coming slope restrictions to development. Excavation of a hillside and the construction of retaining walls increase construction costs significantly. Erosion is a problem also as water rushes down the slope. Natural water courses provide the pathway for such water and should be maintained in this capacity. For these reasons, when considering areas for potential development, areas of steep slopes should be avoided.

The topography of Alger County and Burt Township varies. There is a marked contrast in elevation from some of the relatively flat inland areas to the dun areas along the Lake Superior shoreline. Areas that have been identified as having steep slopes are shown graphically on the Map III-4. Areas of 10% slope or greater are scattered all along the Lake Superior shoreline in Burt Township and provide hikers with some of the most beautiful vistas imaginable.

Most of the terrain in Burt Township can be described best as gently rolling. Numerous steams and creeks as they flow to the Lake Superior and Northern Lake Michigan Basin cut through the land. Areas of extremely rolling topography (10% slope or greater) occurs where the streams have found slight resistance only to their down-cutting action or along the Lake Superior Shore where past and present water action has been at work.

Scenic Sites

The category of natural resources called scenic sites is an ambiguous term because "beauty is in the eye of the beholder." It is impossible to list all of the "scenic sites" in Burt Township because the Township has been blessed with an abundance and wide variety of scenic wonders. Picturesque scenes are to be viewed when driving along the lakeshore or when exploring inland. As mentioned previously, the steeply sloping area along Lake Superior is a wonderful area for hikers to explore. The view from a boat is indeed impressive also.

The most noteworthy spots in the Township are those spots that people have visited and return to time and time again. They tell their friends about their most favorite spot also. The shoreline of Lake Superior is breathtaking. The Grand Sable sand dunes around Grand Marais rise to a height of 300 feet above the level of Lake Superior.

In Alger County, as the north flowing streams flow toward Lake Superior and the topography changes, abundant waterfalls are created. One of the most spectacular falls is Sable Falls located in Burt Township just west of Grand Marais. Chipmunk Falls, located in Grand Marais is no less beautiful.

It is well known among social scientists that water has a quieting effect on people. Perhaps this is why Burt Township seems to have an almost ethereal quality about it. Whether one is looking at a spectacular waterfall, a natural escarpment, or water cascading gently over rocks in a shallow stream, a sense of calm pervades the atmosphere. Grand Marais itself is a quiet, sleepy sort of town. The pace slows, and visitors to the area have time to enjoy nature at its finest. There is something for everyone. The entire Township is a scenic site.

MAP III-4

BURT TOWNSHIP
AREAS OF TEN PERCENT SLOPE OR GREATER

STEEP SLOPES

As they appear now, all of the scenic sites are beautiful. With increased use; however, there is the danger of damaging the natural beauty of the Township. Proper development; development that is researched and planned, can take better advantage of these treasured areas, so that they can be enjoyed as well as protected and preserved.

Water Features

Lakes, streams, and rivers constitute water features. Burt Township has an abundance of these water features; Lake Superior forms the northern boundary of the Township with numerous lakes and streams scattered throughout the Township.

In the functional sense, this abundance of water features provides the Township with valuable water resources. The surface streams, Lake Superior, and the ground water reservoirs can be tapped to supply large quantities of water; quantities sufficient for any anticipated economic growth. These same water features attract an increasing number of tourists yearly. Because the growth of Burt Township is related primarily to the tourist industry, these water resources are vitally important. Their importance should be emphasized through the Township's goals, objectives, and policies that are used to direct growth and development within the Township.

Streams are scattered throughout Burt Township; those located in the northern portion empty into Lake Superior, and those in the southern portion empty into Lake Michigan. Inland lakes predominate in the lowlands where depressions are numerous. In Burt Township, these areas of lake concentrations occur in the southern portion of the township. Two of the largest lakes; Beaver Lake and Grand Sable Lake are located just inland from Lake Superior.

On November 3, 1988, the Michigan National Resources Commission voted to designate the Fox River as a "wild-scenic" river, under authority of the Michigan's Natural River Act (Act 231, PA 1970). The Fox River originates in a semi-open marsh area of Burt Township and flows south approximately 26 miles to the confluence with the Lake Branch of the Manistique River. In addition to the Fox River mainstream, the West Branch also originating in Burt Township, is part of the wild-scenic designation. The Fox River is known for it's excellent brook trout fishing.

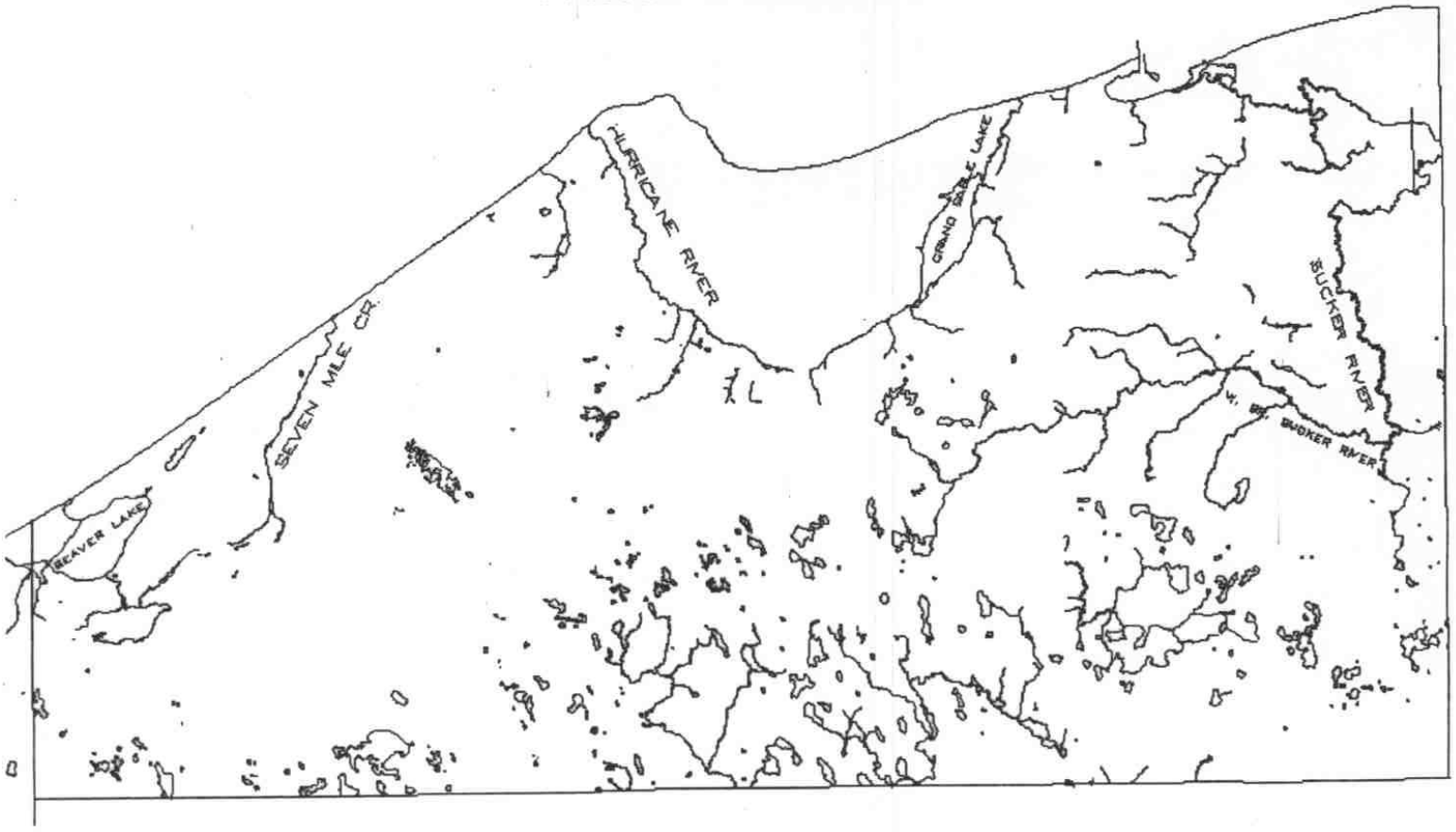
The majority of the Fox River system is located in Schoolcraft County to the south. Approximately 3 ½ miles of the Fox River mainstream is located in the Township, approximately 4 miles of the West Branch is within the Township. State lands boarder the West Branch and Benson Forest Products and private land holding boarder the Fox River mainstream.

In designating the river, the state has adopted a Natural River Plan which provides for the protection of the Fox River as a wild-scenic river. A "wild-scenic river" is of a wild character with wild or forested boarders in close proximity to human development.

The Fox River Wild-Scenic River District includes an area 400 feet deep on each side of the mainstream and its designated tributaries. Within private lands in the district, there should be a 100 foot natural vegetation strip adjacent to the river, and a 200 foot strip on State lands. Through State land and program management, and local and state zoning, the Fox River Natural River Plan will serve as a basis for "preserving and enhancing (the rivers) values for water conservation, it's free flowing condition and it's fish, wildlife, boating, scenic, aesthetic, floodplain, ecologic, historic and recreational values and uses."

Map III-5

BURT TOWNSHIP
Water Features



Fish and Wildlife

Outdoor recreation activities in Burt Township consist of Hunting and Fishing mainly. The forest covered landscape supports a variety of wildlife. The lakes and streams provide an excellent environment for several species of fish and birds. Coast Guard Point and Grand Marais Harbor is the nesting ground of the endangered Piping Plover. As long as the natural conditions are maintained, the land and water will continue to support the fish and wildlife. Development pressures and increasing population can have an adverse effect on the natural habitats of the fish and wildlife. Protective measures will preserve and maintain this resource for the benefit of both the residents and tourists.

Pictured Rocks National Lake Shore

Pictured Rocks National Lakeshore is situated in the northeastern section of Alger County along the Southern Shore of Lake Superior. Pictured Rocks National Lake Shore extends about 35 miles from the City of Munising to the community of Grand Marais, of which 21 miles, or 60% are located within Burt Township. The Lakeshore area comprises 73,174 acres of which 19,184 (26%) are located in Burt Township.

The Pictured Rocks area has long been recognized as an outstanding recreation area. The State of Michigan had plans in 1924 to develop the area as a state park, but lack of funding prevented needed land acquisition. National legislation was passed in 1966 creating the Lakeshore and in 1972, the Pictured Rocks National Lakeshore was formally established.

The Lakeshore is known for it's multicolored sandstone cliffs that extend approximately 12 miles along Lake Superior. Some miles east of the cliffs, the Grand Sable Dunes rise over 300 feet above Lake Superior. The Dunes are a major lakeshore attraction and are a rare occurrence in the Great Lakes region and contain uncommon plant species.

The formation of the Pictured Rocks Region was a result of geological processes. Uplift and erosion of the sandstones created the Pictured Rocks, as well as the stacks and arches along the lake. Glaciation formed some of the inland lakes and valleys. The last retreating glacier deposited a terminal moraine over most of the length of the area and left a large gravel outwash plain (Kingston Plains) to the south of the moraine. This glacier and its subsequent lake stages area responsible for the formation of the Grand Sable Dunes and the beaches along the Lake Superior shoreline.

There are a number of significant resources within Burt Township which are briefly described below:

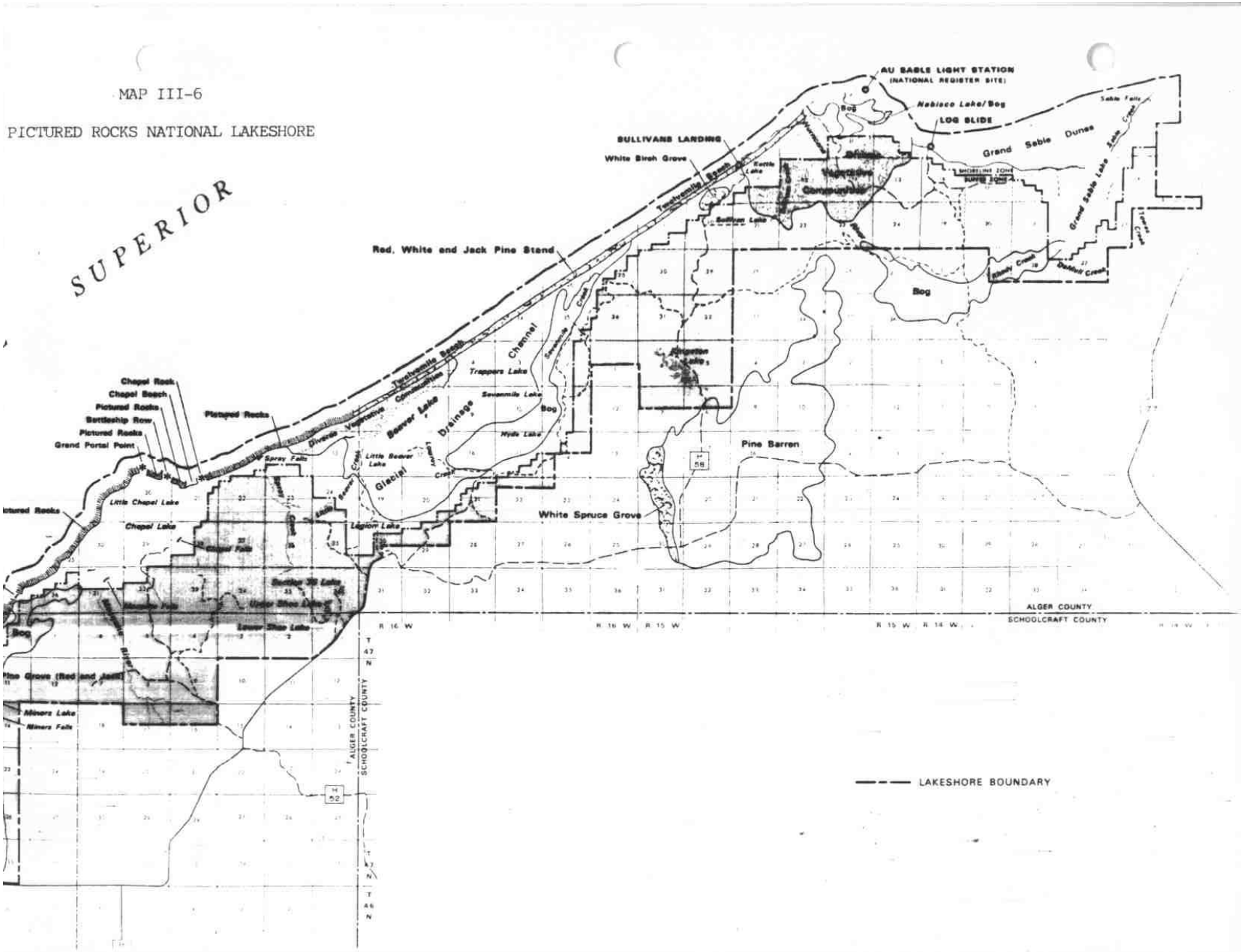
Beaver Basin: Beaver basin is encircled by a landward extension of the Pictured Rocks. The basin contains several streams and lakes, including the lake shores largest, Beaver Lake, and is open to Lake Superior along the western half of Twelvemile Beach.

Au Sable: Twelvemile Beach continues from Beaver Basin nearly to the Au Sable Point. Kingston Lake and Kingston Plains, the vast tree-stumped gravel outwash plain, are situated inland.

Grand Sable Dunes: The Grand Sable Dunes extend for 4 miles along Lake Superior, rising over 300 feet above Lake Superior. On the inland side of the dunes is Grand Sable Lake. Sable falls is at the east side of the dunes.

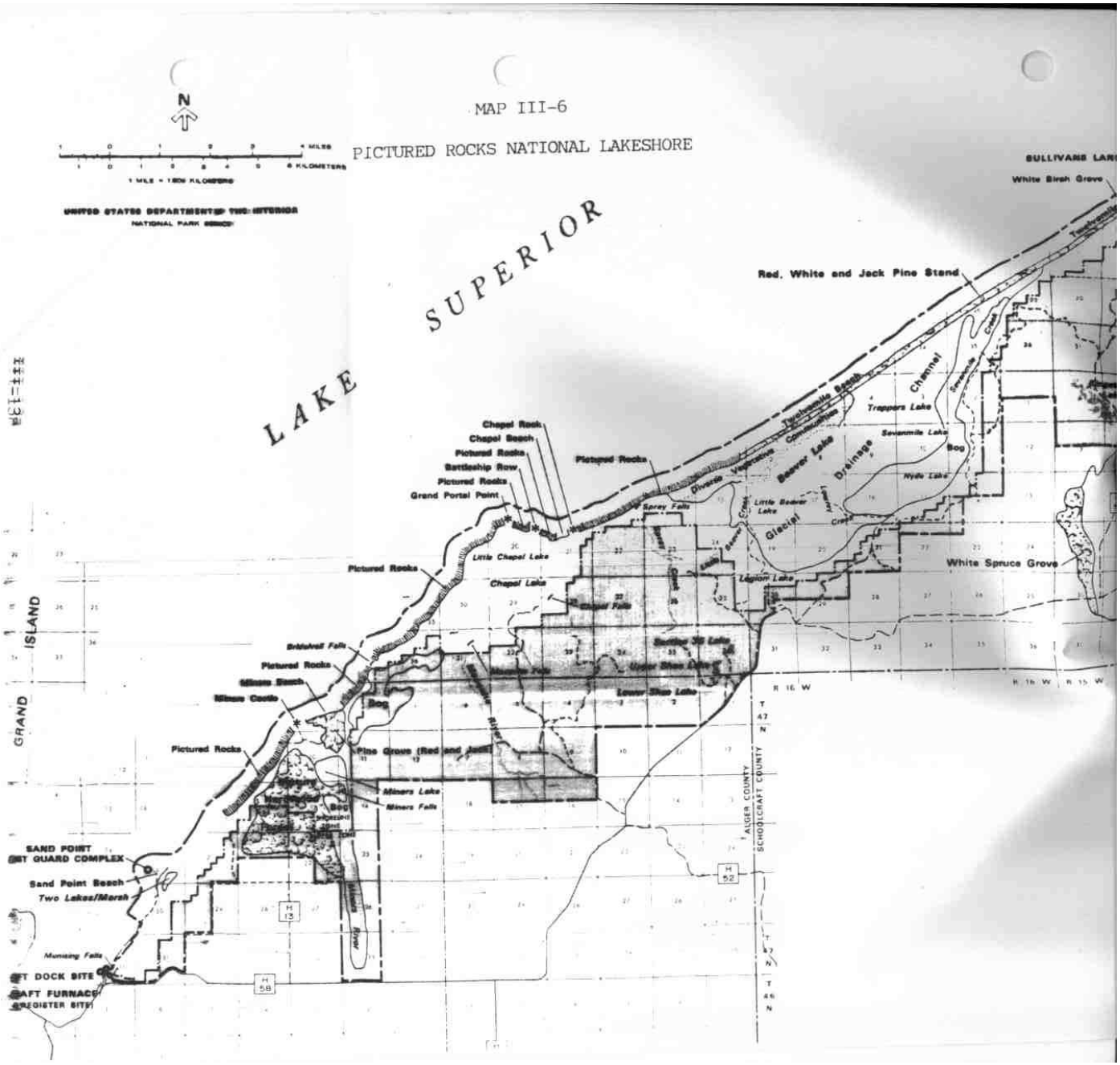
MAP III-6

PICTURED ROCKS NATIONAL LAKESHORE



MAP III-6

PICTURED ROCKS NATIONAL LAKESHORE



Conclusions

The growth strategy for Burt Township must be compatible with the capacity of the natural resources to support development and increase growth. Efforts must be taken to insure the maintenance of environmental quality while minimizing both public and private development costs. Each of the specific elements of the natural environment outlined in this chapter impose restrictions on development.