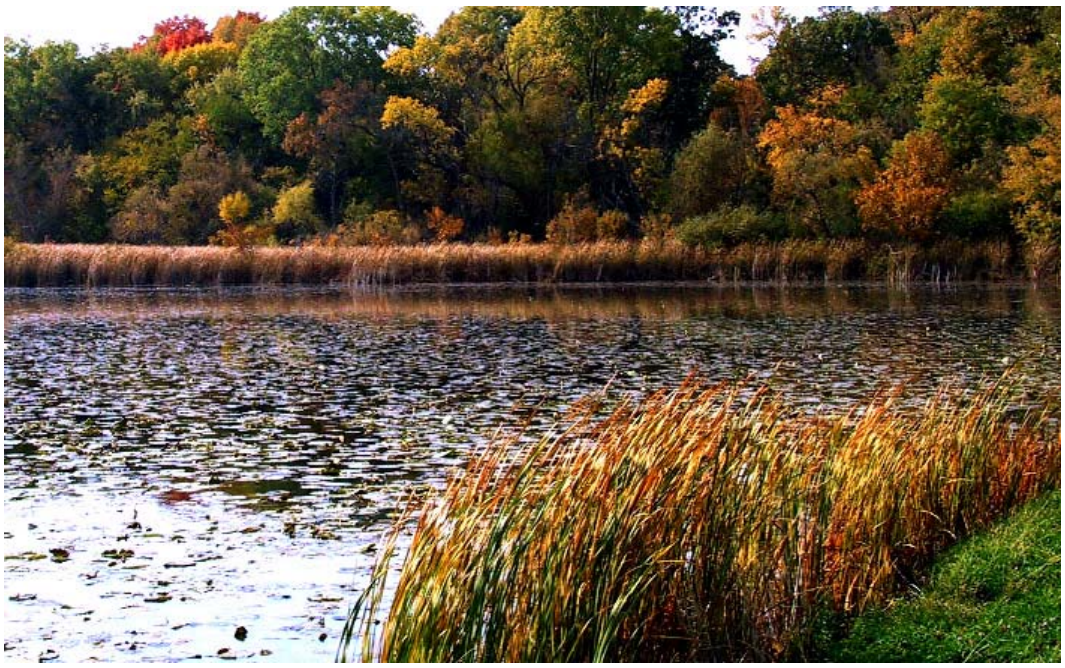

6 NATURAL AND AGRICULTURAL RESOURCES

BACKGROUND INFORMATION

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INTRODUCTION

The Natural and Agricultural Resources chapter of the City of Madison Comprehensive Plan was prepared pursuant to 66.1001 of the Wisconsin Statutes, which requires this element to include a compilation of objectives, policies, goals, maps and programs that guide the City in conserving, and promoting the effective management of natural and agricultural resources.

The element shall include a series of maps that show the City's natural and agricultural resources including groundwater, forests, productive agricultural areas, environmentally sensitive areas, threatened or endangered species, stream corridors, surface water, floodplains, wetlands, wildlife habitat, and other natural resources.

NATURAL RESOURCES EXISTING CONDITIONS

PHYSICAL SETTING

Physiography and Topography

The physiography and topography in the City of Madison is characteristic of the rolling morainal terrain in the central portion of Dane County. Madison is within the physiographic area referred to as the Yahara River Basin, a ground moraine area consisting of relatively flat or undulating glacial deposits formed by the glaciers from 10,000 to 20,000 years ago.

Hydrology

The Yahara River Lakes – Mendota, Monona, Waubesa and Kegonsa – were formed about 10,000 years ago when the last glacier deposited a thick layer of glacial till on the landscape and dammed up the large pre-glacial Yahara River Valley. The Yahara Watershed – which is the land area draining to the lakes - currently covers 359 square miles, or over one-quarter of Dane County. The Yahara River begins just north of Dane County in Columbia County and flows south to connect the four lakes, finally joining the Rock River in Rock County. The Yahara Watershed includes some of the largest remaining wetlands in Dane County.

Stream patterns in the Madison area have very low gradients. These are slow flowing streams that are usually adjoined by wetlands. Sand, silt, and muck are the predominant substrate.

Soils

Madison is in the area that was covered by the Laurentide Ice Sheet during the Wisconsin Glaciation. Most of the area is composed of sediment associated with the Horicon Member of the Holy Hill Formation. The soils formed in loess and the underlying sandy loam till, sand and gravel outwash, and stratified silt and clayey lacustrine deposits. There are areas of hydric soils, comprised of both organic material and mineral sediments, which constitute existing and former wetlands. Major management concerns have to do with erosion and sedimentation that affect water quality and long-term soil productivity.

Climate

The climate in Madison and Dane County is humid continental. Prevailing weather patterns and winds from the west yield four distinct seasons with monthly average temperatures varying from 16.7 degrees in January to 71.4 degrees in July. The annual average precipitation is 31 inches and May through October have the highest rainfall totals with 60 percent of the annual precipitation falling during this time period. Frost lasts from early December through late March or early April, and frost depth averages 18-30 inches.

Geology and Mining Activities

Surface geology in Madison consists primarily of morainal deposits from the most recent glaciation. The surface materials include sand and gravel outwash material deposited by glacial meltwater. Subsurface geology is mostly Cambrian sandstones (i.e. Eau Claire and Mount Simon formations), which were deposited 400 to 600 million years ago. These sandstones extend over 300 feet deep and are the primary source of groundwater for the City water supply. Volume I, Map 6-3, at the end of this chapter, shows the quarry and gravel resources within the City limits.

ENVIRONMENTAL FEATURES AND RESOURCES

Environmental Corridors

The Dane County Department of Planning and Development, Community Analysis and Planning Division, designates and maps environmental corridors in all of Dane County's Urban Service Areas, including the Central Urban Service Area (CUSA) (Volume I, Map 6-1, at the end of this chapter, shows the locations of environmental corridors). According to the now disbanded Dane County Regional Planning Commission's (DCRPC) formal definition, environmental corridors are, "continuous systems of open space in urban and urbanizing areas, that include environmentally sensitive lands and natural resources requiring protection from disturbance and development, and lands needed for open space and recreational use." Environmental corridor land is intended to remain generally open and undeveloped, and may not receive sanitary sewer for development purposes.

Cherokee Marsh

Environmental corridors are primarily based on drainageways and stream channels, floodplains, wetlands and 75 foot wetland buffers, woodlands, public and private recreation lands and other open space land that creates continuous open space corridors. The DCRPC has identified and mapped environmental corridors in all of the Urban Service Areas of Dane County. In Madison, environmental corridors also include lands of unique or valuable scenery or vegetation, wildlife habitat, and buffer areas that are needed between incompatible land uses. Madison's Cherokee Marsh Conservation Park is a part of the publicly owned portion of the private and publicly owned Cherokee Marsh Environmental Corridor.

At the time that land adjoining an environmental corridor is proposed for development or is added to the Urban Service Area, developers are generally required to provide more detailed field surveys delineating wetlands and 100-year floodplains. This more detailed mapping is used to refine the environmental corridors.

Surface Water and Watersheds

Watersheds are areas of land that drain into a marsh, stream, river, lake or groundwater. Two watersheds primarily cover the City of Madison: the Six Mile and Pheasant Branch Creeks and the Yahara River and Lake Monona watersheds. The Dane County Land Conservation Division (DCLCD) is running three priority watershed projects, two of which

affect Madison. The Lake Mendota priority watershed covers approximately 230 square miles in the Lower Rock River Basin and is comprised of the Yahara-Mendota and Six Mile-Pheasant Branch Creek watersheds. Pheasant Branch Creek, Dorn Creek, Six Mile Creek, Token Creek and the Yahara River are the five major Lake Mendota tributaries. Each suffers from nonpoint pollution.

The Lake Mendota Watershed is largely agricultural and the lake itself is used intensively for recreational purposes. Most of the lake's water quality problems are linked to current and past rural and urban runoff carrying sediment, nutrients and toxins. About 50 percent of the original wetlands in the watershed have been drained or filled. Several wetlands and tributaries have been identified for restoration and enhancement. The DCLCD maintains that by implementing Best Management Practices (BMPs), nutrients and sediment loading to Lake Mendota will be reduced.

The Yahara River and Lake Monona Priority Watershed Project covers approximately 100 square miles in the Lower Rock River Basin. Murphy's (Wingra) Creek, Nine Springs Creek, Starkweather Creek, Swan Creek and the Yahara River are the six major tributaries to the watershed. Starkweather, Murphy (Wingra) and Nine Springs Creek have poor habitat for fish and aquatic insects, low dissolved oxygen, low base flow, bank erosion and undesirable metals in streambed and lakebed sediments. Lakes Monona, Waubesa and Wingra suffer from nuisance algae and weed growth due to high phosphorous levels from stormwater runoff.

Over 60 percent of the urban pollution problems in the Yahara River and Lake Monona Watershed originate from sources such as construction site erosion and stormwater runoff from streets and parking lots. These sources contribute sediment, bacteria, nutrients and metals to waterbodies. Efforts will be focused on assisting communities with streambank erosion control and wetland protection. Communities are encouraged to increase enforcement of construction site erosion and runoff control ordinances, to reduce the use of road de-icers and to develop stormwater management plans. The DCLCD staff work with rural landowners to install BMPs to reduce erosion and sediment. Residents need to make an effort to reduce water pollution by reducing lawn fertilizers and pesticides and keeping leaves and lawn clippings out of the gutters, among others.

Lakes Mendota, Monona and Wingra are all partly within Madison's city limits. Table 1 below includes the surface acres, basin, lake type, maximum depth, shoreline development factor, shoreline miles and public access types for these lakes. Dane County lakes are a focal point of conservation efforts.

Table 1: City of Madison Area Lakes

Lake Name	Location (T,R,S)	Surface Acres	Basin	Lake Type	Maximum Depth	S.D.F.	Shoreline (miles)	Public Access
Mendota	7N, 9E	9,842	Lower Rock	Drainage	82 feet	1.66	22.9 miles	Boat Ramp-Public
Monona	7N, 10E	3,274	Lower Rock	Drainage	64 feet	1.54	14.4 miles	Boat Ramp-Public
Wingra	7N, 9E, Sec.27	345	Lower Rock	Drainage	21 feet	1.61	4.2 miles	Boat Ramp-Public

Source: Dane County Land Conservation Department, "Dane County Land and Water Resource Management Plan", August 2003.

Ground Water Resources

Madison relies solely upon groundwater for its drinking water supply. Public water systems, including residential, industrial, and commercial, account for 73 percent of use in Dane County. The remaining 27 percent comprise irrigation stock watering, rural domestic, and self-supplied industry.

Drainage Districts

Drainage districts are local governmental districts that cross individual property boundaries. These districts are organized to drain land for agricultural or other purposes. Those landowners benefiting from the drainage must pay assessments to cover the cost of constructing, maintaining, and repairing the drainage system.

Drainage districts drain runoff away from agricultural areas, conveying surface and subsurface water to lakes, rivers, streams, and wetlands. For this reason, they may transport sediment and other pollutants. According to the drainage district map, the Madison area includes a drainage district at Nine Springs E-Way between Lake Monona and Lake Waubesa; at several points along Starkweather Creek between Lake Monona and I-90/94; and along Starkweather Creek on the northern edge of Dane County Regional Airport. Volume I, Map 6-2, which is located at the end of this chapter, shows the minor and major drainage basins in the Madison area.

Wetlands and 100-Year Floodplains

Wetlands are areas inundated or saturated by groundwater or surface water at a frequency and duration sufficient to support vegetation that is typically adapted for life in saturated soil conditions. Volume I, Map 6-1, at the end of this chapter, shows Wisconsin Department of Natural Resources delineated wetlands in the City of Madison. Wetlands are generally associated with streams. In Madison, major wetlands areas are concentrated on the north side of Lake Mendota along the Yahara River and Six Mile Creek, around the perimeter of the Dane County Regional Airport, surrounding Lake Wingra, between Lake Waubesa and Lake Monona along Nine Springs Creek; and in an area south of Lake Waubesa. The far east side of Madison bounded by US 151 to the north and I-94 to the west includes scattered areas of wetlands.

Wetlands are regulated and protected at all governmental levels. The Wisconsin Department of Natural Resources has developed a model shoreland zoning ordinance, NR 117, which is based on NR 115 of the Wisconsin Administrative Code. NR 117 is a model ordinance that provides substantial protection measures for wetlands by requiring that villages and cities adopt shoreland-wetland zoning.

The Madison Code of Ordinances includes a Wetland District under its Special Districts chapter [Ch. 28.07 (7)]. This section of the Code establishes the purpose for Wetland District zoning which is to maintain safe and healthful conditions, to prevent and control water pollution, to protect fish spawning grounds, fish and aquatic life and wildlife habitat, to preserve shore cover and natural beauty and to control building and development in wetlands. The District also delineates permitted and prohibited uses and explains application procedures for obtaining development approval in the District. There are wetland areas concentrated around the Yahara River and Token Creek; on the north and south sides of the Dane County Regional Airport; along Nine Springs Creek; and scattered in a concentrated area northeast of Lake Waubesa. There are additional smaller wetland areas scattered in other parts of the City.

The Madison Code of Ordinances includes descriptions of flood plain areas and standards for development in Chapter 28.105 Flood Plain Districts. The F1 Floodway District consists of the channel of a stream and those portions of the flood plain adjoining the channel that are required to carry and discharge the flood waters or flood flows of any river or stream associated with the regional flood and shall include mapped floodway areas so designated on the flood plain zoning district maps. The F2 Flood Fringe District includes the floodplain area between the regional flood limits and the floodway area. The flood fringe is typically

associated with standing water rather than rapidly flowing water. The F3 General Flood Plain District consists of the land that has been, or may be hereafter, covered by floodwater during the regional flood, and encompasses both the F1 Floodway and the F2 Flood Fringe Districts.

Land within the 100-year flood plain is land that is subject to a one percent or greater chance of flooding in any given year. Land in the 100-year flood plain is shown on Volume I, Map 6-1, at the end of this chapter. Such areas tend to be concentrated along rivers and streams; in low-lying marsh areas such as on the north and south sides of the Dane County Regional Airport; and surrounding ponds and lakes.

Nielsen Pond on the UW campus.

Wetland area along Highway 30.

Cherokee Marsh

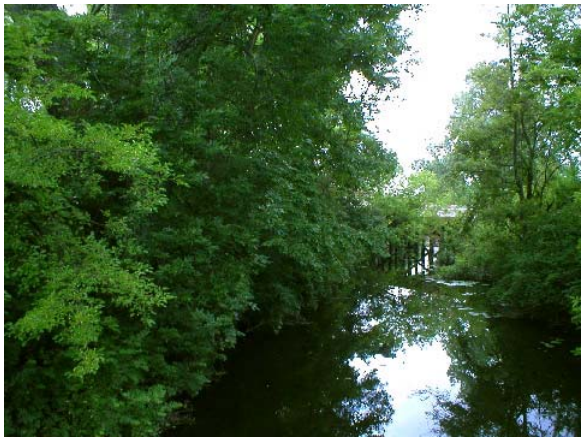
Impaired Waters (303d Waters)

The U.S. Environmental Protection Agency requires states to list impaired waters that do not meet water quality standards. The Wisconsin Department of Natural Resources is responsible for developing the impaired waters list. Table 2 below includes Madison's impaired waters with a ranking of priority for water quality improvement and protection through the Dane County Land and Water Resource Management Plan.

Table 2: City of Madison Area Impaired Waters

Water Body	Stream Mile	Basin	Impacts	Priority Rank
Token Creek	2 – 6.5	Lower Rock	Flow, habitat, sediment, temperature, turbidity, migration	High
Lake Mendota		Lower Rock	Pcb	Low
Lake Monona		Lower Rock	Mercury, pcb	Low
Starkweather Creek	0-3	Lower Rock	Dissolved oxygen, flow, habitat, toxicity, turbidity	Medium
Yahara River	8.7 – 27.7	Lower Rock	Dissolved oxygen, habitat	High
Wingra Creek	0 – 1.2	Lower Rock	Aquatic toxicity	Low

Source: Dane County Land Conservation Department, "Dane County Land and Water Resource Management Plan", August 2003.



Wingra Creek is pictured above and Starkweather Creek is in the photo to the right. Both creeks are considered to be impaired waters as indicated in Table 2.

Ecological Resources

The Wisconsin DNR maps ecological landscapes throughout the State. The City of Madison is located in the Southeast Glacial Plains Ecological Landscape. This Landscape is comprised of glacial till plains and moraines from the Wisconsin Ice Age. Soils are lime-rich tills overlain in most areas by a silt-loam loess cap. Agricultural and residential interests have significantly altered historical vegetation, and today, this landscape is primarily agricultural cropland. Remaining forests occupy only about 10 percent of the land area and they consist of maple-basswood, lowland hardwoods, and oak.

The Southeast Glacial Plains has the highest aquatic productivity of any Ecological Landscape in the state for plants, insects, invertebrates, and fish. Watershed pollution is about average according to rankings by the Wisconsin DNR, although groundwater pollution is worse than average compared to the rest of the state.

Air Resources

The Wisconsin Department of Natural Resources is the agency responsible for monitoring and responding to air quality problems through its Bureau of Air Management. The Bureau helps to ensure that communities meet the Clean Air Act National Ambient Air Quality Standards for criteria air pollutants. Criteria air pollutants are considered to be harmful to public health and the environment. Madison's air quality meets or exceeds the NAAQ standards for all criteria air pollutants. However, ozone levels are just below the NAAQ standard; therefore, it is important that Madison devise ways of reducing emissions of ozone forming pollutants. According to the Madison Department of Public Health, there have been increases in asthma and other respiratory diseases in recent years due to outdoor and indoor air pollution.

THREATENED AND ENDANGERED SPECIES AND HABITATS

Threatened and endangered species and habitats in the Madison area are identified through the Wisconsin Natural Heritage Inventory (NHI), a statewide inventory of known locations and conditions of rare and endangered species. The NHI is part of an international network that was established by the Nature Conservancy. Species and habitats in the Wisconsin NHI are categorized by county, township, and watershed. The Six Mile-Pheasant Branch Creeks and Yahara River-Lake Monona Watersheds were used to identify Madison's threatened and endangered species. Volume I, Map 6-2, at the end of this chapter, depicts the boundaries of these watersheds. These are regional watersheds defined by the Wisconsin DNR and they encompass the smaller watersheds defined by the County.

There are nearly 60 different threatened or endangered species and habitats in the Six Mile-Pheasant Branch Creeks and Yahara River-Lake Monona Watersheds, all of which are identified in Table 3 on the next page.

Individual members of the various species and habitat communities have been identified at certain times over the past 100 years or more as indicated in Table 3. If the proper habitat still exists for a particular species, there is potential that it still exists, even though it was identified in 1916 or 1889, and so forth. Threatened and endangered species that might be seen in Dane County are pictured below.

Henslow's Sparrow, Photo by Bob Gress

Banded Killifish, Photo by Conrad Schmidt

Lake Sturgeon, Photo from Shedd Aquarium

Broad-winged Skipper, Photo by Mike Reese

Table 3: Dane County Area Threatened and Endangered Species and Habitats

Species or Habitat Type	Status	Date Identified and Quantity		State Rank
		Yahara River and Lake Monona Watershed	Six Mile and Pheasant Branch Creeks Watershed	
Henslow's Sparrow	THR	1985 (1)		S2S3B:SZN
Broad-Winged Skipper (Butterfly)	SC/N		1991 (1)	S3
Dry Prairie	NA		1977 (1)	S3
Dry-Mesic Prairie	NA		1985 (3)	S2
Mesic Prairie	NA		1985 (2)	S1
Southern Dry-Mesic Forest	NA	1971 (1)	1969 (1) & 1977 (2)	S3
Calcareous Fen	NA	1987 (3)		S3
Emergent Aquatic	NA	1985 (2)	1973 (1)	S4
Lake-Shallow; Hard; Drainage	NA	1985 (2)		SU
Shrub-Carr	NA	1974 (1)	1973 (1)	S4
Southern Sedge Meadow	NA	1997 (5)	1973 (1)	S3
Springs and Springs Run Hard	NA	1985 (2)	1973 (1)	S4
Stream-Slow; Hard; Warm	NA	1974 (1)		SU
Wet-Mesic Prairie	NA	1976 (1)		S2
Lake Sturgeon	SC/H	1991 (3)	1991 (3)	S3
Lake Herring	SC/N	1980 (3)	1980 (4)	S3
Banded Killifish	SC/N	1975 (1)	1975 (4)	S3
Pugnose Shiner	THR	1900 (1)	1900 (3)	S2S3
American Eel	SC/N		1979 (1)	S1S2
Pugnose Minnow	SC/N		1964 (1)	S3
Bullfrog	SC/H	1986 (1)		S3S4
Red-Tailed Prairie Leafhopper	END		1997 (1)	S1
Blanchard's Cricket Frog	END	1957 (1)		S1
Prairie Vole	SC/N	1948 (1)	1953 (2)	S2
Western Harvest Mouse	SC/N	1968 (1)	1957 (6)	S2
Arctic Shrew	SC/N	1962 (1)		S2
Pigmy Shrew	SC/N	1961 (1)		S2
Yellow Giant Hyssop	THR	1994 (3); 1922 (5)	1995 (2); 1922 (1)	S2
Wooly Milkweed	THR	1892 (1)	1892 (1)	S1S2
Purple Milkweed	END	1960 (3)	1944 (2)	S2
Short's Rock-Cress	SC		1884 (1)	S2
Cuckoo Flower	SC	1889 (1)		S3
Hill's Thistle	THR		1988 (3)	S3
Innocence	SC	1883 (1)	1989 (1)	S3
Prairie False Dandelion	SC	1939 (2)		S2
Adder's-Tongue	SC	1961 (4)		S3
One-Flowered Broomrape	SC	1883 (1)	1883 (1)	S3
Wilcox Panic Grass	SC	1939 (1)		SH
American Fever-few	THR	1907 (1)	1907 (1)	S2
Prairie Parsley	THR	1946 (2)	1916 (1)	S2
Snowy Campion	THR	1880 (1)	1880 (1)	S2

Source: Wisconsin Natural Heritage Inventory, Wisconsin Department of Natural Resources and Nature Conservancy, 2004

Table 3: Dane County Area Threatened and Endangered Species and Habitats, continued

Species or Habitat Type	Status	Date Identified and Quantity		State Rank
		Yahara River and Lake Monona Watershed	Six Mile and Pheasant Branch Creeks Watershed	
Franklin's Ground Squirrel	SC/N		1944 (1)	S2S3
Flodman Thistle	SC		1946 (1)	S2
Hairy Wild Petunia	END		1995 (1)	S2
Rough Rattlesnake-Root	END		1989 (1)	S1
Reflexed Trillium	SC	1978 (1)		S3
Slim-Stem Small Reedgrass	SC	1947 (4)	1909 (2)	SU
Lesser Fringed Gentian	SC	1990 (2)	1935 (1)	S3
Wild Licorice	SC	1977 (2)		S2
Pale Bulrush	SC	1909 (1)	1916 (2)	SH
Glade Mallow	SC		1991 (1)	SC
Sheathed Pondweed	THR	1947 (1)		S1
Common Bog Arrow-Grass	SC	1891 (1)		S3
Hidden-Fruited Bladderwort	SC	1966 (1)		S3
Blanding's Turtle	THR	1979 (1)	1987 (3)	S3
Flodman Thistle	SC	1949 (1)		S2
Pale-Purple Coneflower	THR	1937 (1)		S2S3

Source: Wisconsin Natural Heritage Inventory, Wisconsin Department of Natural Resources and Nature Conservancy, 2004

State Element Ranks

S1 - critically imperiled in Wisconsin because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation from the state.
S2 - imperiled in Wisconsin because of rarity (six to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.
S3 - rare or uncommon in Wisconsin (21 to 100 occurrences).
SH – of historical occurrence in Wisconsin, perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an element would become SH without such a 20-year delay, if the only known occurrence were destroyed or if it had been extensively and unsuccessfully searched for.
SU – possibly in peril in the state, but their status is uncertain. More information is needed.

Status

END – endangered.
THR – threatened. Under federal law, any species or subspecies which is likely within the foreseeable future to become endangered throughout all or a significant portion of its range; under Wisconsin law, any species which appears likely, in the foreseeable future, on the basis of scientific evidence, to become endangered.
SC – special concern species appear to be threatened because they are uncommon, restricted to unique or highly specialized habitat, or vulnerable to loss for various reasons; this is a classification used by the DNR for management purposes, but which is not defined in state statute or administrative code and therefore has no regulatory significance.
SC/P – fully protected.
SC/N – no laws regulating use, possession or harvesting.
SC/H – take regulated by establishment of open/closed seasons.
SC/FL – federally protected as endangered or threatened, but not so designated by WDNR.
SC/M – fully protected by federal and state laws under the Migratory Bird Act.

AGRICULTURAL RESOURCES

FARMLAND

Within the City limits, there are 597 acres of land in agricultural use. This includes a minimal amount of commercial farmland acreage and one Community Supported Agriculture farm located on Madison's Northeast side at 500 Troy Drive. Much of the commercial farmland has been planned or approved for development. Volume I, Map 2-2, which is located at the end of Chapter 2 – Land Use, shows that there is a significant amount of productive farmland on the City's urban edge and in agricultural areas beyond the City limits.

In Dane County, there are 2,887 farms, covering 515,475 acres. From 1992 to 2002, Dane County lost 23,107 acres of farmland, yet the total number of farms in Dane County increased from 2,639 farms to 2,887 farms, and the average size of farms decreased from 204 acres to 179 acres. These figures suggest that over the ten year period, large farm lots were being subdivided and sold for residential development, and in some cases, smaller farming operations (i.e. farmettes), which led to an increase in the total number of farms.

Local agricultural production.

There are state and local farmland preservation programs in Dane County. The State of Wisconsin's Farmland preservation program assists counties in creating agricultural preservation plans. These plans lay the groundwork for towns, municipalities, and the county to develop exclusive agriculture zoning districts. Farmers may participate by signing individual, long-term agreements. The farmland preservation program provides state income tax credits to farmers who meet the program's requirements; to meet soil and water conservation standards; and to use the land for agriculture only. In Dane County, farmland preservation is achieved through farmland preservation zoning, purchase of development rights, deed restrictions and other means.

COMMUNITY GARDENING

Community gardening is important to many residents, some of whom value it as a cost-effective source of fresh produce, a source of solitude and inspiration, a form of exercise, or a way to socialize with friends and neighbors. As of 2000, there were 24 community gardens operating in the greater Madison area. These garden sites contained approximately 1,600 individual plots and a total of 13.39 acres. The assessed value in 2000 of community garden sites on property owned by the City was close to two million dollars. Just over half the gardening sites were on publicly owned land, about one-quarter were on church property and one-quarter were on privately held land.[1]

Some of Madison's community gardens.

The Common Council adopted a resolution in 1990 that called for the establishment of permanent community gardens on city-owned land including city parks. (City of Madison, Resolution 7256, 1990). The Common Council also adopted changes in the zoning ordinance to encourage inclusion of community gardens in newly platted areas of the City. In September 1997, the established a Community Gardens Advisory Committee to research appropriate and effective ways that the City could support and help create community gardens.[2] Today, the Committee on Community Gardens acts in an advisory capacity to the Mayor and the Common Council. The Committee identifies the potential roles for community gardens in neighborhood improvement efforts; identifies possible City actions to facilitate such efforts; recommends actions to implement the November 30, 1999, "Growing a Stronger Community with Community Gardens: An Action Plan for Madison", and; acts as a sounding board for citizen concerns regarding community garden issues and/or the implementation of the Action Plan.

[1]Raja, Samina. Preserving Community Gardens In a Growing Community: A Report on the Community Gardens Planning Process in Madison, Wisconsin. September 2000. *Madison Food System Project Working Paper Series MFSP-WPS-04*: Madison, WI; ppgs 15-16.
[2] *Ibid*, pg. 22.

AGRICULTURAL AND NATURAL RESOURCES PLANS AND PROGRAMS

NATURAL RESOURCES CONSERVATION SERVICE - WETLANDS RESERVE PROGRAM

The Wetlands Reserve Program (WRP) is a voluntary program to restore and protect wetlands on private property. The WRP offers landowners an opportunity to receive financial incentives to restore wetlands that have been drained for agriculture. Landowners who choose to participate in WRP may sell a conservation easement, or enter into a cost-share restoration agreement with USDA to restore and protect wetlands. The program offers landowners three options including: permanent easements, 30-year easements, and restoration cost-share agreements of a minimum 10-year duration.

CITY OF MADISON GREEN FLEET PROGRAM

The Common Council adopted a Green Fleet Program resolution for the City in January 2001. The resolution calls for a comprehensive fleet inventory, smaller and more efficient new vehicles where possible, some alternative fuel vehicles, and "driving for efficiency" training.

A Green Fleet Subcommittee of the City Environmental Action Team was formed in December 2000 to implement the program. To date, the City has purchased two Ford Focus vehicles, tested one flex-fuel vehicle (ethanol), ordered three hybrid electric vehicles (Water Utility), and organized an alternative fuel vehicle conference targeting public and private fleets in Madison and alternative fuel infrastructure (February 8, 2001).

CITY OF MADISON PARKS AND OPEN SPACE PLAN

The City of Madison Parks and Open Space Plan includes background information and data that is the foundation for the parks and open space goals, objectives, policies and implementation recommendations of Volume II. Included are inventories of existing park and open space lands and facilities, an assessment of the needs for land and recreation facility expansion or improvement, and short and long-range recommendations of actions to satisfy the most important needs.

DEPARTMENT OF NATURAL RESOURCES – COMPREHENSIVE WILDLIFE CONSERVATION PLAN

The Wisconsin Department of Natural Resources is developing a Comprehensive Wildlife Conservation Plan (CWCP), funded by the State Wildlife Grants Program (passed by Congress in 2001). The Plan focuses on species with the greatest conservation need, species indicative of the diversity and health of the state's wildlife, and low and declining populations as deemed appropriate by the state's fish and wildlife agencies. This is an opportunity to integrate management of wildlife species, build valuable partnerships, and support efforts to provide more secure, long-term funding.

The Wisconsin Department of Natural Resources must submit a completed draft Plan to the federal government for review and acceptance by October 2005. Congress requires eight elements to be included in the Comprehensive Wildlife Conservation Plan. These are:

- What's here now? Survey of the distribution and abundance of wildlife species with a focus on low and declining species that are indicators of the health of the state's wildlife.
- Health check. Locate and determine the condition of habitats that are vital to conserving priority species.
- Threats. Identify problems that may harm wildlife species and habitat, and priority research for conservation actions.
- Actions. Prescriptions and priorities for conserving wildlife species and habitats.
- Monitoring. Determine how to assess and measure the effectiveness of conservation actions.
- Coordination. Involve federal, state, local agencies and Indian tribes that manage lands or programs affecting wildlife.
- Public participation. Involve the public in developing the Plan (required by State Law).

Work on the Plan is currently focused on developing a process for determining the species of greatest conservation need. Species will be placed in four different categories including birds, fish, mammals, and herbivores. The Plan will identify the habitats where the different species occur, and then emphasize conservation of these habitats.

WISCONSIN LAND LEGACY REPORT

The purpose of the Wisconsin Land Legacy Report is to protect the places most important in meeting Wisconsin's conservation and recreation needs over the next fifty years. There are 228 legacy places identified in the Report. The sixteen ecological landscapes in the state provide the framework for the Legacy Places; Dane County is in the Southeast Glacial Plain Ecological Landscape. This landscape is home to some of the world's best examples of continental glacial activity, and it is particularly important for nesting and migrating waterfowl. The large marshes and shallow lakes provide critical feeding, nesting, and resting habitat for ducks, geese, and other marsh dwelling birds.

The Upper Yahara River and Lakes is the Legacy Place in the Southeast Glacial Plain that is perhaps most relevant to Madison's Comprehensive Plan. It includes the Yahara River and numerous tributaries, including the Yahara's origins in southern Columbia County through Lakes Mendota, Monona, Waubesa and Kegonsa. There are parts of the Upper Yahara River that support cool to cold-water fisheries. Token Creek is currently a Class II brown trout fishery, but ongoing restoration efforts are likely to establish this stream as a native brook trout stream.

The Yahara River winding through the Marquette neighborhood.

DEPARTMENT OF AGRICULTURE, TRADE & CONSUMER PROTECTION – WATER QUALITY SECTION

The Water Quality Section of the Department of Agriculture, Trade and Consumer Protection monitors, evaluates, and manages the presence of pesticides and fertilizers in groundwater. The Water Quality Section has the authority to restrict the use of any pesticide that is contaminating groundwater at levels above health-based standards per the Wisconsin Groundwater Law, Chapter 160 of the Wisconsin Statutes, and by department rule in ATCP 31, Groundwater Protection Program.