Chapter 2: Environment

Overview

It is the abundance and quality of natural resources that draw people to live and recreate in Presque Isle County. That same abundance of woodlands, wetlands, water and wildlife drew pioneers here over 100 years ago and Native American's here 1000's of years ago. Today, public lands form a foundation of green space within the County. The public lands are connected by the green infrastructure of forests, wetlands, and open space on private lands. An important role of local land use planning is to provide for community development while protecting the critical and vital web of ecological resources within a community. Since resources extend far beyond the County borders, we also have a responsibility to communities outside the County.

Climate

The climate is a factor, which contributes to Presque Isle County's appeal as a place to live and spend leisure time. The County's climatic conditions are best described as long cold winters and moderate warm summers. The year round climate is heavily influenced by Lake Huron, particularly in coastal communities like Rogers City. Lake Huron acts like a large hot water bottle in the fall, warming the nearby land area and prolonging the growing season. In the spring and early summer, Lake Huron has the opposite effect of cooling the adjacent land area. Further inland, the lake moderating effect diminishes. Local topography can influence temperatures and associated frost conditions. For example, low areas and depressions will often experience earlier frosts than surrounding uplands. **Table 2.1** contains weather statistics recorded at weather reporting station in Onaway. As mentioned above the weather conditions do vary across the County, depending upon topography and proximity to Lake Huron.

The frost-free season is typically June 1st to September 12th, which provides for an average 104-day growing season. The mean annual temperature for Presque Isle County is 43.9^{o} F. In the winter the average temperature is 20.1^{o} F, with the average minimum daily temperature of 11.7^{o} F. The lowest temperature on record is minus 35^{o} F. In the summer the average daily temperature is 78.8^{o} F. The highest recorded summer temperature is 107^{o} F. The average annual precipitation, including snowfall, is 31 inches; nearly 19 inches of the precipitation occurs as rainfall during the growing season of April through September. The average annual snowfall is 98 inches.

Table 2.1
Average Annual Weather Statistics, Presque Isle County

January average minimum temperature	9.7^{o} F
January average maximum temperature	26.7^{o} F
July average minimum temperature	55.0^{o} F
July average maximum temperature	81.1^{o} F
Average daily temperature for the year	43.9^{o} F
Average annual precipitation	30.98 inches
Average annual snowfall	98 inches
Source: Weather Reporting Station at Onaway, Michigan	

Severe Weather

Data from the National Oceanic and Atmospheric Administration shows that, from 1957 through 2002, there were 123 severe weather events in Presque Isle County causing over $350,000 in damages and injuring 16 people. Between 10/01/2006 and 06/15/2012 there were 34 severe weather events.

Although relatively rare, tornados have occurred in Presque Isle County. Michigan is located on the northeast fringe of the Midwest tornado belt. An average of 15 tornados touch down throughout the State of Michigan each year. The relatively low frequency of tornados occurring in Michigan may be, in part, the result of the colder water of Lake Michigan and Lake Huron during the spring and early summer months, a prime period of tornado activity. Between 1956 and 2011, seven tornadoes have been verified within Presque Isle County causing over $300,000 in property damage. Primarily a summer time event, most tornados occur in the months of June, July and August. In Presque Isle County three tornadoes have occurred in August, two in July, one in June and one in May. Theoretically, tornados can happen any time of year and have occurred in other northeast Michigan Counties in the early spring and late fall. A tornado has never been recorded in northern Michigan during the winter months of November – February. The magnitude of a tornado is described by using the Fujita Scale. The Scale ranks tornadoes from F0 to F6 based on wind speed and intensity. F0 and F1 tornados are described as weak tornados with wind speeds from 40 to 112 mph, F2 and F3 are strong tornados with wind speeds from 113-206 mph, F4 and F5 are violent tornados with wind speeds from 207 to 318 mph and an F6 is an inconceivable tornado with wind speeds above 319 mph. Of the 10 tornadoes that have struck Presque Isle County, two were F2, three were F1 and two were F0. The most destructive tornado was an F2 that occurred on May 8, 1964, causing $250,000 in property damage.

Strong winds and thunderstorm winds are the most prevalent severe weather that affects Presque Isle County. Annually, thunderstorms will occur on an average of 30 days per year. Between 1956 and 2011, there have been eight severe wind events associated with thunderstorms recorded in Presque Isle County. Strong winds associated with thunderstorms are most likely in the summer months of June July and August, but damaging winds can occur any time of year. One of the most powerful windstorms ever recorded in the Great Lakes region occurred on November 10, 1998. This storm caused extensive damage across northern Michigan and wind speeds from this powerful storm reached 82 knots in Presque Isle County.

Winter storms consisting of heavy snow, freezing rain and blizzards are common seasonal hazards that can be expected to occur several times every year. The number of snowstorms can fluctuate widely from year to year. In 1993 heavy snowstorms occurred 8 times while in 1996 no heavy snowstorms or blizzards were recorded. From 2006 to 2012 there were __ severe winter weather events ranging from winter storm and lake effect snow to heavy snow.

The following snow fall extremes, based on the time period of this station's published record, are:

- Greatest observation-day total: 16.3 inches (recorded January 26, 1978)
- Greatest monthly total: 49.4 inches (recorded March 1926)
- Greatest seasonal total: 166.3 inches (recorded during 1970-71)
- Least seasonal total: 26.9 inches (recorded during 1936-37)
- Greatest snow depth: 35 inches (recorded February 18, 1936)

Freezing rain events can cause wide spread damage and can be an extremely costly natural hazard. Ice laden limbs break off trees and cause damage to homes and power lines and travel on ice covered roads is extremely hazardous, if not impossible. On January 27, 1994, a freezing rain storm that swept across northern Michigan paralyzed the area and caused over five million dollars in damages. Freezing rain events are most likely to occur in January, February, and March.

Geology

The geology of Presque Isle County, as well as the entire northern Lower Peninsula, can be described in terms of the surface geology and bedrock geology. The retreating continental glacier created the rolling hills, river valleys, swamps and lakes some 10,000 years ago. Beneath this mantel of the glacial deposits lays a foundation of layered sedimentary bedrock. Within the central and southwestern portions of the county, medium textured glacial till deposits (non-sorted loam and silt loam with variable amounts of cobbles and boulders) created landforms called ground moraines and till plains. The Onaway Drumlin field and Moltke Drumlin Field are located in these areas. The drumlin fields are ground moraine areas that consist of scattered elliptically shaped streamlined hills sculptured from thin glacial drift. The drumlins trend in a southeastward direction and record the re-advance of the glacier. Overriding ice molded these streamlined hills that are up to a mile long.

The foundation of the Lower Peninsula, beneath the thin mantel of glacial deposits, consists of layers of sedimentary bedrock that were created during the upper and lower Devonian ages of the Paleozoic Era. The bedrock was formed in ancient seas, which covered the area some 345 to 405 million years ago. Shallow marine seas deposited layers of silt, clay, sediments, marine animals, plants, coral, and other calcareous materials. These deposits formed shale, limestone, and dolomite bedrock. The youngest bedrock, Antrim Shale, is found in the southwest corner of the County. Traversing the County in a northerly direction, formations include the Traverse Group, Bell Shale, Dundee Limestone and the Detroit River Group. Limestone and dolomite, extracted from Michigan Limestone and Stoneport quarries, are fine-grained, finely crystalline, very pure and high quality.

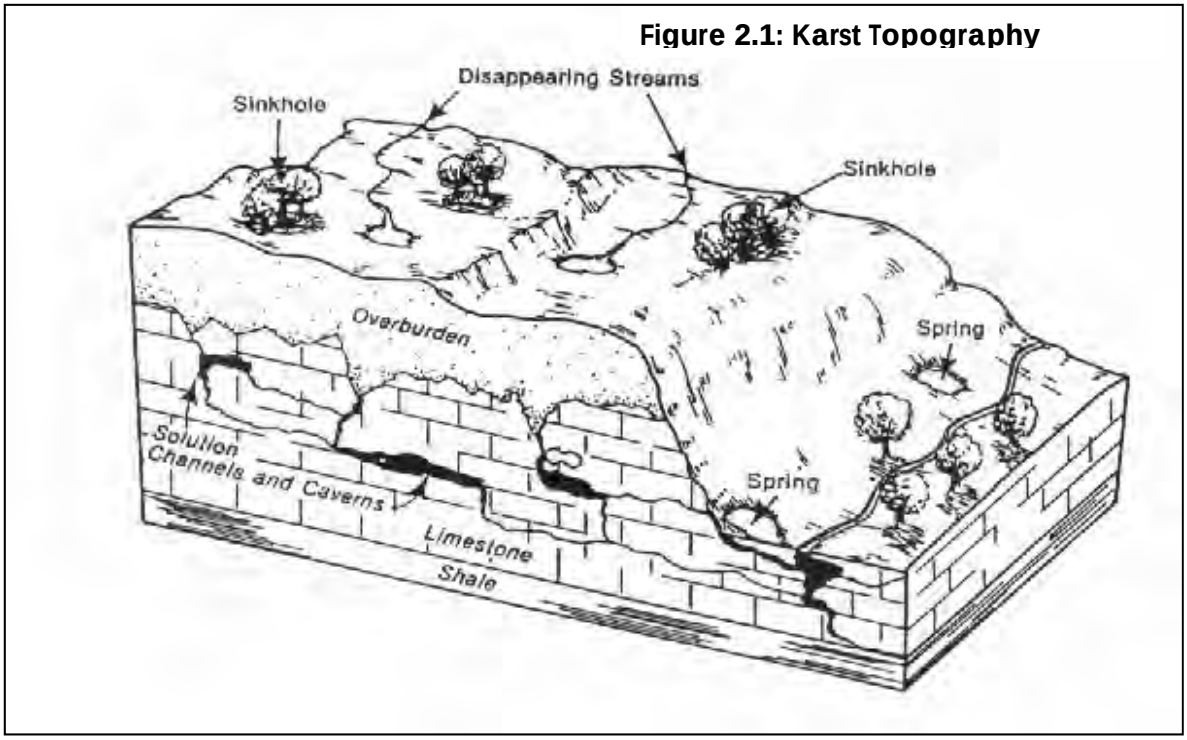
One important regional bedrock feature in Presque Isle County is the occurrence of sinkholes and underground streams. As groundwater flows through cracks and fissures in the bedrock, limestone gradually dissolves and the openings are widened. Over a long period of time underground caverns form and the ceilings become thinner. The ceiling collapses when it becomes too thin to support weight above, thus forming a sinkhole. "Karst" is the scientific term used to describe a type of topography that is formed in dissolved limestone, dolomite or gypsum and is characterized by sinkholes, caves and underground drainage. Karst is also a term used to describe a very distinct terrain as well as the process by which it formed. **Figure 2.1** illustrates karst features.

Karst features are present in several northern Michigan counties but are most prevalent and have the greatest number of exposed features in Presque Isle and Alpena Counties. **Figure 2.2** shows groupings of sinkholes that are found on the Rockport property in Presque Isle Township and in the Shupac Lake area in Allis Township. In addition to providing an interesting geographic feature, sinkholes also can host unusual plant communities. The relatively moist terrain with bedrock at or near the surface and the partially subterranean shaded location provide an environment that sustains vegetation not found in the surrounding surface areas.

Sinkhole areas are often especially vulnerable to pollution. Over the years sinkholes have been used as dump areas. The accumulation of refuse is especially dangerous because of the direct

connection to the groundwater that usually exists in a sinkhole. One particular sinkhole clean-out project recently netted eight automobiles, three snowmobiles, a 250-gallon fuel oil tank, and several tons of other metal materials along with a large amount of household trash. Local action to protect and preserve sinkholes is recommended both on account of their scenic value and as

Figure 2.1: Karst Topography



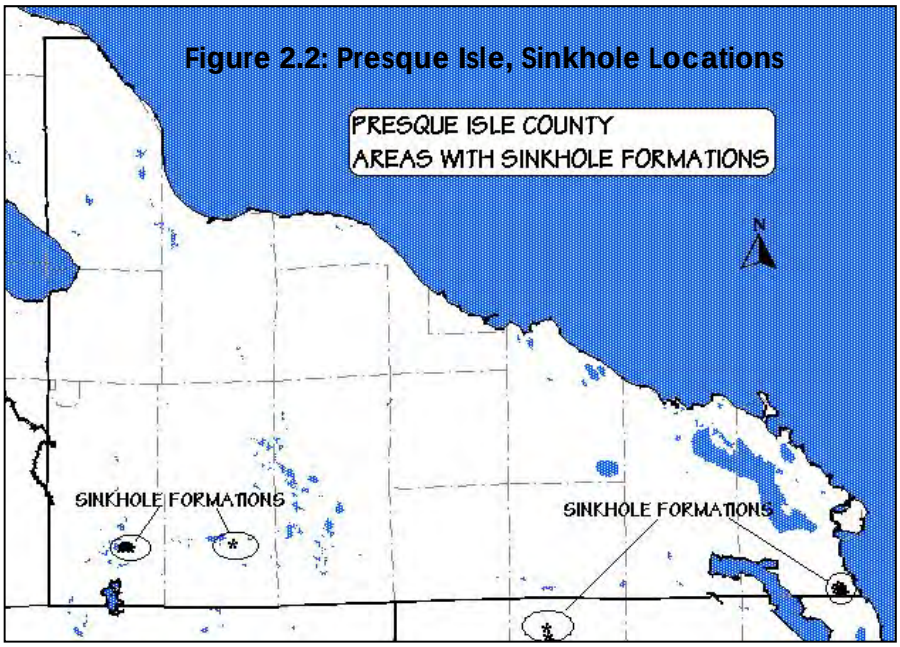
a groundwater quality protection measure.

Topography

While the County consists of plains, rolling plains, and hilly lands, the variations in elevation are not extreme. The average elevation of Lake Huron is 580 feet above sea level, and the highest points in the County are 950 feet above sea level. The highest points are located in Moltke, south Allis and south Case Townships. The greatest local variations in elevations occur between the lake plain west of Rogers City and the Moltke highlands in the numerous sinkholes mentioned above and within the lakes region associated with the upper Ocqueoc River.

Soils

When planning for types and intensity of future land uses, soil types and slopes are two important factors that determine the carrying capacity of land. Soils most suitable for development purposes are well drained and are not subject to a high water table. Adequate drainage is important in minimizing stormwater impacts and the efficient operation of septic drain fields. Adequate depth to the water table is necessary to prevent groundwater contamination from septic systems or other non-point source runoff. The construction of roads, buildings and septic systems on steeply sloped areas or areas with organic and hydric soils requires special design considerations. In addition, costs for developing these sensitive areas are greater than in less constrained parts of the landscape. If developed improperly, the impacts to natural resources can be far reaching.



The Natural Resource Conservation Service completed a detailed soil survey of Presque Isle County. A digital or computerized version of the soil survey maps was acquired from the Michigan Center for Geographic Information's web site. Using information contained within the published soil survey book, a series of maps is presented that depict hydric soils, slopes 18 percent and greater, and areas where the bedrock is close to the surface. While soil constraints discussed in this section can be used as general guides for the planning process, it should not be used for development of specific sites. Detailed, on-site investigations should be conducted prior to development.

Hydric Soils and Steeply Sloped Areas

Figure 2.3 is a thematic map that classifies hydric soils and soils on steep slopes. Lower density and less intensive development should be directed to these areas with severe building constraints. Hydric soils are saturated, flooded, or ponded during part of the growing season and are classified as poorly drained and very poorly drained. Hydric soils have poor potential for building site development and sanitary facilities. Wetness and frequent ponding are severe problems that are difficult and costly to overcome. Sites with high water tables may be classified as wetlands and a wetlands permit would be required to develop these areas. Some 137,535 acres (approximately 33 percent of the land area in the County) were mapped as hydric soils. An additional 82,216 acres of soils with hydric inclusions were mapped. These are upland soils with small areas of hydric soils that weren't mapped. The hydric soils are generally located adjacent to streams and creeks. This connectivity of riparian wetlands and surface water features can be seen throughout the landscape.

Hills and steeply rolling terrain provide opportunities for spectacular views of the landscape. However, steeply sloped sites have severe building constraints and are more difficult and costly to develop. Maintenance costs tend to be higher on steeply sloped terrain. Special design standards such as erosion control measures, limiting size of disturbed areas, retaining natural vegetation, re-vegetation, slope stabilization and on-site retention of water run-off from impervious surfaces would all serve to minimize resource impacts.

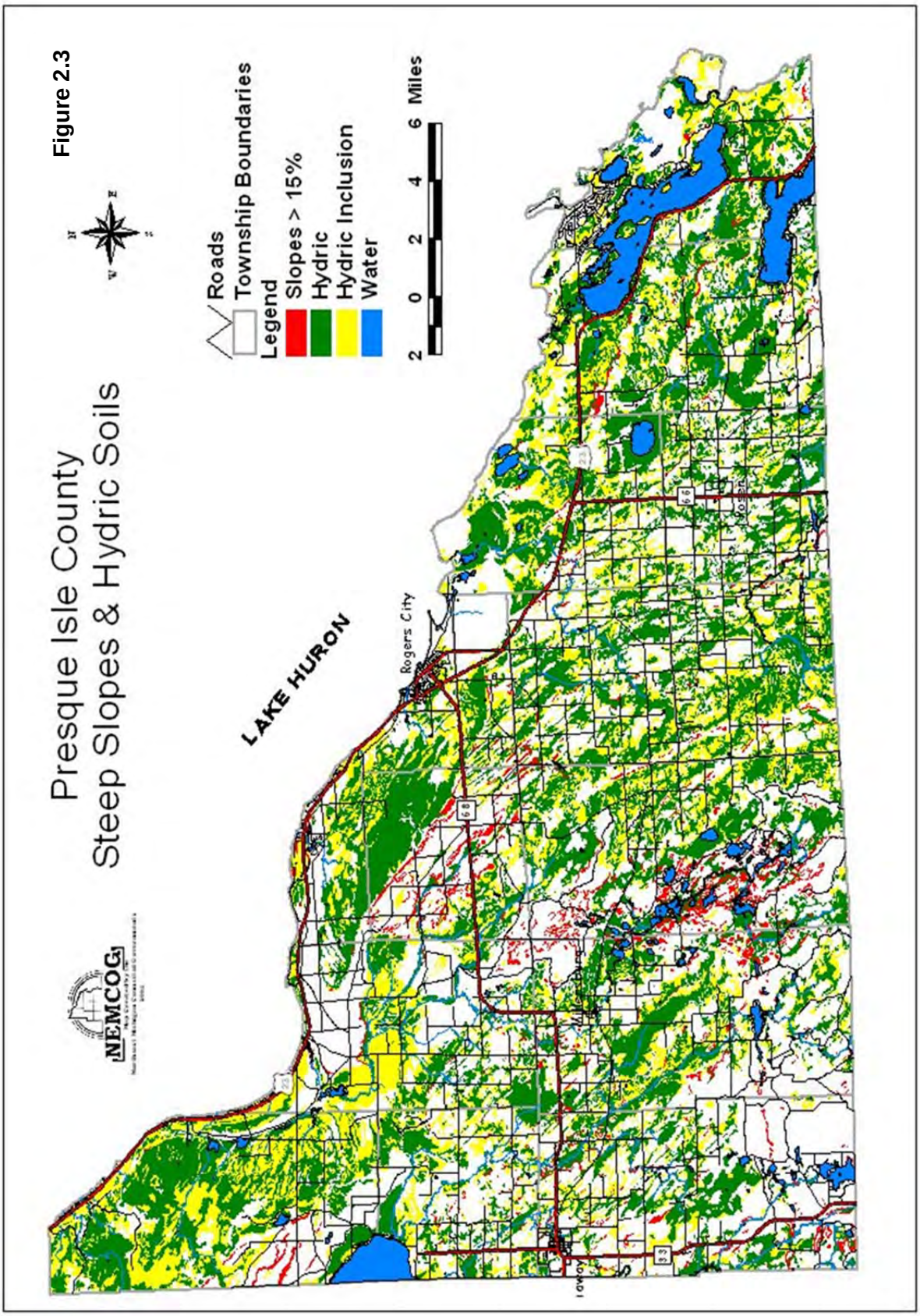


Figure 2.3
Presque Isle County
Steep Slopes & Hydric Soils
NEMCOG
Legend
Roads
Township Boundaries
Slopes > 15%
Hydric
Hydric Inclusion
Water
2 0 2 4 6 Miles
LAKE HURON
Rogers City
68
33

According to information presented in the Presque Isle County Soil Survey there are limited areas with slopes 18 percent and greater. The hilly and steeply sloped areas were created during the last glacial period and are associated with glacial landforms such as moraines, drumlins, eskers and beach escarpments. Steeply sloped areas are concentrated in Southwest Bismarck Township in the headwaters of the Ocqueoc River and the chain of lakes area (Lake Nettie, Lake Emma and Lake May), southwest Allis Township near Canada Creek, and associated moraines and post glacial beach escarpments in Moltke Township.

Prime Farmland

Farming is important to the local economy and is part of the lifestyle of many long-term residents of the County. The presence of farmland is also an integral part of the rural landscape. While the amount of land being farmed has been decreasing each decade, generally the land is converting to less intensive use of open lands and not being converted to subdivisions and commercial uses. **Figure 2.4** shows the prime farmland soils in the County.

Water Resources

Groundwater

All of the drinking water in Presque Isle County, whether municipal or individual private wells, is derived from groundwater in subsurface aquifers. *Groundwater* is water beneath the earth's surface that fills openings *(pore spaces)* in sand or gravel or in fractures of sand, gravel, or rock. It begins as rain or snow and passes through the soil and bedrock. An *Aquifer* is an underground layer of rock, sand, or gravel containing enough groundwater to supply a well. Groundwater is generally available in adequate quantities throughout Presque Isle County. Water wells are developed in glacial deposits and the underlying bedrock. Since the bedrock is close to the surface in many areas, most water wells are developed in limestone bedrock. Overall, Presque Isle County has good water quality. In general the County's groundwater is quite hard containing high concentrations of calcium and magnesium. On average, concentrations range from 250-700 mg/l. Nitrate concentrations in the range of less than 2 mg/l are common. In localized areas the levels can be much higher and are attributed to septic systems, fertilizers, manure and septage spreading. Fluoride is fairly common in wells in Presque Isle County with levels averaging around 1 ppm. Some of the highest levels in the State have occurred in Presque Isle County. Low levels are beneficial in preventing tooth decay, however, high levels may cause mottling of teeth.

Given the karst geology and sandy soils that are prevalent throughout the County, groundwater in Presque Isle County is a resource at risk. The Presque Isle Soil and Water Conservation District, in cooperation with a number of agencies, has developed the Northeast Michigan Karst Aquifer Protection Plan. The primary objective of the plan is to protect the area's drinking water by correcting the sources of pollution. A secondary objective is to increase awareness of the connection between different land use pollutants and drinking water in karst areas.

The Karst Aquifer Protection Plan covers Presque Isle County and parts of Alpena County. **Figure 2.5** shows karst sensitive areas within the County. According to the plan, "much of the project area is characterized by karst. Karst is defined as a type of topography that is formed over limestone, dolomite, or gypsum by dissolving or solution; and is characterized by sinkholes, caves and underground drainage through fractures in bedrock. Karst waters are just as susceptible to contamination as surface waters because much of the water moves through open channelways, resulting in extremely high aquifer recharge rates. Consequently, the shallow

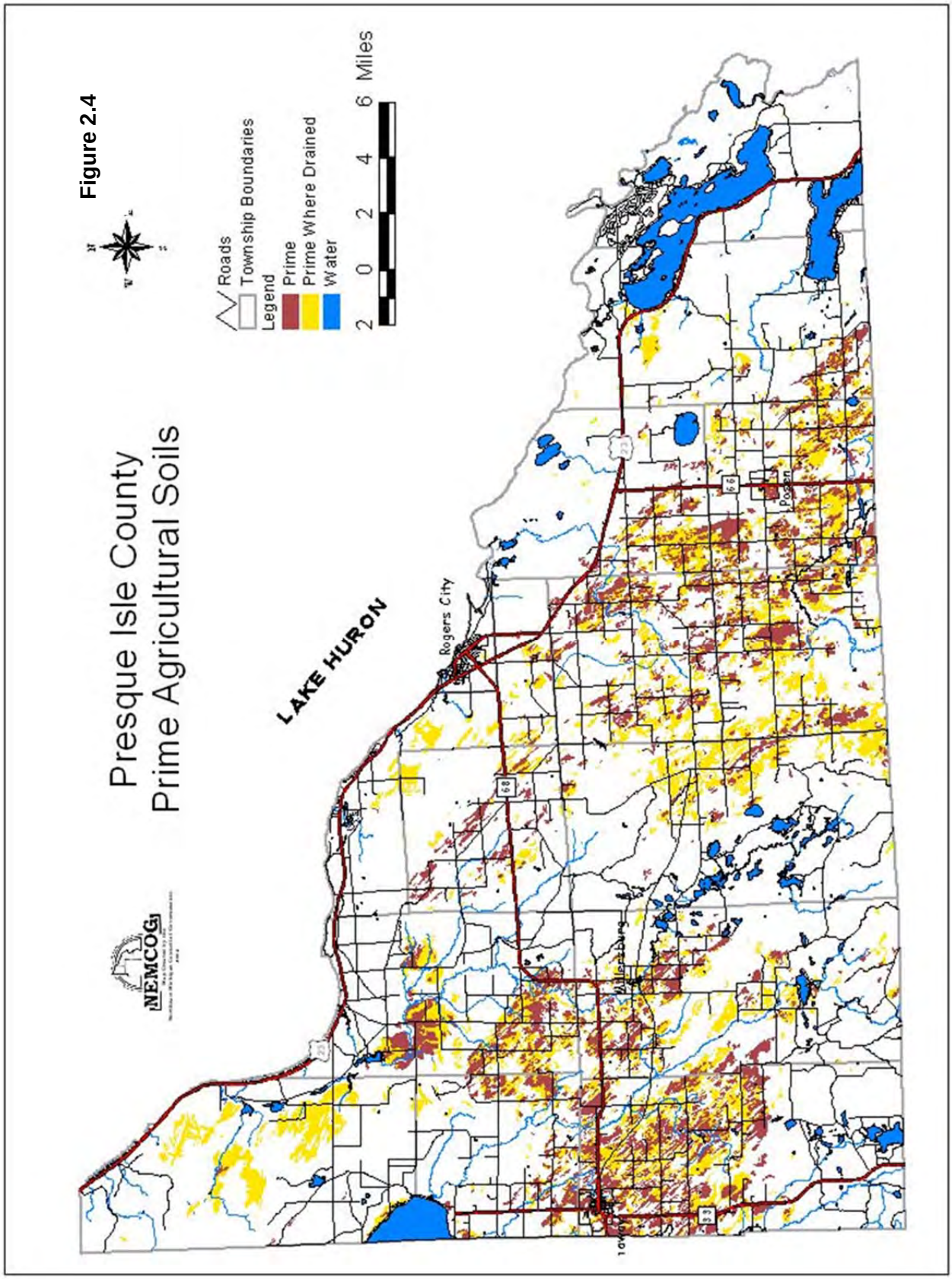

Presque Isle County
Prime Agricultural Soils
LAKE HURON
Rogers City
Posen
Legend
Roads
Township Boundaries
Prime
Prime Where Drained
Water
2 0 2 4 6 Miles
NEMCOG

Figure 2.4

aquifers of the project area are extremely vulnerable to contamination from surface and subsurface sources."

According to the study, "District Health Department #4 has documented 490 cases where domestic water supplies have been adversely affected due to direct migration of pathogens (432), nitrates (54), hydrocarbons (2), sediment (2) from surface sources into aquifers through improper wells and karst features. In addition, although the cost of testing creates a lack of data, professional judgment is that pesticides, heavy metals and salts also have the potential to contaminate area aquifers. Prioritized pollutants are as follows: pathogens, nitrates, sediment, pesticides, hydrocarbons, salts, and heavy metals." The study further states, "There are four known sources of pollutants. These are agriculture including barnyards, feedlots, pastures, and croplands; residential including septic systems and abandoned wells; illicit dumps; and road corridors".

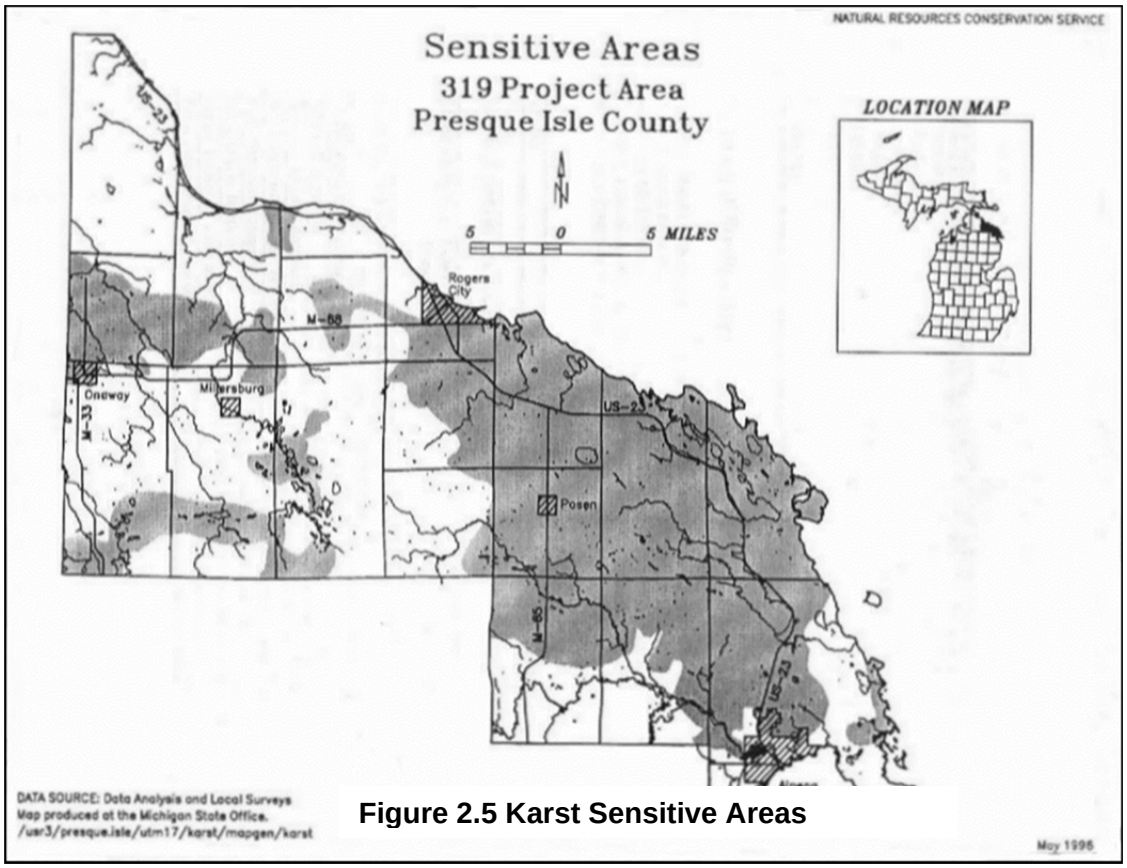


Figure 2.5 Karst Sensitive Areas

Surface Water

Numerous lakes, streams and swamps are found throughout Presque Isle County. In addition to these larger bodies of water, there are a great number of small ponds, kettle holes and marshes. These smaller bodies of water are characterized by moderate seasonal water level fluctuations and various stages of vegetation encroachment. Streams interconnect many of the lakes and smaller bodies of water.

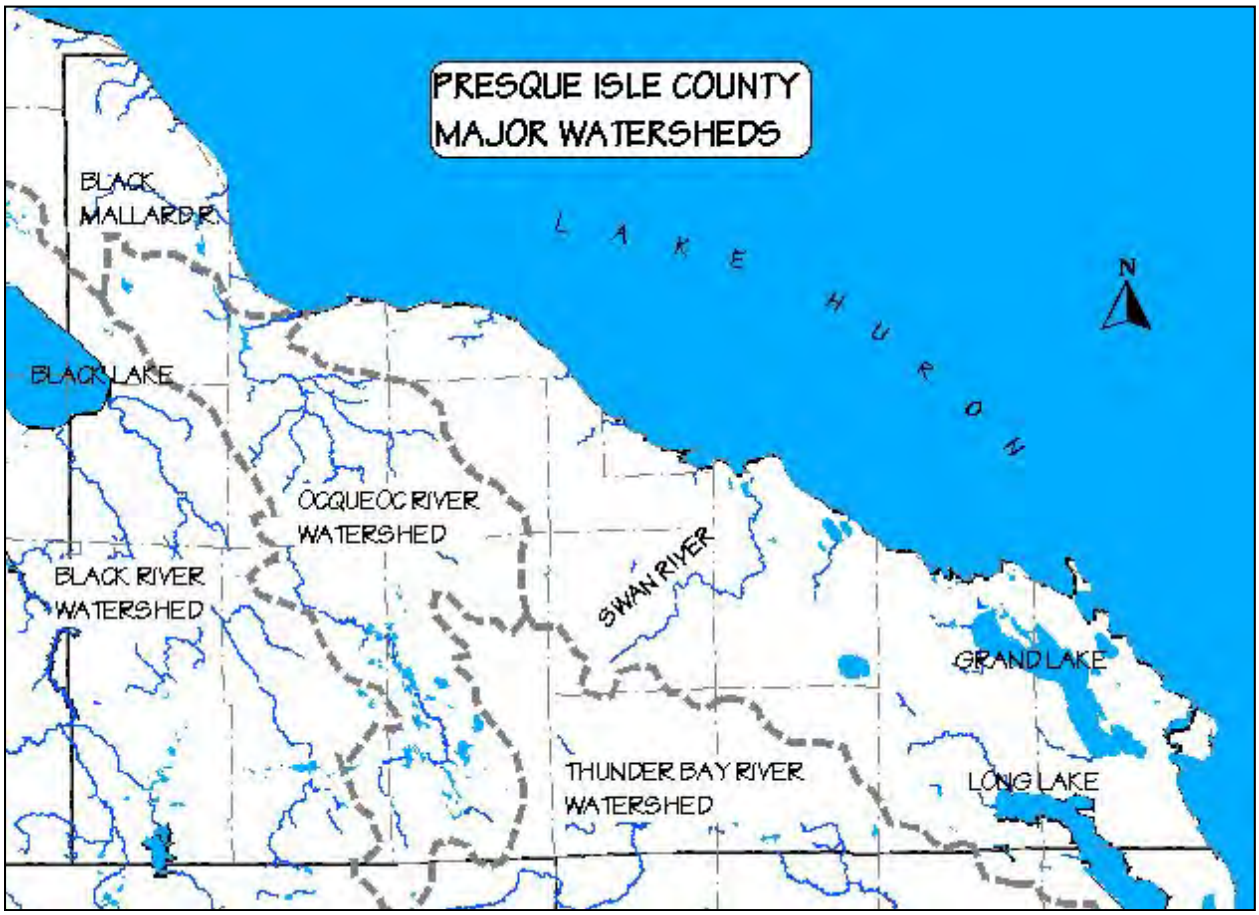
According to the USDA Soil Survey, Presque Isle County has 89 inland lakes, 13 of which are 100 acres or larger. Black Lake, Grand Lake and Long Lake are all over 2000 acres in size. Other larger lakes include Lake Augusta, Lake Esau, Big Trout Lake, Lake Nettie and Tomahawk Creek

Flooding, each with surface areas of 250 acres or more. The soil survey shows 16,376 acres of surface water in the County.

There are three major watersheds in the County which are all part of the Lake Huron drainage basin. The Black River/Black Lake watershed in the western portion includes the Upper Black River, Canada Creek, Tomahawk Creek, Stony Creek and Rainy River. This surface water eventually empties into Lake Huron at the City of Cheboygan. The Ocqueoc River watershed drains the west central parts of the County and includes the chain of lakes area (Lake Nettie, Lake Emma and Lake May). The Thunder Bay River Watershed extends into the south central part of the County. The North Branch of the Thunder Bay River eventually empties into Lake Huron at the City of Presque Isle. There are numerous smaller coastal watersheds such as the Black Mallard River, Trout River, Swan River, Little Trout River, Grand Lake and Long Lake Watersheds (**Figure 2.6**).

Of course, the largest surface water resource in the county is Lake Huron. The Great Lakes are the largest system of fresh, surface water on Earth, containing roughly 18 percent of the world supply. Only the polar ice caps contain more fresh water. Lake Huron is the second largest of the five Great Lakes in surface area (23,000 square miles). However, due to its many islands and inlets, it has the greatest length of shoreline at 3,827 miles, over 1,000 miles more than Lake Superior, which is the largest in surface area.

Figure 2.6 Presque Isle County Watersheds



Fish and Wildlife Resources

The predominance of forested land and surface water makes Presque Isle County the home to many species of fish and wildlife. With over 300 miles of fishing streams and creeks, 89 inland lakes and Lake Huron, the County has an abundance and variety of fish habitat. Brook, rainbow, and brown trout are established singly or in combination in streams. Lakes offer warm water fisheries such as walleye, northern pike, largemouth bass, smallmouth bass and panfish. Lake Huron is an excellent salmon and lake trout fishery. The annual Salmon Tournament in Rogers City is a testament to the high quality fishery.

Deer, rabbit, grouse and woodcock are abundant in the County. Bear, coyote, bobcat, elk and turkey have small to moderate populations that are growing. Wildlife is a resource that brings in hunters and tourists. October and November bring thousands of hunters to the County for small game hunting, bear and bow season (deer), peaking sharply in mid-November with the opening day of deer (rifle) season. Michigan's elk herd was formerly centered in western Otsego County, but increased development in that county caused the center of the herd's range to move east into the southwest of Presque Isle County. This is an area of large tracts of state and private club lands, few roads, and little permanent population.

Wetlands and Woodlands

Wetlands

Wetlands are often referred to as marshes, swamps or bogs. The US Army Corps of Engineers defines wetlands as “those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Residents of Michigan are becoming more aware of the value of wetlands. Beyond their aesthetic value, wetlands improve water quality of lakes and streams by filtering polluting nutrients, organic chemicals and toxic heavy metals. Wetlands are closely related to high groundwater tables and serve to discharge or recharge aquifers. Additionally, wetlands support wildlife, and wetland vegetation protects shorelines from erosion.

There are several sources that depict the presence of wetlands in Presque Isle County. These include the MIRIS Land Cover Inventory, National Wetlands Inventory and Presque Isle County Soil Survey. Each source was developed independently with different criteria and therefore depicts the location and types of wetlands somewhat differently. The MIRIS Land Cover Inventory found forested wetlands to be the dominant wetland type in Presque Isle County. Wetland forest species include lowland conifers such as northern white cedar, black spruce and eastern tamarack and lowland hardwoods such as black ash, elm, balsam poplar, aspen and red maple. For reference purposes, wetland areas are mapped on the existing land use map in Chapter 5 Lowland brush (tag alder, dogwood, and willow) was the second most prevalent wetlands type.

National Wetlands Inventory (NWI) maps were compiled by the US Fish and Wildlife Service using color infrared aerial photography and ancillary data. This inventory classified more areas as wetlands than did the MIRIS land cover inventory. Still the NWI project found forested wetlands to be the most prevalent wetland type. As shown in the section on soils, the Presque Isle County Soil Survey maps hydric soils and soils with hydric inclusions. These soils typically support wetland vegetation. See **Figure 2.7**.

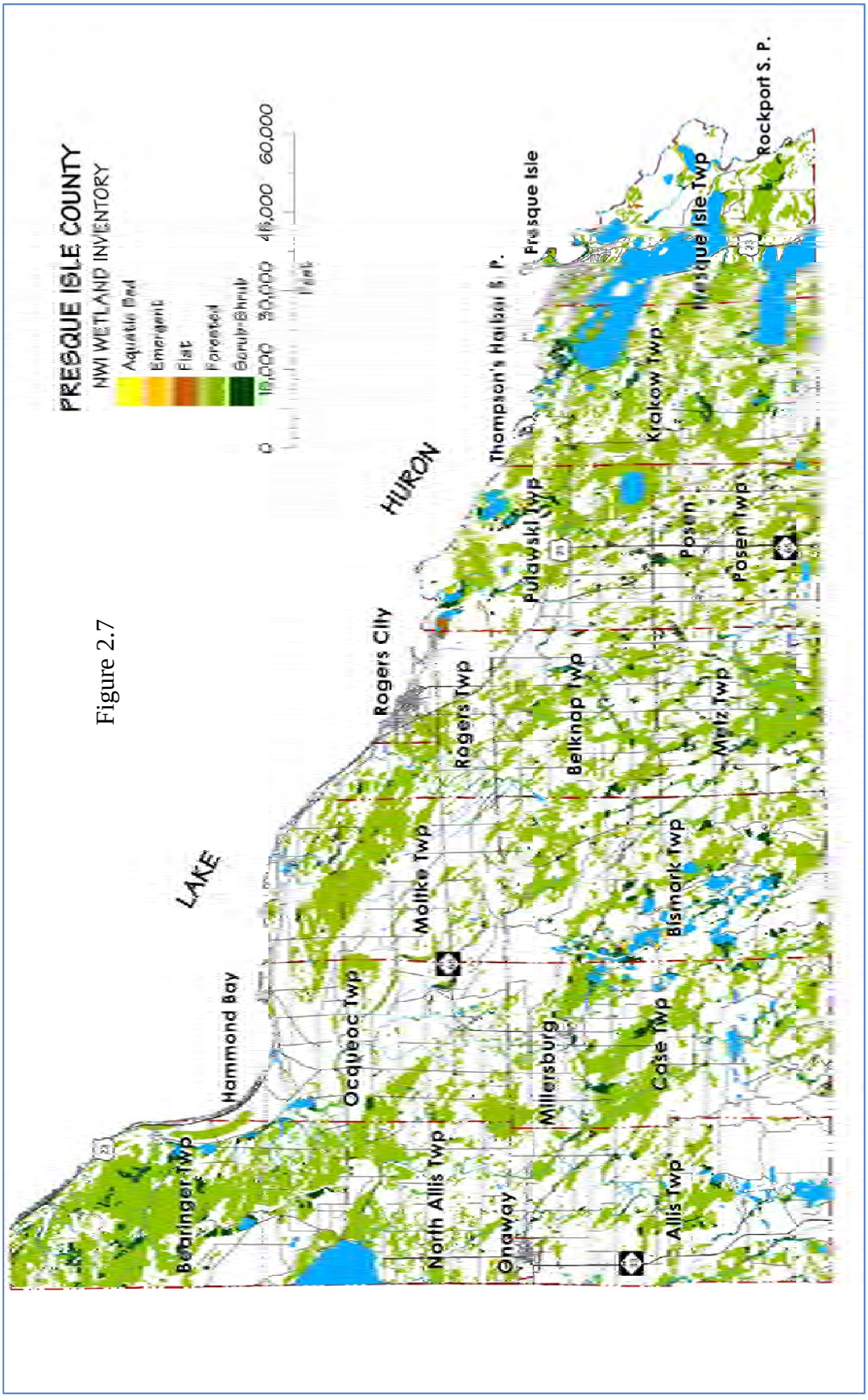

PRESQUE ISLE COUNTY
NWI WETLAND INVENTORY
Aquatic Bed
Emergent
Flat
Forested
Scrub-Shrub
0
15,000
30,000
45,000
60,000
Feet
LAKE
HURON
Hammond Bay
Rogers City
Thompson's Harbor S. P.
Presque Isle
Rockport S. P.
Presque Isle Twp
Krakow Twp
Posen
Posen Twp
Pulawski Twp
Belknap Twp
Metz Twp
Bismark Twp
Case Twp
Allis Twp
Millersburg
Ongway
North Allis Twp
Moltke Twp
Rogers Twp
Ocqueoc Twp
Bearinger Twp

Figure 2.7

A COMPARISON OF SURVEYS

Michigan Resource Information System (MIRIS)

Forested Wetlands	87,071 acres
Shrub-Scrub Wetlands	10,335 acres
Emergent-Aquatic Wetlands	1,828 acres

National Wetlands Inventory Maps (NWI)

Forested Wetlands	124,462 acres
Shrub-Scrub Wetlands	14,790 acres
Emergent-Aquatic Wetlands	9,879 acres

Presque Isle County Soil Survey

Hydric Soils	137,535 acres
Soils with Hydric Inclusions	82,152 acres

An exercise that would further define the probability of wetlands at a given location would be to overlay the three maps generated from the above sources. If a site is classified as a wetland on all three maps, the likelihood of wetlands being present is very high. It is important to note all of these sources are appropriate for general planning purposes. Any development should have a site-specific field survey to determine the presence and location of wetlands that may be impacted.

Woodlands

In addition to the scenic characteristics of woodlands, forested areas provide habitat for wildlife, protect the soil from erosion and acts as a buffer from noise on heavily traveled highways. State forestland encompasses approximately 24 percent of the total land area in the County. In addition, privately owned forestlands can be found throughout the County. By far the most dominant forest type is aspen/birch. The next most common forest types are lowland conifers (cedar, tamarack and spruce) and lowland hardwoods (black ash, slippery elm, balsam poplar, aspen and red maple). Other forest types include pine (red, jack and white), oak (red and white) and northern hardwoods (sugar maple, American beech and basswood). **Figure 2.8** depicts the forest types according to the MIRIS Existing Land Cover/Use Data.

Pre-settlement Vegetation

The Michigan Department of Natural Resources has compiled pre-settlement vegetation maps of counties in Michigan. The maps were generated from information contained in the first government land survey notes in the 1800's along with information such as current vegetation, land forms and soils. A review of the pre-settlement vegetation map (**Figure 2.9**) of Presque Isle County shows extensive areas were covered with beech-sugar maple-hemlock forests and lowland forests types of mixed conifer swamps, cedar swamps, and mixed conifer swamps. To a lesser extent white pine-red pine forests and jack pine-red pine forests were present. Two major events have resulted in major conversions and loss of these pre-settlement forest types. Logging and subsequent wildfires 100 years ago resulted in the shifting of forests from pines and mixed forest swamps to aspen-birch forests. In addition, early settlers sought out "better soils" to establish their farmsteads. Since northern hardwood forests (sugar maple-beech) were the dominate forest type on soils most suitable for agricultural purposes, such as sandy loam, land clearing for farming resulted in a significant reduction in the amount of acres covered by this forest type.

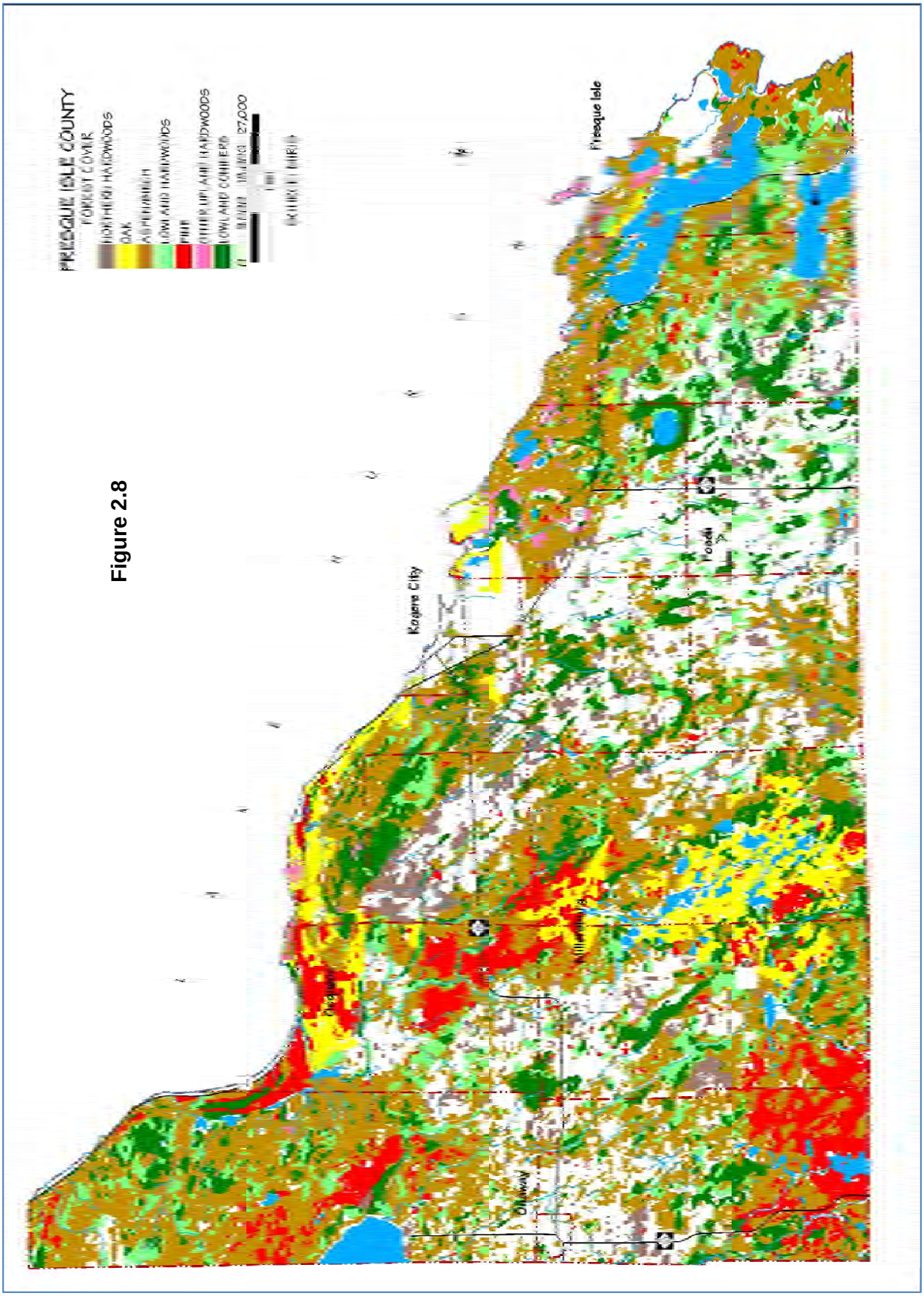

PRESQUE ISLE COUNTY
FOREST COVER
NORTHERN HARDWOODS
OAK
ASPEN/BIRCH
LOWLAND HARDWOODS
PINE
OTHER UPLAND HARDWOODS
LOWLAND CONIFER
Presque Isle
Rogers City
Onaway

Figure 2.8

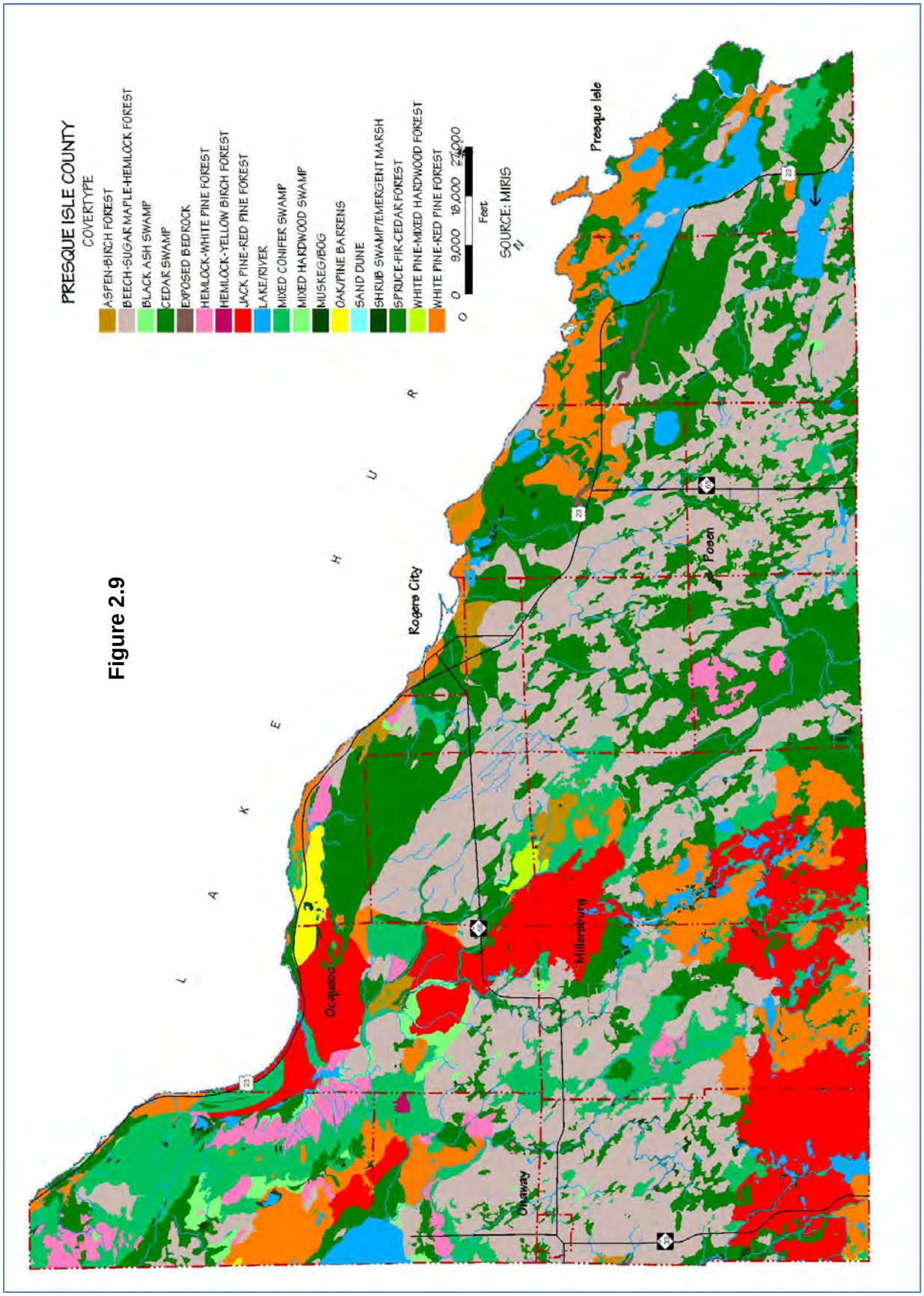

PRESQUE ISLE COUNTY
COVERTYPE
ASPEN-BIRCH FOREST
BEECH-SUGAR MAPLE-HEMLOCK FOREST
BLACK ASH SWAMP
CEDAR SWAMP
EXPOSED BEDROCK
HEMLOCK-WHITE PINE FOREST
HEMLOCK-YELLOW BIRCH FOREST
JACK PINE-RED PINE FOREST
LAKE/RIVER
MIXED CONIFER SWAMP
MIXED HARDWOOD SWAMP
MUSKEG/BOG
OAK/PINE BARRENS
SAND DUNE
SHRUB SWAMP/EMERGENT MARSH
SPRUCE-FIR-CEDAR FOREST
WHITE PINE-MIXED HARDWOOD FOREST
WHITE PINE-RED PINE FOREST
0 9,000 18,000 27,000
Feet
SOURCE: MIRIS
N
L A K E H U R O N
Presque Isle
Rogers City
Posen
Millersburg
Onaway
Ocqueoc
23

Figure 2.9

Sites of Environmental Contamination

The Michigan Environmental Response Act (Part 201 of PA 451 of 1994, as amended) provides for the identification, evaluation and risk assessment of sites of environmental contamination in the State. The Environmental Response Division (ERD) is charged with administering this law. A site of environmental contamination, as identified by ERD, is "a location at which contamination of soil, ground water, surface water, air or other environmental resource is confirmed, or where there is potential for contamination of resources due to site conditions, site use or management practices. A search of the Department of Environmental Quality's web site database found nine sites of environmental contamination in Presque Isle County.

Site ID: 71000008 **Site Name:** Radio Tavern **Site Address:** 5538 M 68 **City:** Rogers City **Zip Code:** 49779 **County:** Presque Isle **Source:** Gasoline Service Station **Pollutant(s):** Benzene; Ethylbenzene; Toluene; Xylenes **Score:** 35 out of 48 **Score Date:** 7/31/2006 12:50:43 PM **Township:** 35N **Range:**04E**Section:**23 **Quarter: Quarter/Quarter:** **Status:** See Leaking Underground Storage Tank Site Database	**Site ID:** 71000046 **Site Name:** Posen - Vincent St. Res. Well **Site Address:** 7034 Vincent Street **City:** Posen **Zip Code:** 49776 **County:** Presque Isle **Source:** Gasoline Service Station **Pollutant(s):** Benzene **Score:** 23 out of 48 **Score Date:** 12/30/2009 3:14:28 PM **Township:** 33N **Range:**6E **Section:**10 **Quarter: Quarter/Quarter:** **Status:** See Leaking Underground Storage Tank Site Database
Site ID: 71000049 **Site Name:** Kaszubowski Farms (Former) **Site Address:** 14821 Polaski Rd **City:** Posen **Zip Code:** 49776 **County:** Presque Isle **Source:** Farm Machinery &Equipment **Pollutant(s):** 1,3,5 TMB **Score:** 16 out of 48 **Score Date:** 6/30/2004 3:58:00 PM **Township:** 33N **Range:**06E**Section:**36 **Quarter: Quarter/Quarter:** **Status:** Inactive - no actions taken to address contamination	**Site ID:** 71000050 **Site Name:** West Cedar Street Dump **Site Address:** 1415 West Cedar Street **City:** Rogers City **Zip Code:** 49779 **County:** Presque Isle **Source:** Refuse Systems **Pollutant(s):** Hg; Solid wastes **Score:** 18 out of 48 **Score Date:** 6/30/2004 4:16:01 PM **Township:** 35N **Range:**05E**Section:**21 **Quarter: Quarter/Quarter:** **Status:** Inactive - no actions taken to address contamination
Site ID: 71000051 **Site Name:** Welsh AST **Site Address:** 14005 &14007 Mar Ral Rd. **City:** Alpena **Zip Code:** 49707 **County:** Presque Isle **Source:** Private Households **Pollutant(s):** 1,2,4 TMB; 1,3,5 TMB; Benzene; Ethylbenzene; MTBE; Naphthalene; Toluene; Xylenes **Score:** 31 out of 48	**Site ID:** 71000052 **Site Name:** Rogers City DPW Garage (former) **Site Address:** 1221 Riverview Property **City:** Rogers City **Zip Code:** 49779 **County:** Presque Isle **Source:** Road Commission **Pollutant(s):** Al; Sb; Cl; Co; CN; Fe; Mg; Mn; Methylene chloride; Na; Tl; Hg **Score:** 39 out of 48 **Score Date:** 12/20/2006 11:00:25 AM

Score Date: 9/28/2004 2:54:32 PM **Township:** 33N **Range:**08E**Section:**31 **Quarter: Quarter/Quarter:** **Status:** Interim Response in progress	**Township:** 35N **Range:**05E**Section:**16 **Quarter: Quarter/Quarter:** **Status:** Interim Response conducted - No further activities anticipated
Site ID: 71000053 **Site Name:** Storm's Icehouse (former) **Site Address:** 751 Linden Street **City:** Rogers City **Zip Code:** 49779 **County:** Presque Isle **Source:** Lumber &Wood Products **Pollutant(s):** Al; Co; Fe; Mg; Mn; Na **Score:** 39 out of 48 **Score Date:** 12/20/2006 11:00:48 AM **Township:** 35N **Range:**05E**Section:**16 **Quarter: Quarter/Quarter:** **Status:** Interim Response conducted - No further activities anticipated	**Site ID:** 71000054 **Site Name:** Sawmill (former) **Site Address:** 780 Pinewood Ave. **City:** Rogers City **Zip Code:** 49779 **County:** Presque Isle **Source:** Lumber &Wood Products **Pollutant(s):** Al; Co; Fe; Mg; Mn; Xylenes **Score:** 39 out of 48 **Score Date:** 12/20/2006 11:02:44 AM **Township:** 35N **Range:**05E**Section:**16 **Quarter: Quarter/Quarter:** **Status:** Interim Response conducted - No further activities anticipated
Site ID: 71000055 **Site Name:** Ken's Oil (former) **Site Address:** S.of Lakeview St. btw. Linden &State St **City:** Rogers City **Zip Code:** 49779 **County:** Presque Isle **Source:** Petroleum Bulk Stations &Term **Pollutant(s):** 1,2,4 TMB; Al; As; Cd; Co; Fe; Mg; Mn; Na; Xylenes **Score:** 39 out of 48 **Score Date:** 12/20/2006 11:03:06 AM **Township:** 35N **Range:**05E**Section:**16 **Quarter: Quarter/Quarter:** **Status:** Interim Response conducted - No further activities anticipated	**Site ID:** 71000056 **Site Name:** Kiwanis Park **Site Address:** Birchwood &Lakeview St. **City:** Rogers City **Zip Code:** 49779 **County:** Presque Isle **Source:** Unknown **Pollutant(s):** Al; Co; CN; Fe; Mg; Mn; V **Score:** 39 out of 48 **Score Date:** 12/20/2006 11:03:25 AM **Township:** 35N **Range:**05E**Section:**16 **Quarter: Quarter/Quarter:** **Status:** Interim Response conducted - No further activities anticipated

Surface Water Discharge Permits

Table 4.3 shows National Pollutant Discharge Elimination System (NPDES) permits issued in Presque Isle County. Anyone discharging, or proposing to discharge, waste or wastewater into the surface waters of the State is required to obtain a NPDES permit. The NPDES program is intended to control direct discharge into the surface waters of the State by imposing effluent limits and other conditions necessary to meet State and federal requirements. The NPDES program regulates pollutants discharged directly into waterways from wastewater sources.

Table **2. XX**
NPDES Permits in Presque Isle County

Name	Address	City	Permit #	Exp. Date
Cadillac Products Inc-Rogers	4858 Williams Road	Rogers City	MIS210545	4/1/2012
DNR-Recreation Div-P H Hoeft	5001 US 23 North	Rogers City	GW1010021	2/1/2014
Elk Run Landfill-Republic	20667 Five Mile Highway	Onaway	MIS210181	4/1/2012
Lafarge N America-Presque Isle	11351 East Grand Lake Road	Presque Isle	MI0003468	10/1/2011
MDNR-Swan River Salmon Egg	Michigan Limestone Property	Gaylord	GW1110062	12/1/2012
MDOT-M-68	M-68	Onaway	MIR111505	8/13/2015
MDOT-US-23-Presque Isle	From Hoeft State Park to Forty Mile Point Lighthouse	Rogers City	MIR110728	5/20/2013
N L Kowalski Forest Products	5658 US 23 South	Rogers City	MIS210575	4/1/2012
O-N Minerals-Rogers City	1035 Calcite Road	Rogers City	MI0004111	10/1/2011
Onaway WWTP	21132 Spruce Street	Onaway	MI0055522	10/1/2011
Presque Isle County Rd Comm.	countywide roads	Rogers City	GW1510021	4/1/2015
Presque Isle Electric GWCU	19831 M-68 Highway	Onaway	MIG080916	4/1/2015
Rogers City WWTP	450 North First Street	Rogers City	MI0057813	10/1/2010
Specification Stone-Onaway	3242 Main Street	Onaway	MIS210999	4/1/2012
Standard Industrial Corp	14821 Polaski Road	Posen	MIS210159	4/1/2012
USDI-Hammond Bay Biological St	11188 Ray Road	Millersburg	MI0005100	10/1/2011

Source: Michigan Department of Environmental Quality