Chapter II

RESOURCE ASSESSMENT

INTRODUCTION

The conservation and wise use of agricultural and natural resources are important factors influencing the growth and development potential of the County. Aside from the County's physical location, the natural resource base is one of the assets that make the County a desirable community in which to reside and work. The natural resources not only provide recreational and aesthetic value, but also provide economic value. Protecting this resource base is also important to maintain biological diversity, which is vulnerable to the misuse that is associated with inappropriate development. Accordingly, future development should be guided to be consistent with the ability of the natural resource base to support various forms of urban and rural development without the deterioration of the existing natural resources in the County.

The natural resource base in Racine County is susceptible to permanent damage through inappropriate land use. Sufficient understanding and recognition of the characteristics and various elements of the natural resource base is essential in order to prevent excessive costs in terms of both monetary expenditures and environmental degradation. A sound land and water resource management program must recognize that natural resources are limited. Racine County and the local municipalities within the County have worked together to develop the Multi-Jurisdictional Comprehensive Plan for Racine County: 2035, that acknowledges the limited resource base, provides for development consistent with the limited resource base, and educates the public on the value of natural resources, and the means to protect those resources.

This chapter presents an inventory and analysis of those natural resource base elements of Racine County which are most directly related to land and water resources planning. Included is descriptive information pertaining to physiography, topography, soils, groundwater resources, surface water resources, wetlands, woodlands, wildlife habitat, natural areas, environmental corridors, and major parks and open space sites. The chapter also briefly discusses the climate in the County as it relates to the natural resource uses and protection measures.

SOILS AND AGRICULTURAL RESOURCES

Soil Characteristics

The USDA Natural Resources Conservation Service has classified soils into capability groupings that indicate their general suitability for farming. The groupings are based upon composition and limitations of the soils, risk of damage when used, and the way they respond to treatment. Under the NRCS system, there are eight capability classes ranging from Class I, which have few limitations, to Class VIII, which have severe limitations due to soils and land formations that are rough, shallow, or otherwise limited in that they do not produce economically worthwhile yields of crops, forage, or wood products (see Map 1, page 89). In general, Class I soils are more arable and suitable for cropland; Class II soils have some limitations that reduce the choice of plants that can be grown or require moderate conservation practices to reduce the risk of damage when used; Class III and IV soils have severe limitations that reduce the choice of plant, require special conservation practices, or both. The soils in the remaining classes have progressively greater natural limitations not suitable for cropland, but can be used for pasture, grazing, woodland, wildlife, recreation, and esthetic purposes. Generally, lands with Class I and II soils are considered "National Prime Farmlands" and lands with Class III soils are considered "Farmlands of Statewide Significance."

The location and amount of Class I, II, and III soils were critical in identifying farmland preservation areas under the Racine County Farmland Preservation Plan, adopted by the County in 1982 and updated in 2013. Racine County areas with Class I, II, and III soils are shown on Map 1. Racine County mainly consists of Class II soils which are well suited for agricultural use.

Soil Suitability for Agricultural Use

For agricultural purposes, the U.S. Natural Resources Conservation Service categorizes prime agricultural soils to have few manageable limitations for successful crop production. Also illustrated are soils within the County that are important for agriculture, although, these soils are somewhat more challenging to manage properly. The remaining soils in the County are either unclassified or unsuitable for agricultural use primarily because of the high potential for erosion, steepness of land slope, or drainage and wetness problems.

Table 1

SOILS SLOPE CLASSIFICATIONS WITHIN RACINE COUNTY

Slope Classes	Acres	Percent of Land Area
0 to 2 Percent	85,798	39
2 to 6 Percent	100,886	46
6 to 12 Percent[a]	15,957	8
12 to 20 Percent[a]	4,409	2
Greater than 20 Percent[a]	3,283	2
Disturbed Soils	2,380	1
Water	5,223	2
Total	217,936	100

[a]Slope classes that are greater than 6 percent, are considered highly erodible lands according to the U.S.D.A. Natural Resources Conservation Service, provided those lands exceed one-third of the farm field.

Currently, there are approximately 290 square miles of prime and valuable agricultural soils, also referred to as Class I and Class II soils, respectively (Table 1) in the NRCS soil survey report. In addition, there are about 25 square miles of other, or Class III, soils that are valuable to agriculture but require more intensive management. About 15 square miles are covered by soils not recommended for agricultural purposes due to steepness, shallowness, or wetness problems. These soils are considered Class IV through Class VIII soils (Table 1).

SOILS

Soil properties exert a strong influence on how land is used, especially where land use is continually changing and evolving, as it is in Racine County. Soils directly affect the types of land use that can take place, whether those uses are agricultural, recreational, commercial, or residential. Any comprehensive land and water resource management plan needs to evaluate the ways that soils are being used and should best be used and managed over time.

A detailed, areawide soil survey was conducted by the U.S.D.A. Natural Resources Conservation Service (NRCS) (formerly the U.S. Soil Conservation Service) at the request of the Southeastern Wisconsin Regional Planning Commission. Soil information was gathered at the field level and the data were compiled and published as SEWRPC Planning Report No. 8,[1] and as a USDA-Soil Conservation Service soil survey report and maps for Kenosha and Racine Counties.[2] Those data are routinely used for land use, agricultural, and development planning. The information contained in the soil survey also contributes to the proper construction of commercial and residential developments, as well as the construction of roads, highways, airports, and railroads.

General Soil Associations

There are nine soil associations in Racine County as shown on Map 2. Soil associations refer to a group of soils that are commonly found together on different, but related parts of the landscape. Soils are typically grouped into an association by drainage patterns or often by surface horizon thickness. The general soil associations can be used for comparing suitability of relatively large areas for various land uses. However, for specific applications,

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[1]*SEWRPC Planning Report No. 8*, Soils of Southeastern Wisconsin*, June 1966.*

[2]*U.S. Department of Agriculture, Soil Conservation Service,* Soil Survey of Kenosha and Racine Counties, Wisconsin*, December 1970.*

the soil survey information should be relied upon, as well as onsite field data for confirmation purposes. Soils are very diverse and non-uniform, therefore making it necessary to verify soils on the landscape. A brief description of each of the nine soil associations in Racine County, along with their spatial distribution within the County, is presented on Map 2.

The most erosive soils in Racine County are generally in the Villages of Yorkville and Raymond. These soils are generally clay loam to silty clay loam and on long slopes that are intensively farmed.

Soil Pit at Beck Grain Farms – Town of Waterford
Dr. Jamie Patton, University of Wisconsin, describes soil structure to local farmers during a Field Day

Existing Farmland

The U.S.D.A.'s National Agricultural Statistics Service provided the 2017 Census of Agriculture. The census indicates cropland encompassed about 171.5 square miles or approximately 50 percent of land in Racine County. This figure includes cultivated land, pastures, land used for horticulture or nurseries, and land occupied by farm buildings; it excludes wetland and woodland areas on existing farms.

Farms and Farm Production

Farms and farm production are valuable indicators in determining the economic impact of agricultural operations in Racine County. As part of the Census of Agriculture, farms are defined as operations from which $1,000 or more of agricultural products were sold, or normally would be sold, during the year. Further, a farm includes land owned and operated by the farmer as well as lands rented from others. As reported in the most recent Census of Agriculture, there were 611 farms and 105,968 acres harvested in Racine County in 2017. Table 2 indicates the breakdown of the farm size and acres harvested.

TABLE 2

Farm by Size (in acres)	Number of Farms
1 to 9 acres	138
10 to 49 acres	178
50 to 179 acres	154
180 to 499 acres	79
500 to 999 acres	39
1000 acres or more	23

2021 Agricultural and Non-Agricultural Land Use (See Map 16)

Agricultural Land Use	Acres		Non-Agricultural Land Use	Acres
Soybeans	42,665.70		Deciduous Forest	24,278.80
Corn	34,005.00		Developed/Low Intensity	18,701.60
Grass/Pasture	19,890.80		Developed/Medium Intensity	14,505.50
Winter Wheat	7,931.90		Woody Wetlands	13,410.80
Alfalfa	7,346.80		Developed/Open Space	12,091.80
Other Hay/Non Alfalfa	1,790.30		Developed/High Intensity	5,945.90
Sod/Grass Seed	1,183.60		Herbaceous Wetlands	4,914.90
Cabbage	886.70		Open Water	4,692.10
Sweet Corn	810.60		Barren	1,200.90
Dry Beans	556.20		Mixed Forest	479.00
Greens	242.20		Evergreen Forest	228.20
Pumpkins	35.40		Shrubland	75.80
Oats	16.90		**Total**	**100,525.30**
Fallow/Idle Cropland	11.80			
Rye	7.30			
Dbl Crop Triticale/Corn	7.30			
Sweet Potatoes	4.00			
Dbl Crop WinWht/Soybeans	3.80			
Christmas Trees	3.60			
Sugarbeets	3.30			
Cherries	2.90			
Switchgrass	2.70			
Squash	2.70			
Barley	1.10			
Triticale	0.90			
Buckwheat	0.70			
Misc Vegs & Fruits	0.70			
Onions	0.70			
Apples	0.70			
Carrots	0.70			
Peas	0.40			
Sorghum	0.20			
Mint	0.20			
Potatoes	0.20			
Other Crops	0.20			
Strawberries	0.20			
Dbl Crop WinWht/Corn	0.20			
Total	**117,418.60**			

TOPOGRAPHY AND GEOLOGY

Glaciation has largely determined the topography and geology, as well as the soils of Racine County. Of the four major stages of glaciation, the last and most influential in terms of present physiography and topography was the Wisconsin Stage, which is believed to have ended in this area about 11,000 years ago. Racine County varies from gently rolling glacial plains, or ground moraines, in the eastern half to steeper hills in the western half. Map 5 indicates the slope analysis of Racine County. The ground moraines are typically comprised of dense basal till, which frequently contains a combination of silt and clay. The eastern edge of Racine County also contains the lake terrace, which runs parallel to and contiguous with the shoreline of Lake Michigan. In Racine County, the west side of the Fox River is comprised of sand and gravel outwash deposits. Glacial outwash deposits are common along the major rivers and streams of Racine County. Outwash is alluvial in origin and was deposited by glacial meltwaters. A few places in the County also contain lacustrine deposits, which include the sediments of glacial lakebeds. Land surface elevations range from about 580 feet above sea level on the Lake Michigan shoreline, to 950 feet above sea level in the far western portion of the County as shown on Map 4.

The bedrock formations that underlie the unconsolidated surficial deposits in Racine County primarily consist of Silurian Age dolomite. Eastern Racine County has prominent areas in which the Racine formation, which is one of the five Silurian formations, contains dolomite reef strata that are exposed through natural outcroppings along the Root River, Lake Michigan and old quarries. This reef stratum has a rich diversity of fossil marine organisms. Southwestern Racine County provides good examples of glacial topography extending west into Walworth County. Specifically, kettle and kame glacial formations can be found in this area. The advances of glacial ice sheets resulted in a wide range of glacial deposits over the bedrock. The most substantial glacial deposits, represented as depth to bedrock, are 100 to 300 feet thick, and located in the central portion of the County. Areas where bedrock ranges from zero to less than 100 feet are generally found in the eastern and western portions of the County as shown on Map 6.

Lake Michigan Bluff and Ravine Areas

Shoreline erosion conditions are important considerations in planning for the protection and sound development and redevelopment of lands located along Lake Michigan. These conditions can change over time because they are related to changes in climate, water level, the geometry of the near shore areas, the extent and condition of shore protection measures, the type and extent of vegetation, and the type of land uses in shoreline areas.

Bluff Erosion along Lake Michigan

In recent years, the bluff erosion along the Lake Michigan shoreline has become more severe due to higher lake levels. The current lake level is approximately three feet higher than a decade ago. Federal, State and local governments are continuing to support further shoreline protection methods to minimize bluff erosion impacts to residential homes, businesses and public infrastructure.

Nonmetallic Mineral Resources

Nonmetallic minerals include, but are not limited to, crushed stone (gravel), dimension stone, peat, clay, topsoil, asbestos, beryl, diamond, coal, feldspar, talc, and sand. Nonmetallic mines (quarries) in southeastern Wisconsin provide sand, gravel and crushed limestone or dolomite for road building; peat for gardening or horticulture; and dimension stone for use in buildings, landscaping, and monuments. Nonmetallic minerals are important economic resources that should be taken into careful consideration whenever land is being considered for development. If an adequate supply of stone and sand is desired for the future, wise management of nonmetallic mineral resources and access to them is important. Existing non-metallic mining operations in Racine County are shown on Map 7. Some nonmetallic mines supply limestone, but most are typically sand and gravel operations. Approximately 802 acres are actively being mined or these areas are being used for stockpiles, driveways, wash ponds or other mining activities. In 2020, there were 1985 acres permitted for non-metallic mining use in Racine County.

Soil Suitability for Mineral Extraction

Racine County has a moderately abundant supply of sand and gravel deposits. Potential sand and gravel deposit areas are shown on Map 8. This indicates the potential non-metallic mining resources are available under 130 square miles, or 38 percent of the total land area of the County. These areas are concentrated in the western portion of the County in the outwash areas, particularly west of the Fox River, where the washing action of glacial meltwaters has sorted the sand and gravel into somewhat homogeneous deposits, that are commercially more attractive. Therefore, the most abundant sources of the sand and gravel occur in the Towns of Waterford and Burlington as well as the Village of Rochester. In addition, there are many other small deposits scattered throughout the remainder of the County. The occurrence of such deposits is extremely variable, and onsite investigations are necessary to determine the suitability of any given site for sand and gravel or rock extraction purposes.

Cretex Materials, Inc. – Quarry in the Town of Burlington

WATER RESOURCES

The water resources of Racine County include both surface and subsurface resources. Subsurface water resources, or groundwater, provide much of the water supply within the County. This water resource is contained within the geological strata underlying Racine County, principally comprised of a surficial sand and gravel aquifer and a deeper sandstone aquifer. The former aquifer interacts closely with the surface water resources of the County. The surface waters are comprised of lakes and streams. In addition, given the topography of the County, numerous wetlands form a transitional system between the water resources of the County and the land surface. Together with the land resources of the County, these water resources form an important element of the natural resource base of Racine County.

Groundwater Resources

Groundwater is an important source of water supply in Racine County. Except for the areas east of I-94, which have public water supply systems connected to the City of Racine's Lake Michigan-supplied water system, nearly all of the potable water and a majority of the process water consumed in Racine County was drawn from groundwater sources.[3] As of 2005, about 14 million gallons per day was withdrawn within the County for these various purposes. In addition to consumptive uses, groundwater is an important source of water supplying surface water systems as base flow in streams and as lake inflow.

There are three major aquifers within Racine County and Southeastern Wisconsin, which contain the usable groundwaters of the County. From the ground surface, these aquifers are: 1) the surficial sand and gravel aquifer, 2) the Niagara dolomite aquifer, and 3) the sandstone aquifer. The first two aquifers are often treated as a single aquifer commonly referred to as the "shallow" aquifer due to its proximity and intimate hydraulic interconnection to the land surface. The latter, accordingly, is commonly known as the "deep" aquifer since it underlies the shallow aquifer.

The sand and gravel aquifer consists of unconsolidated sand and gravel deposits in glacial drift and alluvium. These deposits occur over much of the County, either at the land surface or buried beneath less permeable drift such as glacial till. This aquifer interacts extensively with the surface water system of the County.

The Niagara dolomite aquifer in Racine County consists of Silurian Age dolomite, which overlies the Maquoketa shale stratum throughout the entire County. The Maquoketa shale separates the Niagara and sandstone aquifers. The shale layer has very low permeability, which restricts the vertical movement of water and largely confines water within the sandstone aquifer.

The sandstone aquifer includes all sedimentary bedrock below the Maquoketa shale stratum. The bottom of the sandstone aquifer is the surface of the impermeable Precambrian rocks. This aquifer is continuous throughout the County and is a part of a large regional aquifer that is used as a source of water supply for major concentrations of urban development throughout southeastern Wisconsin and northeastern Illinois. This aquifer is relatively unimportant in terms of its influence on the surface water resources of the County since it does not intersect the surface drainage.

The source of most groundwater is precipitation, which infiltrates and recharges the groundwater reservoirs. The amount of infiltrate largely depends on the type of soils that cover the land surface. Where the soils are high in clay content and have a high density, the rate of infiltration and permeability is reduced. Where the soils are predominately composed of glacial outwash—an assortment of stratified sands and gravels—the soils have a higher infiltration rate and much greater permeability. The deep sandstone aquifer is primarily recharged west of the County in western Walworth County and Jefferson County where the confining shale layer is absent.
Groundwater discharge primarily occurs from the pumping of wells.

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[3]*SEWRPC Technical Report No. 37,* Groundwater Resources of Southeastern Wisconsin*, April 2000.*

Two of the greatest concerns of the groundwater supply include contamination and over-usage. The vulnerability of groundwater to contamination is a combination of several factors; however, two of the most important elements are soil and subsurface material characteristics and depth to groundwater levels. Since the eastern half of the County is largely covered by glacial till soils with a high clay content, contamination is not as much of a concern compared to the western part of the County. As illustrated in Map 9, the western half of Racine County contains a large area with a depth of less than 25 feet to groundwater. The shallowness to groundwater in combination with the stratified sand and gravel characteristics of glacial outwash soils, make the Fox River basin the most sensitive to contamination. Over the last century, the sandstone aquifer has seen a drawdown of its water levels. In the latter part of the 1800s and the early part of the 1900s, Racine and Kenosha Counties began to experience a decline in groundwater levels. The water levels in the sandstone aquifer are declining at a rate of up to six feet per year in some areas. Over time, this has led to more wells being drilled, deeper wells, and greater economic costs associated with supplying water to residents and industries in the County.

Surface Water Resources

Surface water resources constitute an extremely important part of the natural resource base in Racine County. Surface waters are a focal point of water-related natural area and recreational activities and provide an attractive setting for properly planned residential development. Surface waters, particularly the few major lakes of greater than 50 acres in the County, also provide substantial economic benefits through expenditures by boaters, fisherman and other recreational users. Additionally, lakeshore properties generally have higher assessed property values, and serve to enhance the tax base of Racine County and its local municipalities. When viewed in the context of open space areas, surface waters greatly enhance the aesthetic and scenic characteristics of the County's natural environment. The surface water resources in Racine County are shown on Map 10.

Surface Drainage

There are two major drainage systems within Racine County, and several minor drainage systems, based upon the direction of surface water flow. Of the major drainage systems, the Root River and its tributaries drains the central and eastern portions of the County to the east, where they ultimately discharge into Lake Michigan and the Laurentian drainage system. The eastern portion of the County also drains to Lake Michigan, via the Pike River system, or direct drainage area tributary to Lake Michigan. The other major drainage system contains the Fox River drainage system, which drains the western portions of the County to the southwest, where the river ultimately discharges into the Mississippi River system. In addition, a small portion of the south-central area of the County comprises the headwaters of the Des Plains River watershed and drains to the Mississippi River drainage basin. These waterways and watershed areas are shown on Map 10.

The subcontinental divide has important implications for the use of Lake Michigan as a source of potable water within the County. In general, under existing international agreements, water from Lake Michigan may be piped to areas west of the divide only if provision is made to route return flows of spent water back to the Lake. The diversion of water from Lake Michigan without provision for such return flows is subject to complex Federal, State, and international legal and administrative restrictions. The subcontinental divide, therefore, places an important constraint upon the planning of public sanitary sewer and water supply facilities within the area, requiring the coordinated development of such facilities.

Subsurface Drainage

Racine County contains many poorly drained soils that require additional man-made drainage systems to become productive farmland. Drain tiling is abundant on much of the cropland east of the Fox River in Racine County. Drain tiles encourage water to saturate deeper in the soil while dispersing water flow from rain events over the period of many days or weeks. This is compared to surface flow which will runoff the surface faster. Overall, lower peak flow rate can reduce flooding impacts and improve water quality due to less surface runoff.

Soil and phosphorus runoff generally occurs in surface water flows. They do not leave through the tiles lines except in situations where tile lines are failing or surface intakes exist in the field. There is a misconception that the over application of nitrogen enters into the tile lines and outputs into the waterways. The ultimate goal of the

farmer is to match the nitrogen (N) application with the crop need at the proper time. This does not completely stop the movement of nitrogen through tiles, but the farmer wants nitrogen to be used by the crop. Although, over application of N, poor timing of N application, or rainfall following N applications can result in N leaching below the root zone and then either into the groundwater or tile lines that intercept groundwater. N application rates above crop needs will result in excess N that can leach or dentrify.

Nutrient management planning, cover crops, side dressing, and utilizing nitrogen injections along planted seed are new improved methods of nitrogen application. Applying less fertilizer and eliminating fall applications will reduce nitrogen leaching into drainage systems. This is the goal of the 590 Nutrient Management Plan.

Lakes

There are a total of 18 named lakes in Racine County, 10 of which are over 50 acres in area. Nine of the lakes are over 100 acres as shown in Table 7. The named lakes cover approximately 3,500 acres, or about 2 percent of land area in the County, and range in area from the four-acre Delmonte Lake to the 1,132-acre Tichigan Lake.

Lake water quality is significantly affected by contaminants delivered to the water systems from surrounding lands. The nature and extent of urban development and agricultural activity on lands draining to lakes and streams can directly impact water quality. Water quality is affected by plant nutrients, such as nitrogen and phosphorus, sediments from the land surface, and various natural and synthetic chemicals, the concentrations of which may be artificially increased as a consequence of agricultural and urban activities.

Human impacts on lakes can cause numerous reasons for concern. Some of the human impacts are stormwater runoff and assistance with aquatic invasive species migration. Stormwater runoff is an area of concern because it can lead to pesticides, fertilizers, bacteria, hydrocarbons (gasoline and oil), and other pollutants to run off into the late causing organisms living in the lake to become sick or die as well as effecting human health and the overall health of the lake negatively.

Another human impact to the lakes are aiding the migration of aquatic invasive species such as zebra and quagga mussels. Invasive zebra and quagga mussels (collectively called dreissenid mussels) are causing significant ecological and economic impacts and the range of these impacts continues to increase as they spread across North America. These mussels affect industrial and municipal infrastructure, recreational water users, and they severely alter aquatic ecosystems. They filter out plankton that native species need for food and they attach to and incapacitate native mussels. It is essential you check and hose off your watercraft after recreational activities to reduce the spread. The trophic status of most of the lakes in Racine County is set forth in Table 2a. Trophic status is an indicator of overall water quality. It is commonly quantified using an index that takes into consideration water clarity, phosphorus and chlorophyll-*a* concentrations, and regional location within Wisconsin. While based upon a trophic continuum, there are essentially three commonly differentiated trophic levels. An oligotrophic lake has few nutrients and is characterized by clear water and low amounts of plant and algal growth. There are no oligotrophic lakes in Racine County. Mesotrophic lakes are characterized by moderate concentrations of nutrients and have somewhat reduced water clarity and increased numbers of aquatic plants. There is usually a healthy fisheries community which includes angling gamefish species. Swimming and boating can be enjoyed without significant restrictions. Given the underlying geological conditions within Racine County, most of the lakes may be expected to be mesotrophic in nature. In contrast, eutrophic lakes are characterized by high nutrient levels, high levels of plant and algal growth, and reduced water clarity. Fisheries in eutrophic lakes are generally dominated by a fewer species, including rough fish or species not generally considered desirable for angling purposes. Further, because of the accumulation of plant residues and the resulting decomposition that occurs, these lakes are often not as desirable for swimming and other water contact sports, due to the occurrence of odors and the presence of muck—the organic sediments created from mats of decaying plants. As set forth in Table 7, seven of the lakes for which data were available were classified as eutrophic, two as mesotrophic, and three lakes as meso-eutrophic, in the regional water quality management plan updated and migration of these aquatic invasive species as well as numerous other aquatic invasive species.

Table 2a

LAKE CHARACTERISTICS WITHIN RACINE COUNTY

Lakes[a]	Lake Surface Area (acres)	Lake Volume (acre-feet)	Maximum Depth (feet)	Mean Depth (feet)	Lake Type[b]	Trophic State Index[c]	Trophic Status
Bohner	135	1,243	30	9	Drainage	49	Mesotrophic
Brock	11	- -	12	4	Drainage	- -	- -
Browns	397	3,135	44	8	Drained	50	Eutrophic
Delmonte	4	- -	6	5	Drainage	- -	- -
Denoon	167	2,940	55	18	Seepage	52	Eutrophic
Eagle	529	3,640	11	6	Drainage	71	Eutrophic
Echo	70	129	11	2	Drainage	63	Eutrophic
Kee Nong Go Mong	88	770	27	9	Drainage	52	Eutrophic
Leda (Frieda)	12	- -	22	13	Drained	- -	- -
Long	84	259	5	3	Drainage	61	Eutrophic
Overson Pond	18	- -	6		Seepage	- -	- -
Rockland	45	- -	25	10	Drained	49	Eutrophic
Rodgers Pond	11	- -	7	19	Seepage	- -	- -
Tahoe	6	- -	3	- -	Seepage	- -	- -
Waterford Impoundment							
Buena	72	- -	8		Drainage	56	Eutrophic
Tichigan	1,132	- -	63	6	Drainage	51	Eutrophic
Waubeesee	139	2,450	73	19	Drainage	47	Mesotrophic
Wind[d]	919	8,995	47	10	Drainage	50	Eutrophic

[a] *Lakes in Racine County exist only in the Fox River watershed.*

[b] *Drainage lakes are lakes having both a defined inlet and a defined outlet. These waterbodies are commonly referred to as through-flow lakes. Drained lakes are lakes having a defined outlet without a defined inlet. Seepage lakes are lakes without either a defined inlet or defined outlet. These waterbodies are sometimes referred to as internally drained lakes.*

[c] *Trophic State Index (TSI) values are determined from water clarity data, total phosphorus concentration data, and chlorophyll-a concentration data using mathematical relationships published by Robert E. Carlson, "A Trophic State Index for Lakes",* Limnology and Oceanography*, volume 22, pages 361-368, 1977. The data used to determine TSI values were collected between 2002 and 2020 by the Wisconsin Department of Natural Resources, the U.S. Geological Survey, or citizen volunteers under the Wisconsin Department of Natural Resources Self-Help Monitoring Program.*

Eagle Lake, Town of Dover, Racine County

Rivers and Streams

Perennial rivers and streams are defined by maintaining, at a minimum, a small continuous flow throughout the year except under unusual drought conditions. There were about 105 miles of named perennial rivers and streams in Racine County reported by the Wisconsin Department of Natural Resources (WDNR) in their 1963 surface water inventory for the County.[4] An additional 40 miles of unnamed tributary streams draining into the quality of water by acting as a filter or a buffer zone allowing silt and sediments to settle out. They also influence the quantity of water by providing water during periods of drought and holding it back during periods of flood.

Some rivers and streams within Racine County have been assessed and determined by the WDNR as being impaired by on or more pollutants (i.e., total phosphorus, bacteria, sediment/total suspended solids, chlorides, PCB's). Impaired water are waters that do not meet water quality standards (numeric or narrative criteria) and do not meet one or more beneficial uses of the water (recreation, public health and welfare, aquatic life and wildlife). Water quality criteria are developed by the WDNR to protect specific uses. Map 19 and the tables immediately following show the impaired waters as of 2022.

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[4]*Wisconsin Department of Natural Resources (Wisconsin Conservation Department),* Surface Water Resources of Racine County*, 1961.*

Dams
Racine County has six dams located throughout the county, which are as follows: Echo Lake dam, Eagle Lake dam, Horlick dam, Rochester dam, Waterford dam, and the Wind Lake dam. Dams are structures that are built across a river or stream to store water. Most of the dams built are eventually used for multiple purposes which further enhances the importance of dams. Dams also help maintain the water level throughout rivers and streams. They can be used to produce hydroelectric power, support the irrigation system as well as be used for fishing and other recreational activities all at once.

Horlick Dam
The Root River drainage area upstream of the dam is approximately 198 square miles, encompassing portions of Waukesha, Milwaukee, Kenosha and Racine counties. The Horlick's Dam specifically resides on the Root River at river mile 5.3, or 5.3 miles upstream of Lake Michigan. Horlick's Dam blocks fish passage to 160.2 miles of upstream river and tributary habitat, and 6,176 acres of wetland habitat.

The goal for this project is to restore riverine connectivity to the Root River watershed, and to restore riverine habitat within the reach affected by Horlick's Dam. Objectives are to reestablish quality and connectivity of riverine and riparian habitats.

The project was determined to be in the federal interest in July 2020. In partnership with Racine County Public Works and Development Services, completion of the Feasibility Study Report would complete the plan formulation process, identify cost effective plans for ecosystem restoration purposes, and complete preliminary design of the recommended plan. The report will serve as the decision document for the approval of construction funding. The feasibility cost sharing agreement for this study was executed on December 3, 2020, between United States Army Corps of Engineers (USACE) and Racine County Public Works and Development Services. The feasibility study has been initiated and is scheduled for completion in early 2022.

Echo Lake Dam
In 2015 the Wisconsin Department of Natural Resources (WDNR) required the City to perform a Dam Failure Analysis (DFA) for the Echo Lake Dam. The findings of the DFA were that the dam could not contain a modeled "500-year-flood", which is a requirement of a dam of its classification. WDNR has required the City to achieve compliance with this requirement by July 2025. Compliance can be achieved by making modifications to the dam to increase spillway capacity, or by removing the dam. In either case some change will be necessary for the dam and maintaining the dam in its current state is not an option for compliance.

The City's consultants are wrapping up the final elements of the Echo Lake Dam Feasibility Study. This study contains multiple options to achieve compliance with dam spillway capacity requirements including dam spillway modifications and dam removal. Each option presented in the study has a concept level design and cost estimate. City staff and staff from Ayres worked closely with staff from the Wisconsin Department of Natural Resources (WDNR) to ensure the spillway modification options presented in the study will be able to achieve compliance with spillway capacity requirements. This is a very important project for the community and it was critical we only presented options that are viable, realistic, and able to achieve compliance. The City is grateful for the collaboration and guidance provided by WDNR staff to help us achieve these goals.

The Council will then need to make a decision on which option to pursue to achieve dam compliance and approve an authorizing resolution for a municipal dam grant application for the selected project. This decision will likely be in early 2022.

Waterford Dam
In 1982, the WI DNR set the order for the Waterford Dam which regulates the water elevation at the dam at 772.63 feet mean sea level datum. The minimum flow release is set at 37 cfs at all times. One radial gate must be open at least 2.4 inches at all times or both radial gates must be open at 1.2 inches at all times. The dam creates an impoundment that supports over 1100 properties directly on the Fox River and Tichigan Lake.

Eagle Lake Dam
The Eagle Lake Dam is considered a low hazard dam by the Wisconsin DNR. The dam receives an in-depth inspection once every ten years with the most recent inspection occurring in 2017. The DNR approved the Inspection, Operation and Maintenance (IOM) plan in March 2013 which Racine County Public Works staff use and follow. The dam is inspected at least once per week for debris removal and functionality. The dam is inspected daily during large rain or flood events.

Rochester Dam
Historically, the Rochester Dam had drawdowns to allow work to be completed on the Wind Lake Canal and other tributaries directing water into the Fox River. In 2017, the WI DNR allowed the Racine County Drainage District one final permission to draw down citing the drawdowns have a negative impact on fish, wildlife, health of the river and recreational access. Located west of Case Eagle Park, the dam creates an area for fishing and canoe / kayak access to the river.

Wind Lake Dam
The Dam operation is regulated by the WI DNR order that dictates the water levels to be maintained. The top of the spillway is the legal level of Wind Lake during the summer. In winter, the legal level is six inches lower. The dam operator is in contact with the operator of the Big Muskego Dam to allow for more consistent management and minimally fluctuating lake levels.

Waukesha Water Diversion for Lake Michigan Water
Racine County is aware of the approval of a water diversion from Lake Michigan to Waukesha County in 2021. Waukesha and Racine County intend to use various methods to monitor downstream impacts on neighboring communities by promoting stream gauges, various agency monitoring and having data available to the public. The Racine County LWCD will review data and environmental impacts of the water diversion on Racine County in the Fox and Root River watersheds.

Wetland Resources
Wetlands form the transition between surface and ground water resources and land resources. Wetlands are defined by the Regional Planning Commission as, "areas that have a predominance of hydric soils and that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions." This definition, which is also used by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency, is essentially the same as used by the Natural Resource Conservation Service.[5] Another definition, which is applied by the State of Wisconsin Department of Natural Resources and which is set forth in Chapter 23 of the *Wisconsin Statutes*, defines a wetland as "an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation, and which has soils indicative of wet conditions." In practice, the Department definition differs from the Regional Planning Commission definition in that the Department considers very poorly drained, poorly drained, and some of the somewhat poorly drained soils as wetland soils meeting the Department "wet condition" criterion. The Commission definition only considers the very poorly drained and poorly drained soils as meeting the "hydric soil" criterion. Thus, the State definition as actually applied is more inclusive than the Federal and Commission

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[5]*Lands designated as prior converted cropland, that is, lands that were cleared, drained, filled, or otherwise manipulated to make them capable of supporting a commodity crop prior to December 23, 1985, may meet the criteria of the U.S. Natural Resources Conservation Service wetland definition, but they would not be regulated under Federal wetland programs. If such lands are not cropped, managed, or maintained for agricultural production, for five consecutive years, and in that time the land reverts back to wetland, the land would then be subject to Federal wetland regulations.*

definitions in that the Department may include some soils that do not show hydric field characteristics as wet soils capable of supporting wetland vegetation, a condition which may occur in some floodlands.[6]

As a practical matter, experience has shown that application of the Wisconsin Department of Natural Resources, the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, and the Regional Planning Commission definitions, produce reasonably consistent wetland identifications and delineations in the majority of situations within the Southeastern Wisconsin Region. That consistency is due in large part to the provision in the Federal wetland delineation manual that allows for the application of professional judgement in cases where satisfaction of the three criteria for wetland identification is unclear.

As illustrated on Map 10, there are approximately 31.7 square miles of wetlands in Racine County, which is about 9 percent of the total land area in the County. In 2015, included in the 31.7 square miles of wetlands are 1.9 square miles which have been classified as "farmed wetlands;" these areas meet the definition of a wetland, but are actively being farmed as of 2015. This data is based on the Southeastern Wisconsin Regional Planning Commission wetlands inventory maps which are a refinement of the Wisconsin Department of Natural Resources State inventory maps. These maps illustrate wetlands that were delineated primarily by aerial photography interpretations. For site-specific consideration involving wetlands, it is recommended that an onsite investigation be conducted to determine the extent of the wetland areas. These wetlands are classified predominantly as potholes, fresh meadows, shallow marshes, deep marshes, shrub swamps, timber swamps, and bogs. These wetlands form an important part of the landscape in Racine County, in that they perform an important set of natural functions that make them ecologically and environmentally invaluable resources. Wetlands affect the named watercourses were identified in the adopted regional water quality management plan.[7] There are 145 stream miles for which data are available, about 16 miles, or about 11 percent, were reported to be of very poor to fair quality, and about 53 miles, or about 37 percent, were reported to be of fair to poor quality, based upon calculated biotic indices[8,9] .

When located along shorelines of lakes and streams, wetlands help protect those shorelines from erosion. Wetlands also may serve as groundwater discharge and recharge areas in addition to being important resources for overall ecological health and diversity by providing essential breeding and feeding grounds, shelter, and escape cover for many forms of fish and wildlife. However, wetlands are poorly suited to urban use. This is due to the high soil compressibility and instability, high water table, low load-bearing capacity, and high shrink-swell potential of wetland soils, and, in some cases, to their potential for flooding. In addition, metal conduits placed in some types of wetland soils may be subject to rapid corrosion. These constraints, if ignored, may result in flooding, wet basements and excessive operation of sump pumps, unstable foundations, failing pavements, broken sewer and water lines, and excessive infiltration of clear water into sanitary sewerage systems. In addition, there are significant onsite preparation and maintenance costs associated with the development of wetlands, particularly as they relate to roads, foundations, and public utilities.

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[6]*Although prior converted cropland is not subject to Federal wetland regulations unless cropping ceases for five consecutive years and the land reverts to a wetland condition, the State may consider prior converted cropland to be subject to State wetland regulations if the land meets the criteria set forth in the State wetland definition before it has not been cropped for five consecutive years.*

[7]*SEWRPC Planning Report No. 30,* A Regional Water Quality Management Plan for Southeastern Wisconsin: 2000*, Volume One,* Inventory Findings*, September 1978.*

[8]*Wisconsin Department of Natural Resources Technical bulletin No. 132,* Using a Biotic Index to Evaluate Water Quality in Streams*, 1982.*

[9]*U.S. Department of Agriculture, Forest Service General Technical Report No. NC-149,* Using The Index of Biotic Integrity (IBI) to Measure Environmental Quality in Warmwater Streams of Wisconsin*, April 1992.*

Restored Wetland located in the Town of Dover, Racine County

CLIMATE

Racine County is located in the mid-continental zone, which gives the County a continental climate that spans four seasons. Summers typically occur during the months of June, July, and August. The summers are warm with periods of hot, humid weather and sporadic periods of cool weather. Winters are cold and generally occur during the months of December, January, and February. Winter weather conditions can also be experienced in November and March. Lake Michigan tends to have a cooling effect on Racine County during the summer and a warming effect during the winter. Autumn and spring are transitional weather periods with widely varying temperatures and long periods of precipitation.

The mean annual precipitation for Racine County is approximately 35 inches. The majority of precipitation in Racine County falls in the form of rain during the growing season, between May and September. Precipitation in Racine County can occur in the form of rain, sleet, hail, and snow and ranges from gentle showers to destructive thunderstorms. The more severe weather events, such as severe thunderstorms and tornadoes, can cause major property and crop damage, inundation of poorly drained areas, and lake, river, and stream flooding.

Any climate changes can have a significant impact of the growing season, intensity of storm events, soil erosion, changes in vegetation, flooding, and other environmental conditions. Climate changes are being monitored and taken into consideration for planning best management practices.

TERRESTRIAL NATURAL RESOURCES

The natural resource base of Racine County is comprised not only of the water resources described above, but also of upland areas comprised of woodlands and lands developed for human use as agricultural lands, residential lands, or commercial and industrial developments. As set forth above, the wetlands of Racine County are an example of a portion of the natural resource base that limits human usage to nonstructural uses. In contrast, woodlands and other uplands generally lend themselves to structural human uses. Because the woodlands of Racine County not only lend themselves to human development, but also form an important upland component of the natural resources base of the County, these terrestrial resources, together with an inventory of their wildlife, habitat, and recreational use value and potentials, are described below as elements of the land resources base of the County.

Woodlands

Woodlands are defined by the Regional Planning Commission as those areas containing a minimum of 17 trees per acre with a diameter of at least four inches at breast height (4.5 feet above the ground).[10] Woodlands are classified as dry, dry-mesic, mesic, wet-mesic, wet hardwood, and conifer swamp forests; the last three are also considered wetlands. The major tree species in Racine County include the black willow (*Salix nigra*), cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), American elm (*Ulmus americana*), basswood (*Tilia americana*), northern red oak (*Quercus rubra*), and shagbark hickory (*Carya ovata*). Some isolated stands of tamarack (*Larix laricina*) also exist in the County, together with such other upland species as the white oak (*Quercus alba*), burr oak (*Quercus macrocarpa*), black cherry (*Prunus serotina*), and sugar maple (*Acer saccharum*).

Woodlands in Racine County have both economic and ecological values, and with proper management can serve a variety of uses with that provide multiple benefits. In 2010, there were approximately 19.6 square miles of woodlands or about 6 percent of the land area in the County as shown on Map 11. The quality of life within an area is greatly influenced by the scenic beauty and ecological diversity. Woodlands are primarily located along lakes and streams, along ridges and slopes, within wetlands, and in mixed isolated woodlots, and provide an attractive natural resource of immeasurable value. Not only is the beauty of the lakes, streams, and glacial landforms of the County accentuated by woodlands, but woodlands are also essential to maintaining the overall quality of the environment. Woodlands should be maintained for their total values—scenic, wildlife, educational, recreational, and watershed protection, as well as for their forest products. Under balanced use and sustained yield management, woodlands can provide many of these uses simultaneously.

Wildlife Habitat

Wildlife in Racine County include upland game and nongame species such as racoons, skunks, possum, rabbits, squirrels, shrews, mice, and woodchucks; predators such as fox, coyote and mink; game birds including pheasant; and marsh furbearers such as muskrats. In addition, waterfowl are present and deer are found in some areas. The remaining habitat and wildlife residing therein provide opportunities for recreational, educational, and scientific activities, and constitute an aesthetic asset to the County. Wildlife habitat areas remaining in the Southeastern Wisconsin Region were inventoried by the Regional Planning Commission in 1985 in cooperation with the Wisconsin Department of Natural Resources. The major criteria used to determine the value of these wildlife habitat areas are listed below:

1. Diversity—An area must maintain a high, but balanced, diversity of species for a temperate climate, balanced in such a way that the proper predatory-prey (consumer-food) relationships can occur. In addition, a reproductive interdependence must exist.

[10] *SEWRPC Technical Record, Vol. 4, No. 2, March 1981.*

2. Territorial Requirements—The maintenance of proper spatial relationships among species, allowing for a certain minimum population level, can occur only if the territorial requirements of each major species within a particular habitat are met.

3. Vegetative Composition and Structure—The composition and structure of vegetation must be such that it meets the required levels for nesting, travel routes, concealment, and protection from weather are met for each of the major species.

4. Location with Respect to Other Wildlife Habitats—It is very desirable that a wildlife habitat maintain proximity to other wildlife habitats to maintain connectivity through an environmental corridor.

5. Disturbance—Minimum levels of disturbance from human activities are necessary, other than those activities of a wildlife management nature.

Based on the five criteria, the wildlife habitat areas in Racine County were categorized as Class I, high-value; Class II, medium-value; or Class III, good-value habitat areas. Class I wildlife habitat areas contain a good diversity of wildlife, are adequate in size to meet all habitat requirements for the species concerned, are generally located in proximity to other wildlife habitat areas and meet all five criteria listed above. Class II wildlife habitat areas generally fail to meet one of the five criteria in the preceding list for a high value wildlife area. However, they do retain a good plant and animal diversity. Class III wildlife habitat areas are remnant in nature, and they generally fail to meet two or more of the five criteria for a high-value wildlife habitat, but may, nevertheless, be important if located in proximity to medium or high-value habitat areas, especially if they provide corridors linking wildlife habitat areas of higher value or if they provide the only available range in an area.

There are about 39,000 acres of wildlife habitat, or approximately 18 percent of the land area in the County, that was identified in the 1985 inventory. Of the wildlife habitat identified in the County, approximately 16,000 acres, or about 7 percent, were classified as Class I habitat; 15,000 acres, or 7 percent, were classified as Class II habitat; and 8,000 acres or, 4 percent, were classified as Class III habitat.

Natural Areas and Critical Species Habitat Sites

Natural areas, as defined by the Wisconsin Natural Areas Preservation Council, are tracts of land or water so little modified by human activity, or sufficiently recovered from the effects of such activity, that they contain intact native plant and animal communities believed to be representative of the pre-European settlement landscape. Natural areas are classified into one of the following three categories:

1. Natural area of Statewide or greater significance (NA-1)

2. Natural area of countywide or regional significance (NA-2)

3. Natural area of local significance (NA-3)

Classification of an area into one of these three categories is based upon consideration of several factors. These factors include the diversity of plant and animal species and community types present; the structure and integrity of the native plant or animal community; the extent of disturbance by human activity, such as logging, grazing, water level changes, and pollution; the commonness of the plant and animal communities present; any unique natural features within the area; the size of the area; and the educational value. Natural areas form an element of the wildlife habitat base of the County.

A comprehensive inventory of natural area sites in Racine County was completed in 2009 by area naturalists and by the Regional Planning Commission staff.[11] As indicated illustrated on Map 12, there were 61 natural area sites inventoried in the County that encompassed a total of about 5,600 acres, or approximately 3 percent of the land

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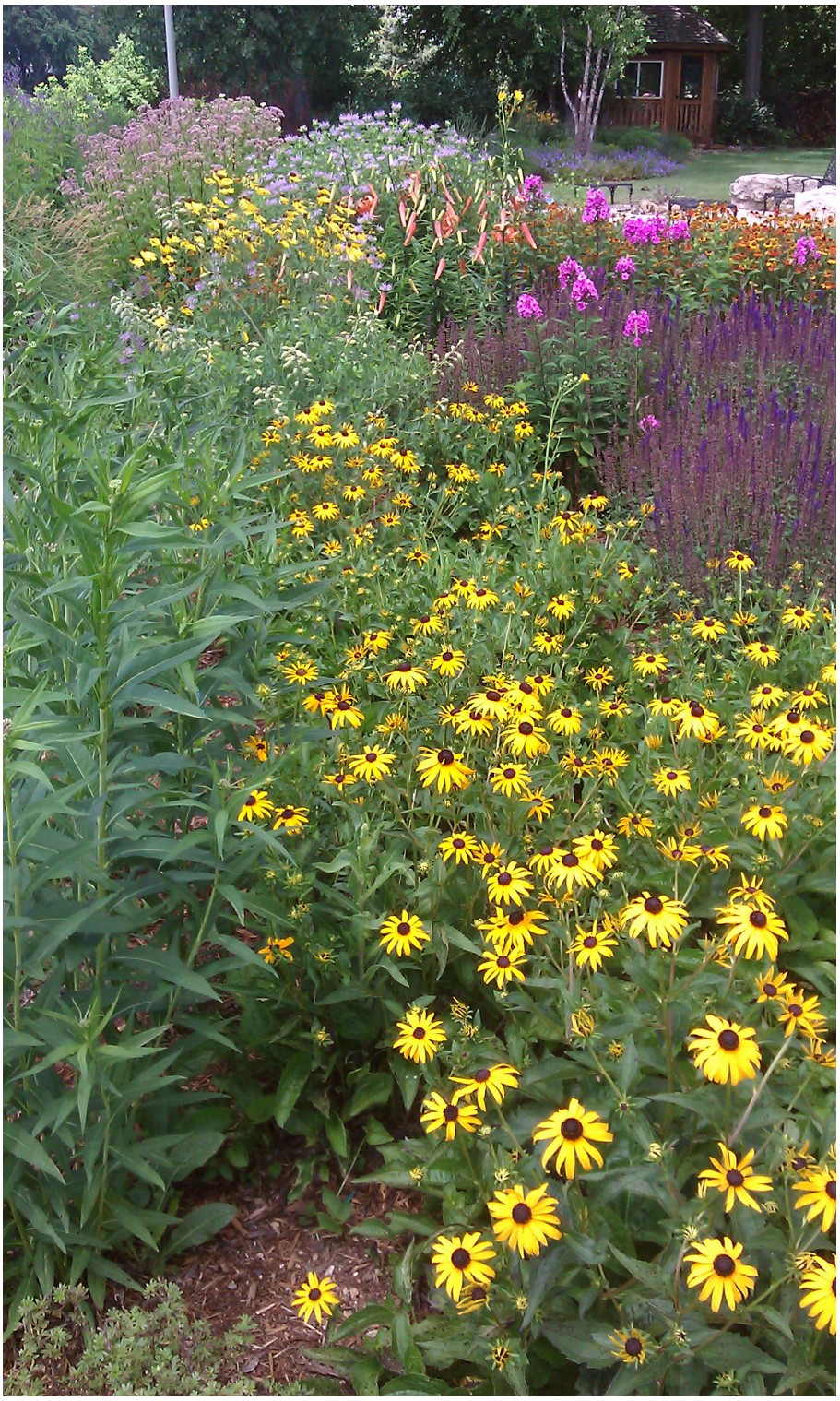
[11]*SEWRPC Planning Report, No. 42,* A Regional Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin*, December 2010.*.

area. In addition, the 2009 natural areas inventory also included an inventory of critical species habitat sites located in Racine County. Critical species are those species of plant and animals that are considered endangered, threatened, or of special concern. Map 13 identifies 38 critical species habitat sites are located within identified natural areas of the County; however, a few are located outside of the known natural areas.



Native Flowers along a Shoreline - Town of Waterford

Table 3

NATURAL AREAS IN RACINE COUNTY: 2009

Number on Map 12	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
1	Cherry Lake Sedge Meadow State Natural Area	NA-1 (SNA)	T3N, R19E Sections 10, 15 Village of Rochester	Department of Natural Resources and private	190	High-quality lowland complex of fen, wet prairie, sedge meadow, shrub-carr, shallow lake, and tamarack relict within a matrix of disturbed upland oak woods. A good combination of alkaline- and acid-loving plant is present. The irregular openings of water provide good nesting and escape cover for waterfowl, especially mallards, wood ducks, and blue-winged teals. The western border is a one-mile-long esker
2	Kansasville Railroad Prairie	NA-1	T3N, R20E Sections 25, 26, 35, 36 Town of Dover T3N, R21E Section 30 Town of Yorkville	Private	28	Discontinuous remnants of mesic prairie located along railway right-of-way between Union Grove and Kansasville. Small sections are of very high quality, representing the best remaining examples of the once-extensive mesic prairie of central Racine and Kenosha counties. Also included is a large old field which has been plowed but in which native prairie species have either persisted or are reinvading from the adjacent railway right-of-way. This latter area could be important for prairie reestablishment
3	Franksville Railroad Prairie	NA-1	T3N, R22E Sections 4, 9 Village of Mt. Pleasant	Private	4	A very rich and diverse remnant of mesic and wet-mesic prairie, located on west side of railway right-of-way. Contains some of the best such remnants in the Region. Regionally uncommon species include wild quinine (*Parthenium integrifolium*), prairie Indian plantain (*Cacalia tuberosa*), and marsh blazing-star (*Liatris spicata*)
4	Sanders Park Hardwoods State Natural Area	NA-1 (SNA)	T3N, R22E Section 36 Village of Mt. Pleasant	Racine County	56	Good-quality southern dry-mesic forest on two low ridges separated by a lowland swale. Good size-class distribution of tree species, including a number of large walnuts. The ground flora is rich and diverse, including several large patches of goldenseal (*Hydrastis canadensis*), a State-designated special concern species
5	Tichigan Fen, Springs, and Woods	NA-1	T4N, R19E Sections 21, 22 Town of Waterford	Department of Natural Resources and private	131	A fine example of springs and calcareous fen, with a number of uncommon species present. The site includes the lesser-quality upland woods to the south that protects the water sources of the springs
6	Elm Island Bog—Island Oak Woods	NA-1	T4N, R19E Sections 23, 24, 25, 26 Town of Waterford	Racine County and private	67	Two distinct plant communities of good quality are present—an upland wooded island dominated by red and white oaks without signs of past logging or grazing is bordered on the east by a sphagnum-tamarack bog with a number of characteristic bog species present
7	Renak-Polak Maple-Beech Woods State Natural Area	NA-1 (SNA)	T4N, R22E Section 14 Village of Caledonia	University of Wisconsin—Parkside and private	138	Outstanding, mostly old-growth low-lying southern mesic forest on east side of Root River. Wet-mesic hardwoods, shrub-carr, and shallow marsh lie along an intermittent stream which crosses the tract. Noted for spectacular displays of spring wildflowers. Probably the best such woods remaining in the Region
- -	Subtotal	NA-1	7 sites	- -	614	- -
8	Karcher Springs State Natural Area	NA-2 (SNA)	T2N, R19E Section 21 Town of Burlington	Department of Natural Resources	19	Spring heads originating on east side of a wooded esker supply water for a clear, fast, cold, marl bottomed stream. Along banks is found calcareous fen, habitat for a number of uncommon species

Table 3 (continued)

Number on Map 12	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
9	Brock Lake Fen	NA-2	T3N, R19E Sections 15, 16, 21 Village of Rochester	Department of Natural Resources and private	231	High-quality wetland complex of fen, shallow marsh, sedge meadow, and small, undeveloped lake. The rich native species complement includes a number of uncommon ones, such as beaked spike-rush (*Eleocharis rostellata*), Ohio goldenrod (*Solidago ohioensis*), common bog arrow-grass (*Triglochin maritima*), and marsh blazing-star (*Liatris spicata*). An integral part of a long northeast-southwest lowland corridor
10	Honey Lake Marsh and Sedge Meadow	NA-2	T3N, R19E Sections 17-20 Town of Burlington T3N, R18E Sections 13, 24 Town of Spring Prairie	Department of Natural Resources, The Nature Conservancy, and other private	250 (plus 141 in Walworth County)	Large, relatively undisturbed wetland complex, primarily consisting of good-quality sedge meadow and deep and shallow marsh, but also smaller areas containing springs and calcareous fens. Nesting site for sandhill cranes
11	Leda Lake Fen-Meadow	NA-2	T3N, R19E Sections 20, 21 29 Town of Burlington	Department of Natural Resources and private	222	Good-quality wetland complex of small, shallow, undeveloped lake, floating sedge mat, fen, sedge meadow, shrub-carr, and shallow cattail-bulrush marsh. Part of Cherry Lake—Brock Lake—Leda Lake environmental corridor
12	Rosewood Railroad Prairie	NA-2	T3N, R20E Sections 31-34 Town of Dover	Private	25	Discontinuous remnants of mesic prairie extending for three miles along deactivated railway right-of-way between Kansasville and Rosewood. Moderate quality overall, with small portions in better condition. Good diversity of native species, including a number of uncommon ones
13	Schroeder Road Marsh	NA-2	T3N, R20E Sections 35, 36 Town of Dover T2N, R20E Sections 1, 2 Town of Brighton	Private	77 (plus 111 in Kenosha County)	Large wetland area of shallow cattail marsh and sedge meadow that extends into Kenosha County. Perimeter has been disturbed but interior is intact
14	Union Grove Railroad Prairie	NA-2	T3N, R21E Sections 25, 26, 27, 28, 29 Town of Yorkville	Private	44	Discontinuous remnants of mesic prairie along railway right-of-way, extending east from Union Grove to IH 94. Some small patches are of very good quality, containing such uncommon species as wild quinine (*Parthenium integrifolium*) and prairie Indian plantain (*Cacalia tuberosa*), both designated as threatened in Wisconsin
15	Colonial Park Woods	NA-2	T3N, R23E Section 8 City of Racine	City of Racine and private	94	Complex of lowland hardwoods, floodplain forest, and upland mesic to dry-mesic woods bordering the Root River. A number of uncommon species are present, including the State-designated endangered blue-stemmed goldenrod (*Solidago caesia*) and the State-designated threatened forked aster (*Aster furcatus*)
16	Norris Marsh and Slough	NA-2	T4N, R19E Sections 2, 3, 10 Town of Waterford	Private	183 (plus 26 in Waukesha County)	Good-quality deep and shallow marsh along the Fox River
17	Tichigan Marsh	NA-2	T4N, R19E Sections 9, 10, 15, 16 Town of Waterford	Department of Natural Resources and private	466	Large, good-quality deep and shallow marsh with patches of sedge meadow, bordering Tichigan Lake. Department of Natural Resources has excavated a series of ponds for wildlife
18	Tichigan Wetlands and Low Woods	NA-2	T4N, R19E Sections 10, 11 Town of Waterford	Department of Natural Resources and private	170	Wetland-upland complex consisting of good-quality deep and shallow marsh and sedge meadow bordered on north by older dry, dry-mesic, and wet-mesic woods, and regenerating woods and old field

Table 3 (continued)

Number on Map 12	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
19	Waubeesee Oak Woods and Tamarack Relict	NA-2	T4N, R20E Section 7 Town of Norway	Racine County and private	187	Relatively large and mostly intact oak woods on rough glacial topography, with intervening wetlands in depressions, some of which contain relict tamaracks. This is one of the few woods of such size remaining in this rapidly developing part of the Region
20	Wind Lake Shrub-Fen	NA-2	T4N, R20E Section 9 Town of Norway	Private	21	Good-quality wetland complex of fen and shrub-carr on south end of Wind Lake. Contains a good population of Ohio goldenrod (*Solidago ohioensis*)
21	Wind Lake Tamarack Swamp	NA-2	T4N, R20E Sections 10, 11, 14, 15 Town of Norway	Department of Natural Resources and private	334	Large block of former tamarack swamp that is converting to lowland hardwoods due to hydrologic changes resulting from artificial drainage of surrounding agricultural land. This woods remains a refugium for many species with more northerly affinities, such as starflower, goldthread, winterberry, dwarf raspberry, yellow birch, bunchberry, and blueberry
22	County Line Riverine Woods	NA-2	T4N, R21E Section 1 Town of Raymond	Racine County and private	141	Good-quality riverine lowland hardwood forest along the Root River. Smaller upland to north west contains mesic hardwoods with a rich ground flora. An integral part of the Root River environmental corridor
23	Root River Canal Woods	NA-2	T4N, R21E Section 3 Town of Raymond T5N, R21 E Section 34 City of Franklin	Milwaukee County and private	163 (plus 152 in Milwaukee County	A mixture of good-quality dry-mesic and lowland hardwood forest along the Root River Canal. One of the largest intact forested tracts in this part of the Region
24	Hunts Woods	NA-2	T4N, R22E Section 3 Village of Caledonia	Racine County and private	36	A small but undisturbed remnant of southern mesic hardwoods, dominated by mature beeches and sugar maples. The woods to the south and east are younger, while to the north are lowland hardwoods. The relatively rich ground flora includes the State-designated endangered blue-stemmed goldenrod (*Solidago caesia*)
25	Root River Wet-Mesic Woods—East	NA-2	T4N, R22E Section 5 Village of Caledonia T5N, R22E Section 32 City of Oak Creek	Racine County and Milwaukee County	2 (plus 50 in Milwaukee County	Wet-mesic and mesic woods Bordering a gravel-bottom stream that is tributary to the Root River. Contains a rich, diverse flora, including several rare species
26	Caledonia Wildlife Area	NA-2	T4N, R22E Section 21 Village of Caledonia	Village of Caledonia and private	166	An open wetland with seasonal ponds that attract a large number of migrating birds such as whistling swans, snow geese, golden plovers, and willets. The pond is one of the few secure stopover areas in the Region, and it is a very good observation area
27	Cliffside Park Woods and Clay Banks	NA-2	T4N, R23E Sections 7, 8 Village of Caledonia	Racine County, Village of Caledonia, and private	55	Second-growth mesic woods, ravine, and steep clay banks along Lake Michigan harbor a rich and diverse flora, including such uncommon species as buffaloberry, cream gentian, stiff gentian, balsam poplar, and blue-stemmed goldenrod
- -	Subtotal	NA-2	20 sites	- -	2,886	- -
28	Burlington Hills Woods	NA-3	T2N, R19E Sections 5, 6, 7, 18 Town of Burlington T2N, R18E Sections 1, 12, 13 Town of Lyons	Private, plus a portion of site in Walworth County protected through conservation easement with Geneva Lakes Conservancy	416 (plus 86 in Walworth County)	Rough morainal ridges occupied by mature and second-growth oak woods, with small, scattered patches of dry hill prairie and disturbed openings. Largest remaining upland woods in Racine County; important for forest-interior-breeding birds. However, ongoing sand and gravel mine operations have reduced the wooded acreage

Table 3 (continued)

Number on Map 12	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
29	Burlington Railroad Prairie	NA-3	T2N, R19E Section 6 Town of Burlington T2N, R18E Section 1 Town of Lyons	Private	5 (plus 1 acre In Walworth County)	One-quarter-mile stretch of mesic, dry-mesic, and dry prairie remnants bordering railway right-of-way
30	Bohner Lake Lowlands	NA-3	T2N, R19E Sections 19, 20 Town of Burlington	Private	33	Moderate-quality combination of shallow marsh, sedge meadow, and shrub-carr
31	Tri-County Tamarack Swamp	NA-3	T2N, R19E Section 19 Town of Burlington T2N, R18E Sections 24, 25 Town of Lyons	Private	15 (plus 25 in Walworth County)	Medium-aged tamarack swamp surrounded by dense shrub-carr
32	Wadewitz Woods	NA-3	T3N, R19E Sections 2, 3 Village of Rochester	Racine County and private	204	Large upland complex of disturbed oak woods and former oak openings, cedar glades, dry-mesic woods, small dry hill prairie, and older woods
33	Rowntree Road Woods	NA-3	T3N, R19E Sections 11, 12 Village of Rochester	Private	77	A typical xeric oak woods, with several wet areas containing lowland hardwoods. An active blue heron rookery is present
34	English Settlement Prairie	NA-3	T3N, R19E Section 13 Village of Rochester	Private	16	Moderate-quality wet-mesic prairie with a history of disturbance, including plowing and grazing
35	Eagle Creek Woods	NA-3	T3N, R19E Sections 13, 14 Village of Rochester	Private	84	Typical xeric oak woods—relatively large but with a history of grazing and selective cutting
36	Fox River Prairie	NA-3	T3N, R19E Sections 14, 15 Village of Rochester	Private	2	Small prairie remnants along former railway right-of-way, now a county bicycle trail. Area consists of two separate patches—a hill to the south contains a small, depauperate dry prairie, while to the north a low area contains a larger and better-quality mesic and wet-mesic prairie
37	Honey Lake Leatherleaf Bog	NA-3	T3N, R19E Sections 19, 20 Town of Burlington	Private	63	A large monotypic leatherleaf bog relict, rare in the southern part of the Region
38	Fox River Riverine Forest	NA-3	T3N, R19E Sections 21, 22, 28 Town of Burlington	Racine County and private	131	Lowland and upland woods bordering the Fox River
39	Wehmhoff Park Upland Woods and Wetlands	NA-3	T3N, R19E Section 29 Town of Burlington	Town of Burlington and private	80	Moderate-quality sedge meadow-shallow marsh wetlands, located within an upland matrix of disturbed oak woods and dry hill prairie on hilly glacial terrain
40	Dover Wildlife Area Wetlands	NA-3	T3N, R20E Section 12 Town of Dover	Department of Natural Resources and private	49	Wetland complex maintained by Department of Natural Resources as wildlife refuge, consisting of shallow open water, shallow marsh, shrub-carr, and small wet-mesic prairie
41	Church Road Lowlands	NA-3	T3N, R20E Sections 16, 21 Town of Dover	Department of Natural Resources and private	24	Sedge meadow and shallow marsh on north shore of Eagle Lake
42	Eagle Lake Wetlands	NA-3	T3N, R20E Sections 27, 28 Town of Dover	Department of Natural Resources and private	46	Shallow marsh and shrub-carr on south shore of Eagle Lake. Disturbed by past ditching attempts
43	Vandenboom Road Marsh	NA-3	T3N, R20E Section 28 Town of Dover	Private and State of Wisconsin Public Trust Lands	27	Shallow, cattail-dominated marsh
44	Ives Grove Woods	NA-3	T3N, R21E Section 12 Town of Yorkville	Racine County and private	140	Relatively large upland wooded island, consisting of dry-mesic woods to south and xeric woods to north. Much of south woods is part of Racine County park. The ground flora is rich and diverse. A small stream bisects the two woods

Table 3 (continued)

Number on Map 12	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
45	Sylvania Railroad Prairie	NA-3	T3N, R22E Sections 20, 30 Village of Mt. Pleasant	Private	11	Mesic prairie remnant extending one mile east of IH 94 along railway right-of-way. Moderate quality, with a good population of wild quinine (*Parthenium integrifolium*), a State-designated threatened species
46	Hoods Creek Woods	NA-3	T3N, R22E Section 3 Village of Mt. Pleasant	Village of Mt. Pleasant and private	72	Mix of upland and lowland woods along Hoods Creek
47	Norris Oak Woods and Wetlands	NA-3	T4N, R19E Section 1 Town of Waterford T5N, R19E Sections 26, 35 Town of Vernon	Private	6 (plus 364 in Waukesha County)	Two separate disturbed oak woods and adjoining open wetlands bordering the Fox River
48	Van Valin Woods	NA-3	T4N, R19E Section 2 Town of Waterford	Private	26	Moderate-quality dry-mesic woods dominated by white oak, shagbark hickory, white ash, and sugar maple. Threatened by encroaching residential development
49	Tichigan Wet Prairie	NA-3	T4N, R19E Section 10 Town of Waterford	Department of Natural Resources	16	Moderate- to good-quality combination of wet prairie, sedge meadow, and shallow marsh, with some calciphiles, such as Ohio goldenrod (*Solidago ohioensis*), present. Site is burned periodically to control shrubs
50	Wind Lake Wet Meadow	NA-3	T4N, R20E Section 4 Town of Norway	Private	11	A moderate-quality wetland complex of wet meadow, fen, shallow marsh, and sedge meadow on north shore of Wind Lake. Contains marsh blazing-star (*Liatris spicata*), a State-designated special concern species
51	Six Mile Road Swamp	NA-3	T4N, R21E Section 7 Town of Raymond	Private	55	Lowland hardwood forest of moderate quality, with a few northern relicts, such as tamarack (mostly dead), winterberry, paper birch, dwarf raspberry, and sphagnum. Dry-mesic upland woods border on the south
52	Kimmel Woods	NA-3	T4N, R21E Section 12 Town of Raymond	Private	40	Moderate-quality southern dry-mesic woods and lowland hardwoods bordering a small stream. Good, representative ground flora
53	Root River Riverine Forest	NA-3	T4N, R22E Sections 3-6 Village of Caledonia T5N, R22E Sections 31-34 City of Oak Creek	Racine County, Milwaukee County, Wisconsin Department of Transportation, and private	184 (plus 147 in Milwaukee County)	A significant portion of the Root River corridor
54	Seven Mile Road Woods	NA-3	T4N, R22E Section 8 Village of Caledonia	Private	20	Second-growth maple-ash-oak woods of about 75 years of age that has been subjected to past selective cutting. Contains a rich and diverse ground flora. Low areas contain ephemeral ponds
55	Zirbes Woods	NA-3	T4N, R22E Section 9 Village of Caledonia	Private	13	A small but relatively undisturbed mesic woods dominated by basswood, white ash, red oak, and sugar maple, with a rich ground flora. Future high-grading is indicated by a number of the larger oaks which were marked
56	Caledonia Low Woods	NA-3	T4N, R22E Sections 10, 11, 14 Village of Caledonia	Racine County and private	107	Moderate-quality lowland hardwoods bordering the Root River. Adjoining upland woods contains three State-designated special concern species: American gromwell (*Lithospermum latifolium*), red trillium (*Trillium recurvatum*), and black haw (*Viburnum prunifolium*)
57	Foley Road Woods—East	NA-3	T4N, R22E Section 11 Village of Caledonia	Private	24	Moderate-quality mesic woods with a rich ground flora; reportedly contains the State-designated endangered blue-stemmed goldenrod (*Solidago caesia*)
58	Foley Road Woods—West	NA-3	T4N, R22E Section 11 Village of Caledonia	Private	19	Medium-age mesic and wet-mesic woods with a large population of black haw (*Viburnum prunifolium*)

Table 3 (continued)

Number on Map 12	Area Name	Classification Code[a]	Location	Ownership	Size (acres)	Description and Comments
59	Tabor Woods	NA-3	T4N, R22E Sections 13, 14 Village of Caledonia	Caledonia Conservancy and other private	106	Relatively large but irregularly shaped mesic, dry-mesic, and wet-mesic woods that have suffered various degrees of disturbance. Portions of the woods are dominated by beech. Threatened by increasing residential development in the area
60	Power Plant Ravine Woods	NA-3	T4N, R23E Section 6 Village of Caledonia	WE Energies	32	Mesic woods bordering a steep ravine that leads to Lake Michigan. Although the woods has suffered from disturbance, it contains a rich flora, including a large population of the State-designated endangered blue-stemmed goldenrod (*Solidago caesia*). The exposed ravine slopes and Lake Michigan clay banks contain a number of unusual species
61	Dominican Ravine	NA-3	T4N, R23E Section 21 Village of Caledonia	Private	18	Small woodland containing blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species
- -	Subtotal	NA-3	34 sites	- -	2,172	- -
- -	Total	All Natural Areas	61 sites	- -	5,672	- -

[a] *NA-1 identifies Natural Area sites of statewide or greater significance.*

NA-2 identifies Natural Area sites of countywide or regional significance.

NA-3 identifies Natural Area sites of local significance.

SNA, or State Natural Area, identifies those sites officially designated as State Natural Areas by the State of Wisconsin Natural Areas Preservation Council.

Source: SEWRPC.

Table 4

CRITICAL SPECIES HABITAT SITES IN RACINE COUNTY: 2009

Number on Map 13	Area Name	Location	Ownership	Size (acres)	Description and Comments
1	Mt. Tom Woods	T2N, R19E Sections 1, 12 Town of Burlington T2N, R20E Sections 6, 7 Town of Brighton	Private and Town of Burlington	21 (plus 3 in Kenosha County)	Hilly woodland on border of Kenosha and Racine counties
2	Bong State Recreation Area	T2N, R19E Sections 12, 13 Town of Burlington T2N, R20E Sections 3, 4, 7, 9, 15-23 Town of Brighton	Private, Department of Natural Resources, and Public School Districts	267 (plus 4,754 in Kenosha County)	Extensive artificial grasslands provide critical nesting habitat for grassland birds
3	Burlington Crevasse Filling	T2N, R19E Section 4 Town of Burlington	Private	34	Semi-open woodland supporting a small population of the State-designated threatened kittentails (*Besseya bullii*)
4	Margis Wildlife Area	T2N, R19E Section 17 Town of Burlington	Racine County	36	Small areas of wetland bordering open water contain lesser fringed gentian (*Gentianopsis procera*), a State-designated special concern species
5	Ranger Mac Fen	T2N, R19E Section 17 Town of Burlington	University of Wisconsin—Parkside	22	Lowland shrubland with small areas of fen and associated species
6	Karcher Sedge-Carr	T2N, R19E Sections 21, 22 Town of Burlington	Department of Natural Resources	249	Open wetland complex with a small population of prairie Indian plantain (*Cacalia tuberosa*), a State-designated threatened species
7	Case-Eagle Park	T3N, R19E Sections 10, 14, 15 Village of Rochester	Racine County	111	Disturbed oak woodland with small depauperate patches of dry prairie; the State-designated threatened kittentails (*Besseya bullii*) is present at low densities
8	Waxdale Railroad Prairie	T3N, R22E Sections 15, 22 Village of Mt. Pleasant	Private	1	Small, disturbed patches of remnant prairie supporting two critical species: wild quinine (*Parthenium integrifolium*) and waxy meadow rue (*Thalictrum revolutum*)
9	Pritchard Park Woods	T3N, R22E Section 24 City of Racine	Racine County	10	Small remnant of dry-mesic and wet-mesic woods containing the State-designated special concern red trillium (*Trillium recurvatum*)
10	Campbell Woods	T3N, R22E Sections 35, 36 Village of Mt. Pleasant	Private	43	Formerly of NA-3 status, extensive residential development has reduced the wooded acreage. The State-designated special concern red trillium (*Trillium recurvatum*) remains
11	Willow Woods	T3N, R22E Section 36 Village of Mt. Pleasant	Private	4	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
12	Washington Park Woods	T3N, R23E Section 17 City of Racine	City of Racine	14	Disturbed, very open mesic woods, but with a substantial population of blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species
13	Maple Road Gravel Pit	T4N, R19E Section 28 Town of Waterford	Private	102	Small patches of disturbed, open woodland bordering gravel pit that contains a small population of the State-designated threatened kittentails (*Besseya bullii*)
14	Erwin Wetlands	T4N, R20E Section 3 Town of Norway	Private	2	Disturbed prairie-fen supporting Ohio goldenrod (*Solidago ohioensis*), a State-designated special concern species
15	Patzke Fen	T4N, R20E Section 3 Town of Norway	Private	33	Disturbed prairie-fen supporting Ohio goldenrod (*Solidago ohioensis*), a State-designated special concern species

Table 4 (continued)

Number on Map 13	Area Name	Location	Ownership	Size (acres)	Description and Comments
16	Wind Lake	T4N, R20E Sections 3, 4, 8, 9, 10, 16, 17 Town of Norway	Department of Natural Resources and private	58	Wetlands bordering Wind Lake providing nesting habitat for black terns and Forster's terns
17	Waubeesee Lake	T4N, R20E Section 8 Town of Norway	Private	16	Wetlands bordering Waubeesee Lake providing nesting habitat for black terns and Forster's terns
18	Landon Wetland	T4N, R20E Section 10 Town of Norway	Private	12	Disturbed prairie-fen supporting Ohio goldenrod (*Solidago ohioensis*), a State-designated special concern species
19	WEPCO Oak Woods	T4N, R22E Section 1 Village of Caledonia	WE Energies	14	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species
20	WEPCO Woods	T4N, R22E Section 1 Village of Caledonia	WE Energies	18	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species
21	Sherwood Property	T4N, R22E Section 2 Village of Caldeonia	Private	4	Wetland containing a population of hoplike sedge (*Carex lupuliformis*), a State-designated endangered species
22	Forked Aster Site	T4N, R22E Section 23 Village of Caldeonia	Private	18	Woodland supporting forked aster (*Aster furcatus*), a State-designated threatened species
23	River Meadow Woods	T4N, R22E Section 23 Village of Caldeonia	Private	14	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
24	Caledonia Sanitary Sewer Right-of-Way	T4N, R22E Section 25 Village of Caldeonia	Caledonia Conservancy and other private	94	Shrubland containing blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species, and two species of special concern
25	Hoods Creek Swamp	T4N, R22E Section 26 Village of Caledonia	Private	13	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
26	Root River Bluff	T4N, R22E Section 26 Village of Caledonia	Private and Racine County	50	Small woodland supporting hoptree (*Ptelea trifoliata*), a State-designated special concern species
27	STH 38/CTH K	T4N, R22E Section 35 Village of Caledonia	Private	4	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
28	Lakeside Woods	T4N R23E Section 30 Village of Caledonia	WE Energies	2	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species
29	Wood Duck Woods	T4N, R23E Section 6 Village of Caledonia	WE Energies	3	Small woodland on grounds of Oak Creek Power Plant containing blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species
30	Cliffside Park Old Field	T4N, R23E Sections 7, 8 Village of Caledonia	Racine County	55	Old field/grassland complex within county park containing breeding habitat for a number of grassland-nesting birds
31	Four Mile Road Woods	T4N, R23E Sections 19, 30 Village of Caledonia	Private	31	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
32	Wind Point Ravine Woods	T4N, R23E Sections 21, 22, 27 Village of Wind Point and Village of Caledonia	Private	14	Small ravine woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
33	Wind Point	T4N, R23E Section 27 Village of Wind Point	City of Racine	4	Portion of Lake Michigan sand beach supporting sea rocket (*Cakile edentula*), a State-designated special concern species
34	Caledonia Low Woods—South	T4N, R23E Section 30 Village of Caledonia	Private and Racine County	30	Small woodland supporting two State-designated special concern species: red trillium (*Trillium recurvatum*) and hoptree (*Ptelea trifoliata*)

Table 4 (continued)

Number on Map 13	Area Name	Location	Ownership	Size (acres)	Description and Comments
35	Root River Ravine Woods	T4N R23E Section 30 Village of Caledonia	Private	5	Small woodland supporting red trillium (*Trillium recurvatum*), a State-designated special concern species
36	Root River Strip Woods	T4N, R23E Section 31 Village of Caledonia	Racine County	2	Small woodland supporting a State-designated special concern species, hoptree (*Ptelea trifoliata*)
37	River Bend Upland Woods	T4N, R23E Section 31 Village of Caledonia	Racine County	14	Dry-mesic woods containing blue-stemmed goldenrod (*Solidago caesia*), a State-designated endangered species
38	North Bay Ravine and Beach	T4N, R23E Section 33 Village of Caledonia	Private	2	Portion of Lake Michigan sand beach supporting sea rocket (*Cakile edentula*), a State-designated special concern species
Total	38 sites	- -	- -	1,426	- -

Environmental Corridors

One of the most important tasks undertaken by the Regional Planning Commission in its work program has been the identification and delineation of areas having concentrations of natural, recreational, historic, aesthetic, and scenic resources and which, as such, should be preserved and protected in order to maintain the overall quality of the environment.[12] Such areas normally include one or more of the following seven elements of the natural resource base which are essential to the maintenance of both the ecological balance and the natural beauty of the Region: 1) lakes, rivers, streams and the associated undeveloped shorelands and floodlands; 2) wetlands; 3) woodlands; 4) prairies; 5) wildlife habitat areas; 6) wet, poorly drained, and organic soils; and 7) rugged terrain and high-relief topography. While the foregoing seven elements constitute integral parts of the natural resource base, there are five additional elements which, although not a part of the natural resource base per se, are closely related, to or centered on, that base and, therefore, are important considerations in identifying and delineating areas with scenic, recreational, and educational value. These additional elements are: 1) existing outdoor recreation sites; 2) potential outdoor recreation and related open space sites; 3) historic, archaeological, and other cultural sites; 4) significant scenic areas; and 5) natural and scientific areas.

In Southeastern Wisconsin, the delineation of these 12 natural resource and natural resource-related elements on maps results in an essentially linear pattern of relatively narrow, elongated areas which have been termed "environmental corridors" by the Commission. Primary and secondary environmental corridors have been identified. Primary environmental corridors include a wide variety of the aforementioned important resource and resource-related elements and are, by definition, at least 400 acres in size, two miles in length, and 200 feet in width. Secondary environmental corridors generally connect with the primary environmental corridors and are at least 100 acres in size and one mile long. In addition, smaller concentrations of natural resource features that have been separated physically from the environmental corridors by intensive urban or agricultural land uses have also been identified. These areas, which are at least five acres in size, are referred to as isolated natural resource areas.

Natural areas and related amenities after often sought by the development, which can create severe environmental and developmental problems as well. These problems include: water pollution, flooding, wet basements, failing foundations for roads and other structures, and excessive infiltration of clear water into sanitary sewerage systems. The preservation of undeveloped corridors is one of the major ways in which the water quality can be protected and perhaps improved at relatively little additional cost to the taxpayers. The riverbanks and lakeshores located within the environmental corridors should be candidates for immediate protection through proper zoning or through public ownership. Of the areas not already publicly owned, the remaining areas of natural shoreline and riparian wetland areas, are perhaps the most sensitive areas in need of greatest protection. As previously noted, the regional natural areas and critical species habitat protection and management plan recommends public

[12] *SEWRPC Technical Record, Vol. 3, No. 6, April 1976.*

acquisition of specific lands.[13] Within the County, approximately 500 acres, is specifically recommended for acquisition, including the Renak-Polak Maple Beech Woods State Natural Area in the Village of Caledonia, the Kansasville Railroad Prairie in the Towns of Dover and Village of Yorkville, the Franksville Railroad Prairie and the Sanders Park Hardwood State Natural Area in the Village of Mt. Pleasant, the Cherry Lake Sedge Meadow State Natural Area in the Village of Rochester, and the Tichigan Fen and Elm Island Bog-Island Oak Woods in the Town of Waterford. In addition to these sites, the acquisition of a further 4,600 acres of lands of countywide or regional significance by both public agencies and private conservation organizations is recommended.

Primary environmental corridors within Racine County are illustrated on Map 14, and generally lie along major stream valleys, surround lakes, found in conjunction with wetlands and woodlands, and wildlife habitat areas. These corridors also contain many of the best remaining potential park sites. The primary environmental corridors are, in effect, a composite of the best remaining elements of the natural resource base of Racine County and have immeasurable environmental and recreational value. In 2010, there were approximately 37.3 square miles of primary environmental corridors, or about 11 percent of the land area in the County.

Secondary environmental corridors are typically located along small perennial and intermittent streams within the County. Secondary environmental corridors also contain a variety of resource elements, often being remnants of primary environmental corridors that have been partially converted to intensive urban or agricultural use. Secondary environmental corridors facilitate surface water drainage and maintain pockets of natural resource features. Secondary environmental corridors should also be considered for preservation as the process of development proceeds within the County, particularly when the opportunity is presented to incorporate these corridors into urban stormwater retention basins, associated drainageways, wildlife refuges, and neighborhood parks. As illustrated on Map 14, in 2010 there were approximately 11.5 square miles of secondary environmental corridors in the County, or about 3 percent of the total land area.

In addition to the primary and secondary environmental corridors, other, smaller pockets of natural resource base elements exist within the County. These pockets are isolated from the environmental corridors by urban development or agricultural uses. Even though they are separated from the environmental corridor network, these areas have important natural resource value. Since isolated natural resource areas may represent the only wildlife habitat in an area, provide good locations for local parks and nature study areas, and lend unique aesthetic character and natural diversity to an area, these areas should be protected and preserved to the extent practicable as the process of urban development proceeds within the County. These “isolated natural resource areas” should not be confused with Designated State Natural Areas, or Natural Areas of Statewide, Regional, or Local (NA-1, NA-2, or NA-3) Importance. The isolated natural resource areas shown on Map 14 encompassed approximately 13.7 square miles in 2010, or about 4 percent of the land area in the County.

Major Park and Open Space Sites

The State- and County-owned park and open space sites, as well as certain municipal and/or privately owned parks in Racine County, generally provide a wide variety of natural resource-related outdoor recreation facilities.

Classification of an area into one of these three categories is based upon consideration of several factors. These factors include the diversity of plant and animal species and community types present; the structure and integrity of the native plant or animal community; the extent of disturbance by human activity, such as logging, grazing, water level changes, and pollution; the commonness of the plant and animal communities present; any unique. It is important to note here that, because of the many interlocking and interacting relationships between living organisms and their environment, the destruction or deterioration of one element of the total environment may lead to a chain reaction of deterioration and destruction. The drainage of wetlands, for example, may have far-reaching effects, since such drainage may destroy fish spawning grounds, wildlife habitat, groundwater recharge areas, and natural filtration and floodwater storage areas in interconnected lake and stream ecosystems. The

[13] *SEWRPC Planning Report No. 42*, op. cit.

resulting deterioration of surface water quality may, in turn, lead to a deterioration of the quality of the groundwater that serves as a source of domestic, municipal, and industrial water supplies and provides a basis for low flows in rivers and streams. Similarly, the destruction of woodland cover, which may have taken a century or more to develop, may result in soil erosion and stream siltation, and in more rapid runoff and increased flooding, a well as in the destruction of wildlife habitat. Although the effects of any one of these environmental changes may not in and of itself be overwhelming, the combined effects may lead eventually to the deterioration of the underlying and supporting natural resource base, and of the overall quality of the environment for life. The need to protect and preserve the remaining environmental corridors within Racine County thus becomes apparent and critical.

Environmental corridors are subject to urban encroachment because of their desirable natural resource amenities. Unplanned or poorly planned intrusion of urban development into these corridors not only tends to destroy the sensitive lands serving residents throughout the County. In addition, these sites serve to protect natural resources and often encompass significant wetlands, woodlands, and wildlife habitat within the primary environmental corridors in the County. Sites that are larger than 100 acres in size have been termed major park and open space sites. It is important to note that, the smaller, less than 100-acre, municipal park and open space sites often provide outdoor recreation facilities such as ball diamonds and play areas, and generally serve local urban community and neighborhood areas. These smaller sites may, in some cases, also encompass important natural resources.

Pike River Restoration Project - Expansion of the Environmental Corridor while including a walking/biking trail.

Table 5

PARK AND OUTDOOR RECREATION SITES OWNED BY RACINE COUNTY: 2010

Number on Map 15	Site Name	Location[a]	Size (acres)
1	John Margis, Jr. Wildlife Area	T2N, R19E, Section 17	45
2	Fox River Parkway	T3N, R19E, Sections 2, 14, 21	38
3	W.R. Wadewitz Nature Camp	T3N, R19E, Section 3	176
4	Keucker Property	T3N, R19E, Section 10	85
5	Case Eagle Park	T3N, R19E, Section 11	245
6	Stenhouse Memorial Park	T3N, R19E, Section 13	10
7	Saller Woods	T3N, R19E, Sections 14, 15	90
8	Saller Woods Addition	T3N, R19E, Section 15	28
9	Browns Lake Golf Course	T3N, R19E, Section 28	140
10	Bushnell Park	T3N, R19E, Section 33	95
11	Fischer Memorial Park	T3N, R19E, Section 34	65
12	Beaumont Park	T3N, R20E, Section 2	1
13	Eagle Lake Park	T3N, R20E, Section 22	25
14	Evans Park	T3N, R21E, Section 12	64
15	Ives Grove Golf Links	T3N, R21E, Section 13	289
16	Skewes Memorial Park	T3N, R21E, Section 14	4
17	Old Settler's Park	T3N, R21E, Section 31	12
18	Haban Park	T3N, R22E, Section 8	41
19	Pritchard Park	T3N, R22E, Section 24	73
20	Sanders Park	T3N, R22E, Section 36	84
21	Quarry Lake Park	T3N, R23E, Section 6	39
22	Horlick Park	T3N, R23E, Section 6	15
23	Reefpoint Marina	T3N, R23E, Section 9	45
24	Belle Harbor Marina	T3N, R23E, Section 9	4
25	Racine Harbor Park	T3N, R23E, Section 9	17
26	American Eagle Manor Outlot	T4N, R19E, Section 2	17
27	Fowler's Bay North	T4N, R19E, Section 24	6
28	Fowler's Bay Outlot 1	T4N, R19E, Sections 25, 26	35
29	Whispering Hills Outlot	T4N, R20E, Section 7	43
30	Heg Park	T4N, R20E, Section 18	18
31	Koerber Property	T4N, R21E, Section 15	11
32	Cliffside Park	T4N, R23E, Sections 7, 8	223
33	Tabor Sokol Memorial Park	T4N, R23E, Section 19	1
34	Root River Parkway	T3N, R23E, Section 6 T4N, R21E, Section 1 T4N, R22E, Sections 3, 4, 5, 10, 11, 14, 23, 25 T4N, R23E, Sections 19, 30, 31	704
Total - 34 Sites		- -	2,788

[a] *U.S. Public Land Survey Township, Range, and Section.*

Source: Racine County Public Works Division and SEWRPC.

Table 6

SELECTED OUTDOOR RECREATION FACILITIES WITHIN RACINE COUNTY PARKS: 2010

Number on Map 15	Site Name	Size (acres)	Playfield	Golf Course	Picnic Area	Swimming Beach	Trails	Boat Launch	Campsites (number)
1	John Margis, Jr. Wildlife Area	45	--	--	X	--	X	--	--
2	Fox River Parkway	38	--	--	--	--	--	--	--
3	W.R. Wadewitz Nature Camp	176	--	--	--	--	X	--	9
4	Keucker Property	85	--	--	--	--	--	--	--
5	Case Eagle Park	245	X	--	--	--	X	--	--
6	Stenhouse Memorial Park	10	--	--	--	--	--	--	--
7	Saller Woods	90	--	--	--	--	X	--	--
8	Saller Woods Addition	28	--	--	--	--	X	--	--
9	Browns Lake Golf Course	140	--	X	--	--	--	--	--
10	Bushnell Park	95	X	--	X	--	X	--	--
11	Fischer Memorial Park	65	X	--	X	X	--	X	--
12	Beaumont Park	1	--	--	X	--	--	--	--
13	Eagle Lake Park	25	X	--	X	--	--	X	--
14	Evans Park	64	--	--	X	--	X	--	--
15	Ives Grove Golf Links	289	--	X	--	--	--	--	--
16	Skewes Memorial Park	4	--	--	X	--	--	--	--
17	Old Settler's Park	12	X	--	X	--	--	--	--
18	Haban Park	41	X	--	X	--	--	--	--
19	Pritchard Park	73	X	--	X	--	X	--	--
20	Sanders Park	84	X	--	X	--	X	--	25
21	Quarry Lake Park	39	--	--	X	X	--	--	--
22	Horlick Park	15	--	--	X	--	--	X	--
23	Reefpoint Marina	45	--	--	--	--	--	X	--
24	Belle Harbor Marina	4	--	--	--	--	--	--[a]	--
25	Racine Harbor Park	17	--	--	--	--	--	--	--
26	American Eagle Manor Outlot	17	--	--	--	--	--	--	--
27	Fowler's Bay North	6	--	--	--	--	--	--	--
28	Fowler's Bay Outlot 1	35	--	--	--	--	--	--	--
29	Whispering Hills Outlot	43	--	--	--	--	--	--	--
30	Heg Park	18	X	--	X	--	--	--	--
31	Koerber Property	11	X	--	--	--	--	--	--
32	Cliffside Park	223	X	--	X	--	X	--	95
33	Tabor Sokol Memorial Park	1	--	--	X	--	--	--	--
34	Root River Parkway	704	--	--	X	--	--	X[b]	--
Total - 34 Sites		2,788	11	2	17	2	10	5	129[c]

[a] *Boat launch well.*

[b] *Existing canoe launch in Root River Parkway is for non-motorized boats.*

[c] *The number of campsites include three group sites at Cliffside Park and nine group sites at W.R. Wadewitz Nature Camp.*

Source: Racine County Public Works Division and SEWRPC.

Parks and Open Space Sites Owned by Local Governments or School Districts

In addition to the County and State-owned park and open space sites in Racine County, in 2010 there was a total of 238 sites owned by local units of government or school districts. Those sites encompass 3,287 acres, or about 2 percent of the total area of the County. Local governments own 185 park and open space sites and public school districts own 53 sites. The acreage attributed to school district sites includes only those portions of the site used for recreational or open space purposes.

In 2010, there were 55 parks, outdoor recreation, and parkway sites owned by Racine County and the State of Wisconsin as shown on Map 12 and Table 6, encompassing approximately 6,600 acres, or approximately 3 percent of the total land area in the County.[14] Of the County owned park and open space sites, 8 are major parks and encompass a total of approximately 1,325 acres, 26 are comprised of other parks and outdoor recreation sites for a total of about 1,442 acres, included in these sites are two parkway sites combined for a total of about 740 acres. In addition, the Wisconsin Department of Natural Resources owns and maintains several park and open space land areas that encompass approximately 3,863 acres, which more than doubles the amount of public recreational lands within Racine County. In addition to County and State-owned parks, there are approximately 3,287 acres of park and open space sites that are owned by the Towns, Villages, or City, as well as about 2,473 acres that are privately owned.

Table 7

STATE OF WISCONSIN RECREATION AND OPEN SPACE LANDS IN RACINE COUNTY: 2010

Number on Map 15	Site Name	Location[a]	Size (acres)
	Department of Natural Resources Sites		
35	Statewide Habitat Area	T2N, R19E, Section 9	44
36	Scattered Wetland	T2N, R19E, Sections 14, 23	157
37	Karcher Marsh Wildlife Area	T2N, R19E, Sections 21, 22	279
38	Wind Lake Canal Access Site	T3N, R19E, Section 1	9
39	Honey Creek Wildlife Area	T3N, R19E, Sections 8,10,15,16,17,19, 20	1,010
40	Statewide Habitat Area	T3N, R19E, Section 34	227
41	Scattered Wetland	T3N, R20E, Section 12	81
42	Statewide Habitat Area	T3N, R20E, Section 12	10
43	Eagle Lake Fishery Area (North)	T3N, R20E, Section 21	60
44	Eagle Lake Fishery Area (South)	T3N, R20E, Section 28	37
45	Scattered Wetland	T3N, R22E, Section 10	5
46	Tichigan Wildlife Area	T4N, R19E, Sections 10,11,15,16,21,22	1,425
47	Statewide Public Access-Waubeesee Lake	T4N, R20E, Section 7	1
48	Wind Lake Fishery Area	T4N, R20E, Section 8	20
49	State Wetland	T4N, R20E, Section 11	260
50	Statewide Public Access-Wind Lake	T4N, R20E, Section 17	1
51	Scattered Wetland	T4N, R20E, Section 17	85
	Subtotal - 17 Sites	- -	3,711
	University of Wisconsin Sites		
52	Ranger Mac Fen	T2N, R19E, Section 17	33
53	Renak-Polak Maple-Beech Woods	T4N, R22E, Section 14	108
	Subtotal - 2 Sites	- -	141
	Department of Transportation Sites		
54	WisDOT Mitigation Site	T3N, R21E, Section 30	8
55	32nd Division Memorial Marker and Wayside	T4N, R22E, Section 12	3
	Subtotal - 2 Sites	- -	11
- -	Total - 21 Sites	- -	3,863

[a] *U.S. Public Land Survey Township, Range, and Section.*

Source: SEWRPC.

[14] *SEWRPC Community Assistance Planning Report No. 134, 2nd Edition,* A Park and Open Space Plan for Racine County, Wisconsin*, draft.*

Eagle Lake Park, Located in the Town of Dover