



## Rapid Watershed Assessment Lower Rock River

Rapid watershed assessments provide initial estimates of where conservation investments would best address the concerns of landowners, conservation districts, and other community organizations and stakeholders. These assessments help landowners and local leaders set priorities and determine the best actions to achieve their goals.



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## INTRODUCTION 1



The Lower Rock River Basin in south central Wisconsin drains an area of 1,857 square miles, all of which lies within the glaciated portion of the state in the southeast upland soil-landform region. The basin is comprised of 15 watersheds, which range in land use from rural-agricultural to intensely urbanized. These 15 watersheds include larger, slow-moving, turbid water bodies, such as the Yahara River, as well as cold water trout streams, such as the Rutland Branch of Badfish Creek and Spring Creek in the Badfish Creek Watershed. Collectively, these water bodies drain through the mouth of the Wisconsin portion of the Lower Rock into northwestern Illinois, where the Rock River drains into the Mississippi River.

Prior to European settlement, the basin contained thousands of acres of wetlands supporting diverse ecosystems, ranging from shallow wet meadows and prairies, to lowland wet forests, to deep water marshes. A large, undetermined portion of original wetland acreage has been converted to agriculture, urban and transportation development, or other uses by filling, ditching and draining.

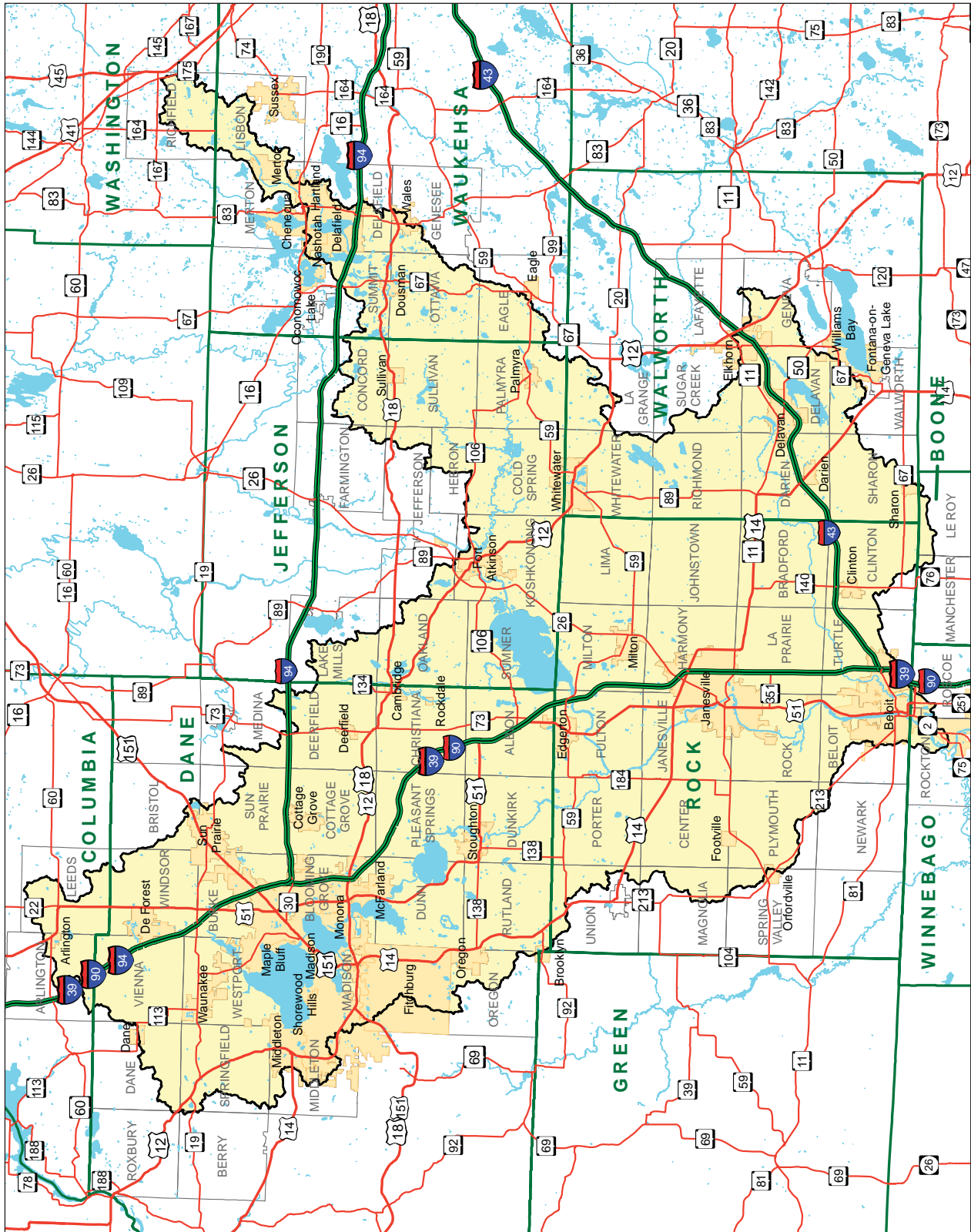
## PHYSICAL DESCRIPTION

The Lower Rock River basin is bounded at Fort Atkinson on the north, and the Wisconsin-Illinois state line in Beloit on the south. Major tributaries include: the Bark River in Jefferson, Waukesha and Washington counties; the Yahara River in Rock, Dane and Columbia counties; and Turtle Creek in Walworth and Rock counties. Small and large lakes including Mendota, Monona, Koshkonong, Waubesa, Wingra, Kegonsa, Whitewater, and Delavan dot the basin's morainal terrain. Most of these lakes are eutrophic and suffer from problems that impair water quality and recreational use. A cluster of high quality lakes exists in the Bark River Watershed and are under intense development pressure.

The basin covers about the eastern two-thirds of Rock County, 40 percent of Walworth County (western edge), the southern half of Jefferson County, about half of Dane County (southeastern), and parts of Waukesha, Washington, and Columbia counties. The major cities include Madison, Janesville, Beloit, Fitchburg, Middleton, Sun Prairie, Whitewater and Fort Atkinson.

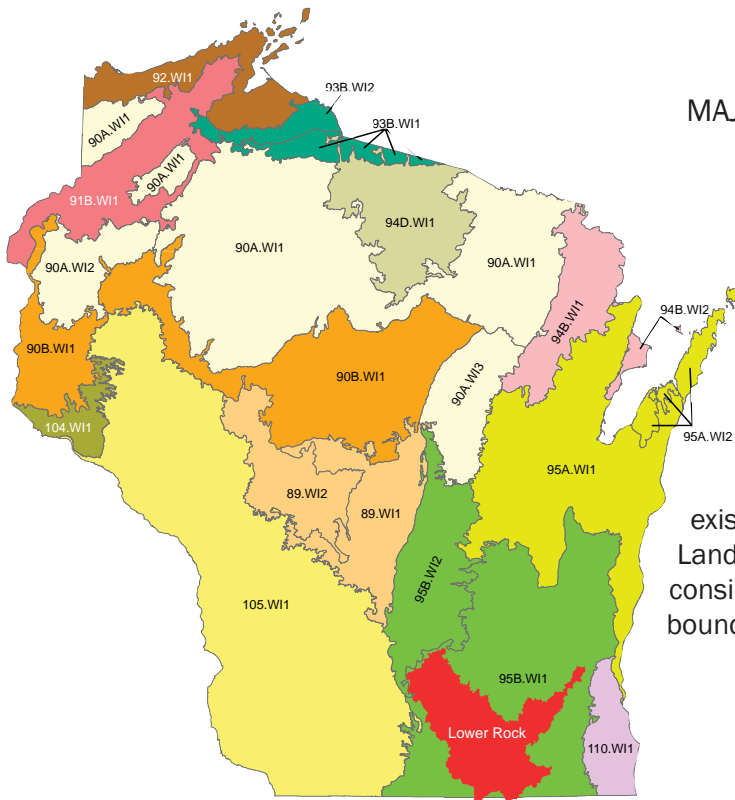
While urban areas continue to grow particularly in and around Madison, Janesville, Beloit and Delafield-Hartland the predominant land use in the basin remains agriculture. Agricultural lands in this basin are among the most productive in the state.

The primary sources of the basin's water quality problems are urban and rural polluted runoff. Hydrologic modifications such as dams, stream straightening, and the ditching and draining of wetlands are significant contributors to lower water quality in the basin. Numerous low-head dams trap nutrient-rich sediment, effectively reducing the stream's depth, increasing water temperature, and precipitating algal problems.



ACREAGE IN LOWER ROCK RIVER WATERSHED

NAME	COUNTY ACRES IN HUC	% OF HUC FROM COUNTY	% OF COUNTY IN HUC	COUNTY TOTAL ACRES
DANE	409564	35	51.7	791852
ROCK	345182	29	74.3	464369
JEFFERSON	172969	15	46.4	372739
WALWORTH	136799	12	37.1	368720
WAUKESHA	72276	6	19.5	371451
COLUMBIA	19090	2	3.7	509123
WASHINGTON	9095	1	3.3	278753
WINNEBAGO, IL	4324	0	1.3	332188
BOONE, IL	2620	0	1.5	180291
GREEN	12	0	0	373817
TOTAL	1171931			



MAJOR LAND RESOURCE AREAS <sup>2</sup>.

COMMON RESOURCE AREAS

Common Resource Area delineations are defined as a geographical areas where resource concerns, problems and treatment needs are similar. Common Resource areas are a subdivision of an existing Major Land Resource Area (MLRA). Landscape conditions, soil, climate and human considerations are used to determine the boundary of Common Resource Areas.

95B.WI1, SOUTHERN WISCONSIN AND NORTHERN ILLINOIS TILL PLAIN

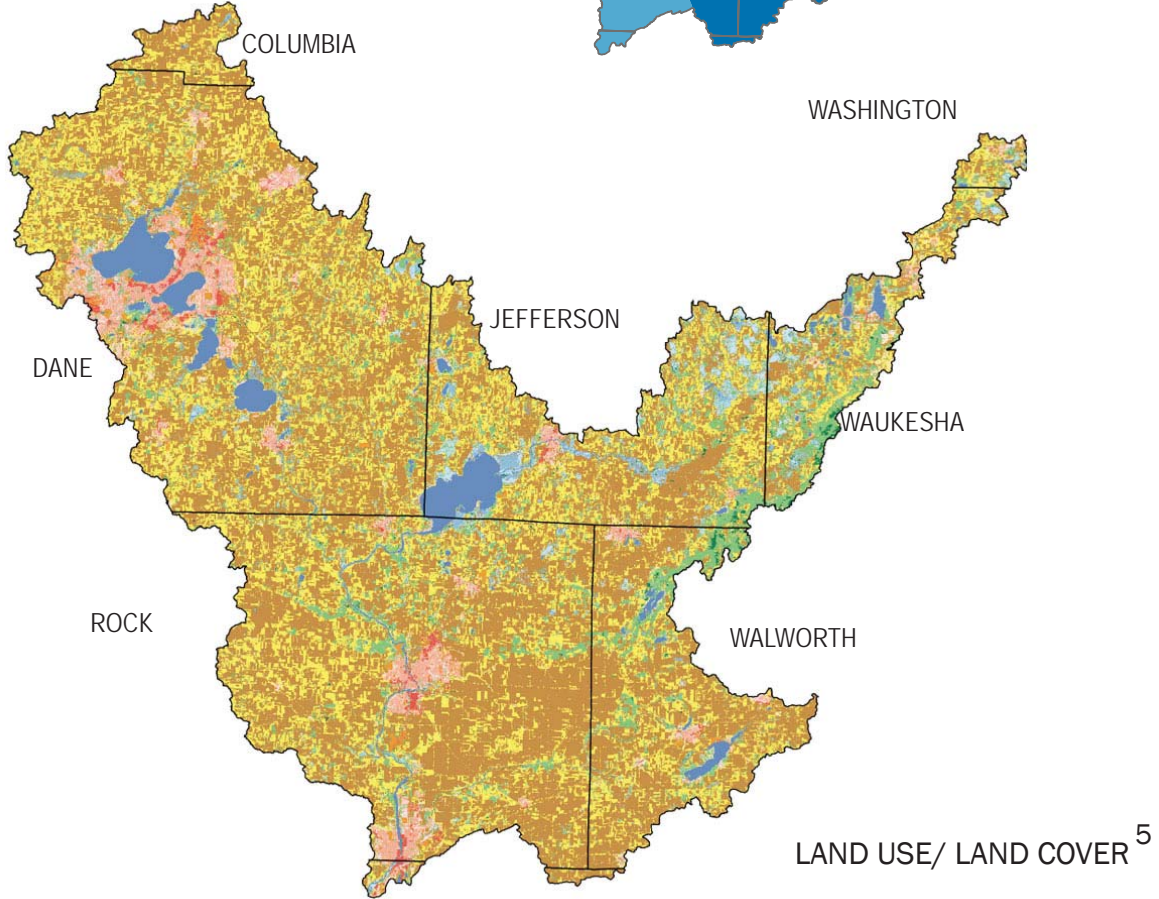
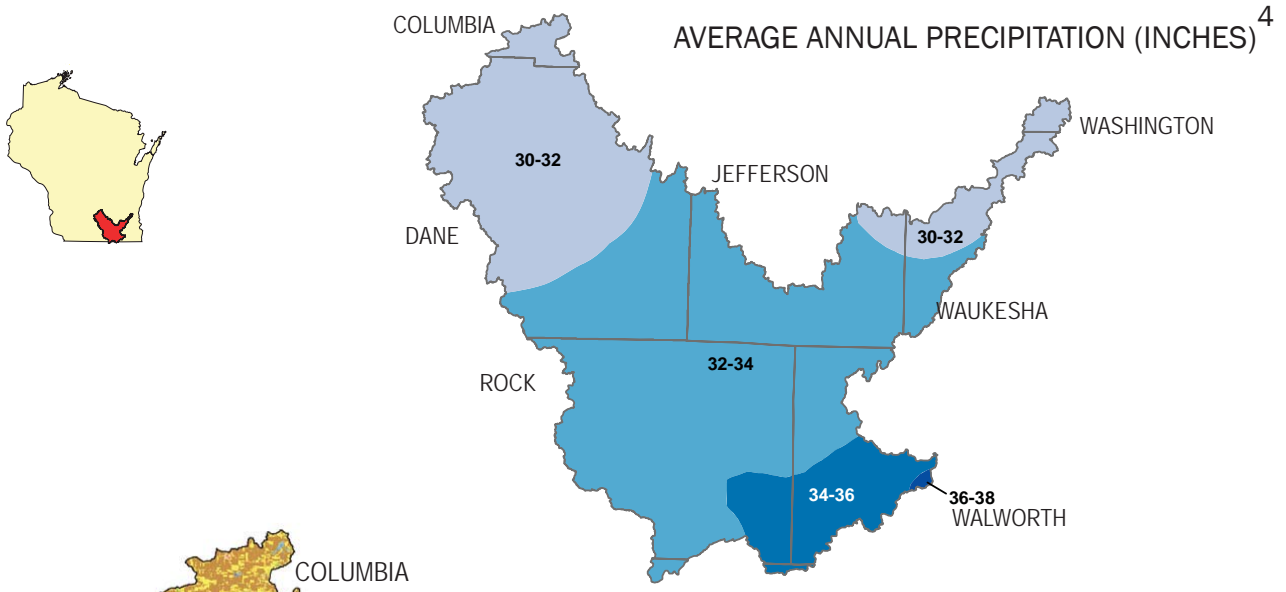
Nearly level to strongly sloping till plain with prominent drumlins. Well drained silty and loamy soils with poorly grained organic soils in the depressions. Mostly cropland with a mix of livestock and cash grain enterprises. Grazing land and scattered deciduous forest, lakes and marshes are also present. Primary resource concerns include cropland and construction site erosion, surface water quality and wetland habitat and protection.

ELEVATION MAP<sup>3.</sup>



Feet	Meters
>1400	>427
1300-1399	397-427
1200-1299	367-396
1100-1199	336-366
1000-1099	306-335
900-999	275-305
800-899	245-274
700-799	214-244
601-699	183-213
<600	<183

Elevation



	Acres	Percent		Acres	Percent
Pasture Hay	296,967	25.34	Low Intensity Residential	26,456	2.26
Deciduous Forest	100,727	8.59	High Intensity Residential	23,932	2.04
Row Crops	598,592	51.08	Evergreen Forest	6,430	0.5
Open Water	43,949	3.75	Mixed Forest	1,240	0.11
Woody Wetlands	23,778	2.03	Small Grains	745	0.06
Emergent Herbaceous Wetlands	12,466	1.06	Urban / Recreational Grasses	15,308	1.31
Commercial/Industrial / Transport	11,864	1.01	Quarries / Strip Mines, Gravel Pits	26,065	1.02
Grasslands / Herbaceous	8,928	0.76	Bare Rock / Sand / Clay	24	0
			<b>Total Acres</b>	<b>1,171,975</b>	



ASSESSMENT OF WATER - LOWER ROCK RIVER WATERSHED <sup>6</sup>



For information on specific subwatersheds, 303(d) or Exceptional/Outstanding Resource Waters (ERW/ORW):  
<http://dnr.wi.gov/org/water/wm/wqs/303d/faqs.html>  
<http://dnr.wi.gov/org/gmu/gpsp/gpbasin/>  
<http://oaspub.eps.gov/tmdl/>



## ASSESSMENT OF WATERS 6

Section 303(d) of the Clean Water Act states that water bodies that are not meeting their designated uses (fishing, swimming), due to pollutants, must be placed on this list. The 303(d) impaired Waters List is updated every two years. Wisconsin is required to develop TMDLs, Total Maximum Daily Loads, for water bodies on this list. Exceptional Resource Waters (ERW) provide valuable fisheries, hydrologically or geologically unique features, outstanding recreational opportunities, unique environmental settings, and which are not significantly impacted by human activities may be classified as exceptional resource waters. Outstanding Resource waters (ORW) and ERW differ in that ORW do not have an associated point source discharge, where ERWs do.

303(d) Waters	SEDIMENT	DEGRADED HABITAT	DISSOLVED OXYGEN	MER-CURY	PHOSPHOROUS	PCBS
BADFISH CREEK IN DANE CO.						X
BARK RIVER			X		X	
BLACKHAWK CREEK	X	X				
CLEAR LAKE				X		
LAKE KOSHKONONG	X	X	X		X	
LAKE MENDOTA						X
LAKE MONONA				X		X
LAKE WAUBESA				X		
MARKHAM CREEK	X	X				
PHEASANT BRANCH CREEK	X	X	X		X	
ROCK RIVER (LAKE KOSHKONONG TO STATE LINE)	X		X		X	X
ROCK RIVER (WATERTOWN TO LAKE KOSHKONONG)			X		X	
SCUPPERNONG RIVER						
SPRING (DORN) CREEK	X	X				
SPRING CREEK	X	X			X	
STARKWEATHER CREEK	X	X	X			
STEEL BROOK	X	X	X		X	
STEVENS CREEK	X	X				
TURTLE CREEK (COMUS TO COUNTY LINE)			X		X	
WINGRA CREEK						
YAHARA RIVER (L. KEGONSA TO ROCK RIVER)	X	X	X		X	
EXCEPTIONAL RESOURCE WATERS						
ALLEN CREEK (JEFFERSON, ROCK)						
BASS CREEK (ROCK)						
LITTLE TURTLE CREEK (ROCK)						
RUTLAND BRANCH (DANE)						
SIX MILE CREEK (DANE)						
SPRING BROOK (ROCK)						
TURTLE CREEK (ROCK)						
UNNAMED CREEK T2N R14E S31 (ROCK)						
OUTSTANDING RESOURCE WATERS						
BLUFF CREEK (WALWORTH)						

## SOILS<sup>7</sup>

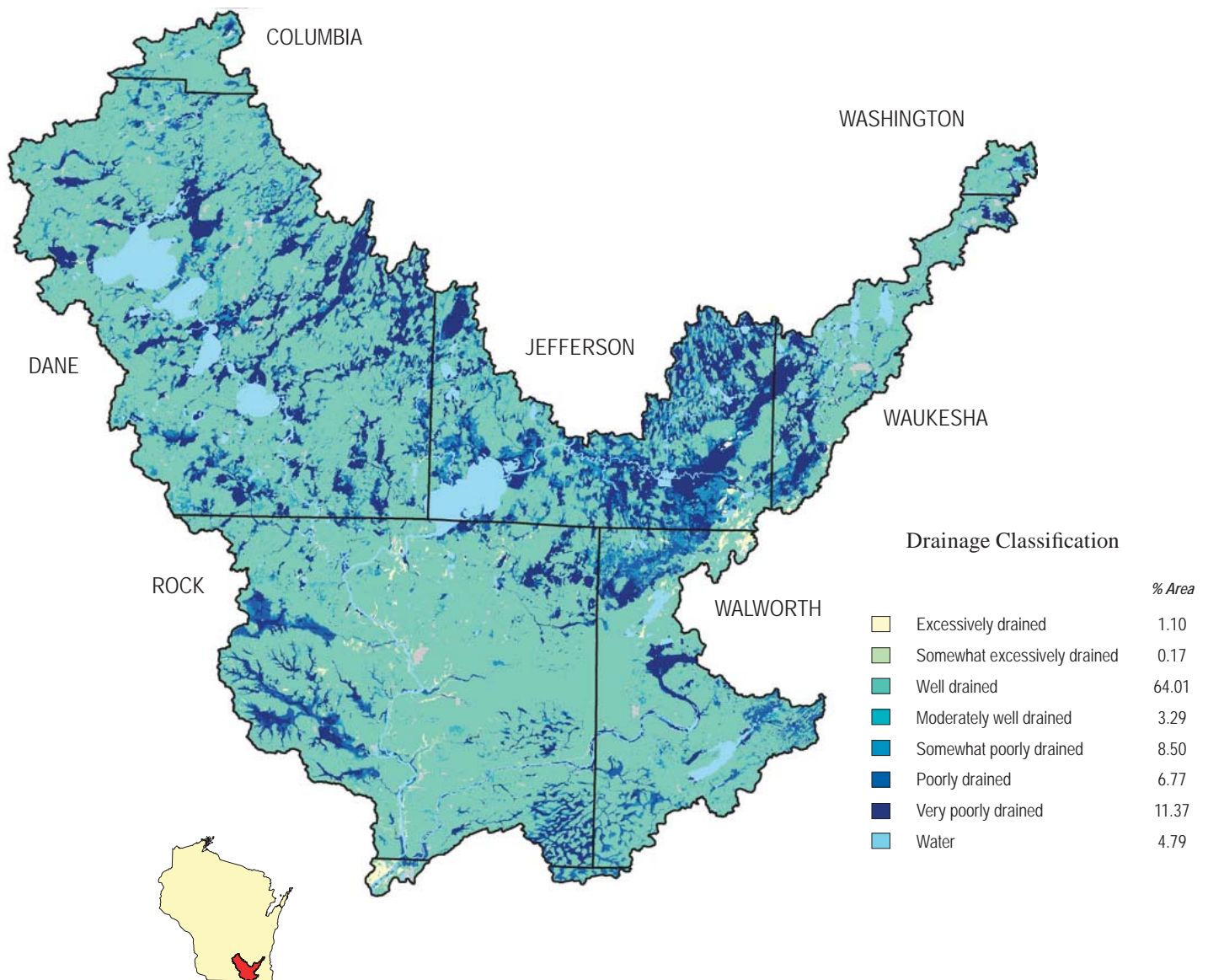
The soils in this watershed have formed mainly in wind blown silty or loess deposits overlying glacial till. There is a small percentage of the watershed where the loess does overly outwash. Loess overlying bedrock can also be found throughout the watershed however it is scattered and is not predictable at this time. The Niagara Escarpment is a prominent physiographic feature in the eastern part of the watershed. This area has one of the greatest concentrations of drumlins in the world. These drumlins are oval shaped and are often called whalebacks.

The initial Soil Survey of Wisconsin was completed in May of 2006. Soil Survey work in Wisconsin began in the early 1900s shortly after the inception of the National Cooperative Soil Survey. Early soil surveys produced were a joint effort between federal and state agencies. During the 1960s, 1970s, and 1980s, soil surveys depended on county cost-share monies and completed work projects varied around the state. Because of this partnership approach and because soil survey methods and concepts have improved over time, incompatibilities exist between counties.

The next phase of the Wisconsin Soil Survey will work to resolve inconsistencies brought on by the county based soil survey approach by implementing the Major Land Resource Area soil survey approach. By typifying soil series and mapunit concepts across similar geographic areas instead of by political boundaries, the inconsistencies between counties that exist now will be resolved. Updated soil survey information will be continually made available and can be obtained through the Web Soil Survey at <http://websoilsurvey.nrcs.usda.gov> for official and current USDA soil information as viewable maps and tables. Visit the Soil Data Mart at <http://soildatamart.usda.gov> to download SSURGO certified soil tabular and spatial data.

### DRAINAGE CLASSIFICATION

Drainage class (natural) refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the “Soil Survey Manual.”

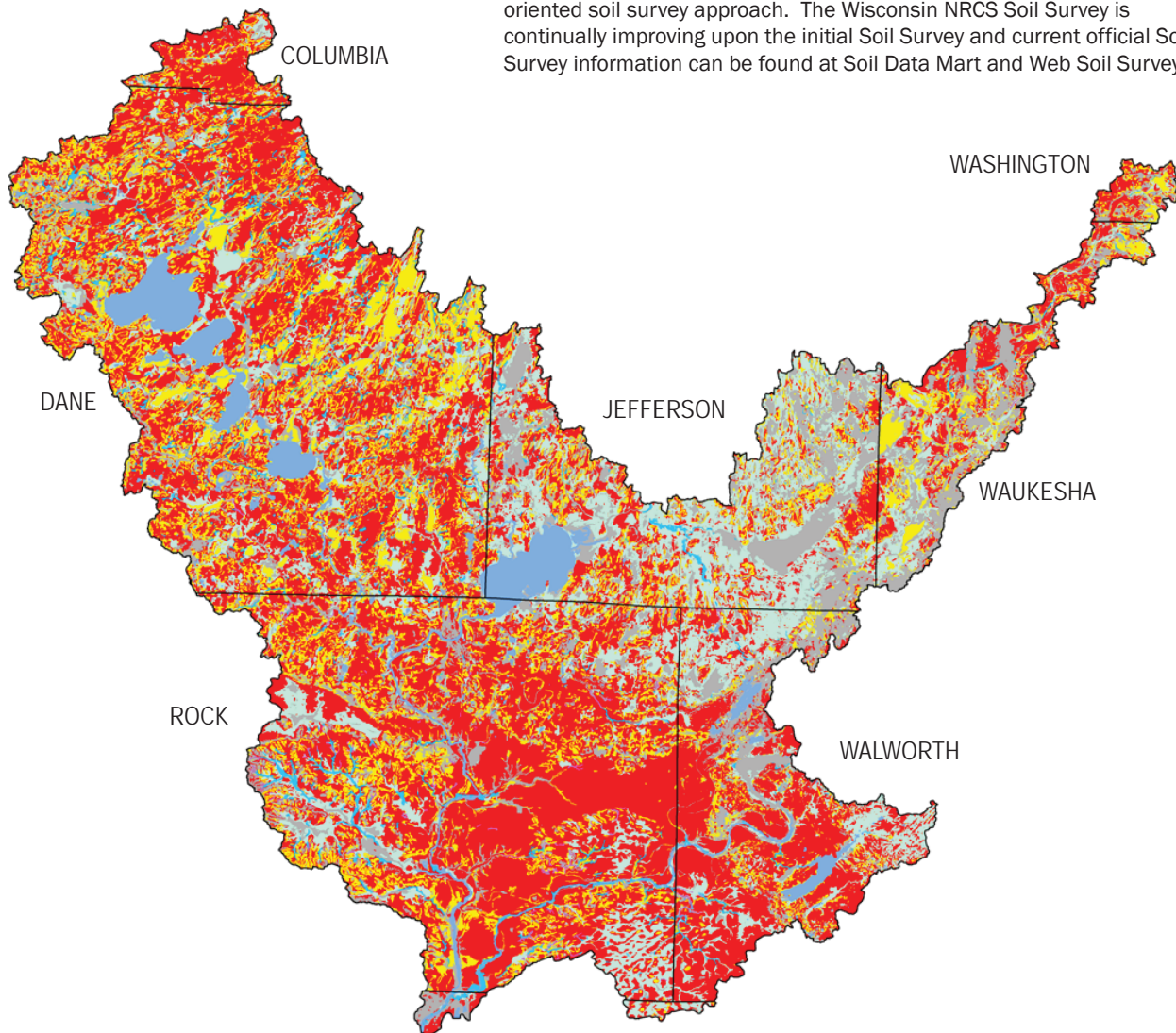









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### FARMLAND CLASSIFICATION

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the Federal Register, Vol. 43, No 21, January 31, 1978.

Some inconsistencies occur at county lines. This is a result of the county oriented soil survey approach. The Wisconsin NRCS Soil Survey is continually improving upon the initial Soil Survey and current official Soil Survey information can be found at Soil Data Mart and Web Soil Survey



	Acres	Percent
 All areas are prime farmland	579,736	49
 Farmland of statewide importance	193,487	17
 Prime farmland if drained	153,894	13
 Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	20,953	2
 Prime farmland if protected from flooding or not frequently flooded during the growing season	2,790	0
 Not Prime farmland	221,058	19
 Water		

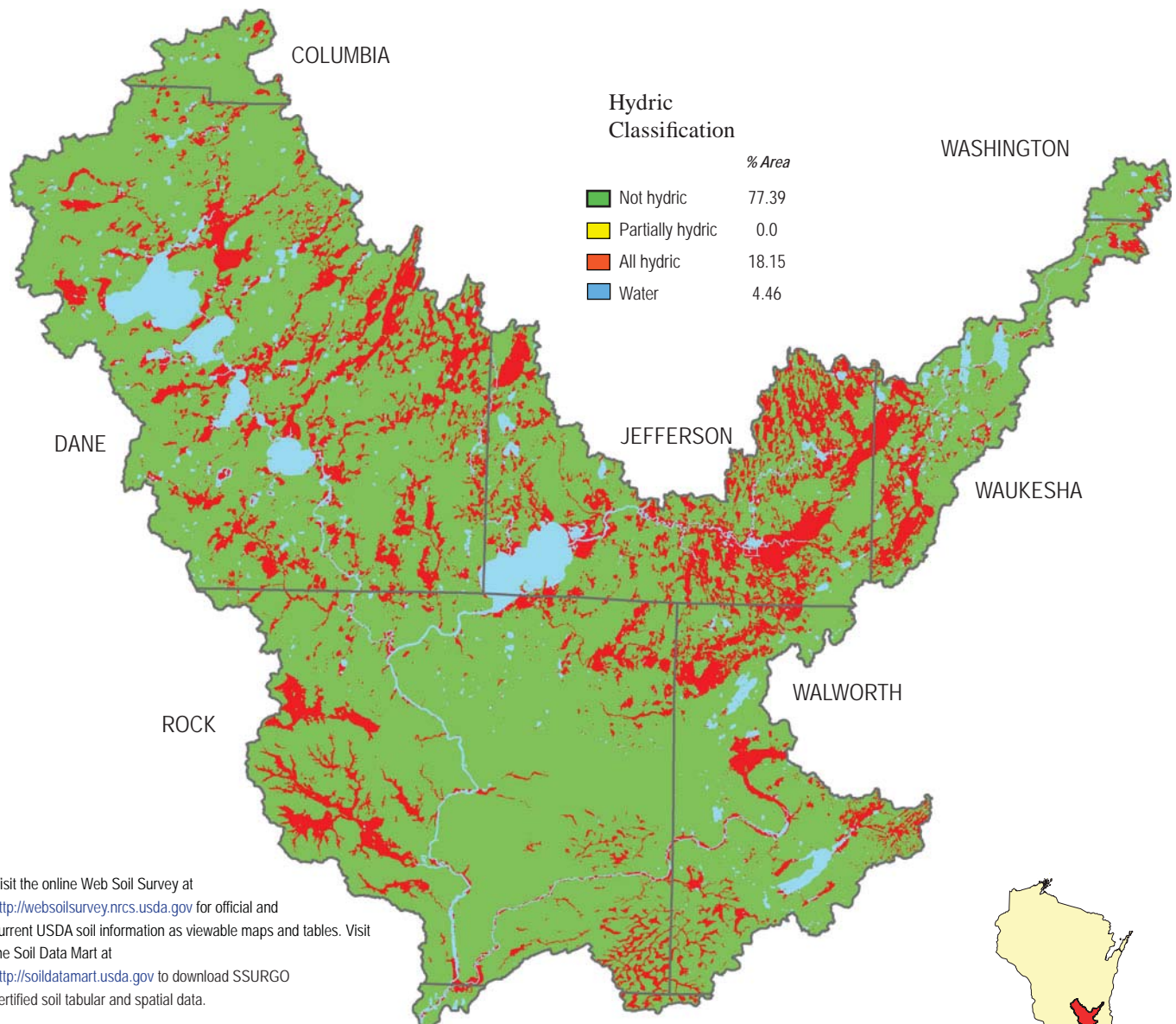


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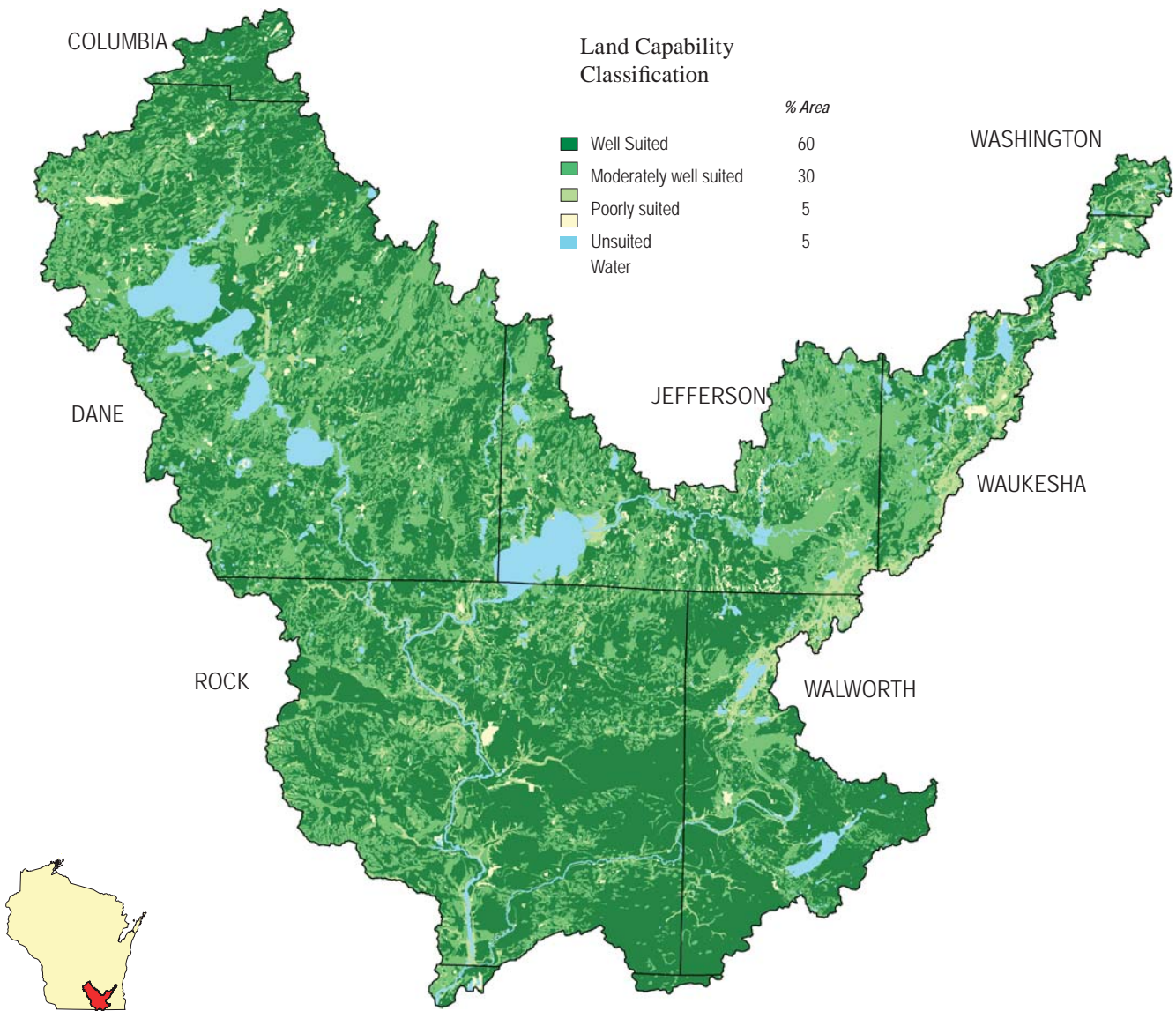
## HYDRIC SOILS

This rating provides an indication of the proportion of the map unit that meets criteria for hydric soils. Map units that are dominantly made up of hydric soils may have small areas, or inclusions of non-hydric soils in the higher positions on the landform, and map units dominantly made up of non-hydric soils may have inclusions of hydric soils in the lower positions on the landform.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation. If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make on site determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).



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### LAND CAPABILITY CLASSIFICATION

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive land forming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

## RESOURCE CONCERNS

The primary water quality and quantity problems include altered stream and groundwater hydrology; loss of aquatic and riparian habitat, sedimentation of streams, natural lakes and millponds, pesticide and nitrate contamination of groundwater, and increased quantity and reduced quality of stormwater runoff

## WATERSHED ASSESSMENT

To assess a watershed's agricultural nonpoint pollution potential, a model was used to generate a watershed assessment score relative to other 8-digit watersheds in Wisconsin. Factors used in the model include acres of cropland, acres of highly erodible land (HEL), and the number of animal units in the watershed. Scores ranged from 0.0 (lowest conservation need) to 24.2 (highest conservation need). The scores may be useful in determining funding allocations on a watershed basis for agricultural nonpoint pollution control initiatives. The model does not attempt to measure pollution levels and does not reflect pollution potential from point sources of pollution or other nonpoint pollution sources beyond the above criteria.

The watershed assessment score for the Lower Rock River Watershed is 13.6.

## PRS AND OTHER DATA

The following table is a product of the NRCS Performance Results System (PRS) and reflects progress made over the past several years on several key areas of conservation. The PRS provides support for reporting the development and delivery of conservation programs, analyzing and reporting progress, and management applications by NRCS and conservation partners. The public can generate additional reports by visiting the following link: <http://ias.sc.egov.usda.gov/prsreport2006/>

### PRS PERFORMANCE MEASURES <sup>8</sup>

	FY99	FY00	FY01	FY02	FY03	FY04	FY05	TOTAL
TOTAL CONSERVATION SYSTEMS PLANNED (ACRES)	773	22,040	24,099	27,114	38,934	N/A	20,624	133,583
TOTAL CONSERVATION SYSTEMS APPLIED (ACRES)	583	18,129	18,215	27,114	46,831	N/A	18,959	129,830
<b>Conservation Practices</b>								
TOTAL WASTE MANAGEMENT (313) (NUMBERS)	0	11	3	3	2	0	2	22
RIPARIAN FOREST BUFFERS (391) (ACRES)	1	42	2	25	42	1	8	121
EROSION CONTROL TOTAL SOIL SAVED (TONS/YEAR)	108	50,279	46,832	44,522	61,180	N/A	N/A	202,922
TOTAL NUTRIENT MANAGEMENT (590) (ACRES)	0	13,769	15,892	18,033	17,427	9,990	7,691	82,802
PEST MANAGEMENT SYSTEMS APPLIED (595A) (ACRES)	0	0	201	401	927	19	19	1,567
PRESCRIBED GRAZING 528A (ACRES)	0	0	59	306	532	155	73	1,124
TREE & SHRUB ESTABLISHMENT (612) (ACRES)	59	248	253	142	265	24	44	1,034
RESIDUE MANAGEMENT (329A-C) (ACRES)	17	12,838	11,924	11,521	14,259	9,876	8,842	69,276
TOTAL WILDLIFE HABITAT (644 - 645) (ACRES)	140	3,156	2,652	1,817	7,416	1,607	1,312	18,100
TOTAL WETLANDS CREATED, RESTORED, OR ENHANCED (ACRES)	56	885	377	679	713	877	795	4,382
<b>Acres Enrolled in Farmbill Programs</b>								
CONSERVATION RESERVE PROGRAM	553	7,166	7,675	1,944	3,120	N/A	346	20,803
WETLANDS RESERVE PROGRAM	0	3,990	648	363	335	N/A	819	6,154
ENVIRONMENTAL QUALITY INCENTIVES PROGRAM	0	5,366	5,414	9,150	13,179	N/A	7,897	41,007
WILDLIFE HABITAT INCENTIVE PROGRAM	0	4,044	4,549	6	9	N/A	60	8,668
FARMLAND PROTECTION PROGRAM	0	0	1,415	1,063	0	N/A	0	2,479

2002 Ag Census Data		COLUMBIA	DANE	GREEN	JEFFERSON	ROCK	WALWORTH	WASHINGTON	WAUKESHA	BOONE, IL	WINNEBAGO, IL	TOTAL
	FARMS (NUMBER)	56	1,493	0	659	1,136	367	28	149	7	9	3,904
	LAND IN FARMS (ACRES)	12,890	266,501	3	115,032	255,416	81,435	4,284	19,189	2,204	2,489	759,442
	TOTAL CROPLAND (ACRES)	9,789	214,715	2	90,187	224,221	68,943	3,467	15,737	2,028	2,274	631,363
	IRRIGATED LAND (ACRES)	58	2,726	0	4,486	12,109	686	25	150	24	13	20,276
	PRINCIPAL OPERATOR BY PRIMARY OCCUPATION - FARMING (NUMBER)	34	833	0	363	640	208	18	75	5	6	2,181
Farms by Size	FARMS BY SIZE - 1 TO 10 ACRES	4	158	0	42	132	46	2	23	1	1	410
	FARMS BY SIZE - 11 TO 49 ACRES	12	445	0	202	383	105	9	64	2	3	1,225
	FARMS BY SIZE - 50 TO 179 ACRES	21	492	0	253	308	109	10	40	1	2	1,236
	FARMS BY SIZE - 180 TO 499 ACRES	13	284	0	120	196	66	5	14	2	2	701
	FARMS BY SIZE - 500 TO 999 ACRES	4	74	0	24	65	22	1	5	1	1	197
	FARMS BY SIZE - 1,000 ACRES OR MORE	2	39	0	18	51	20	1	4	1	1	135
Livestock and Poultry	LIVESTOCK AND POULTRY - CATTLE AND CALVES INVENTORY (FARMS)	23	527	0	239	406	124	12	37	2	3	1,373
	LIVESTOCK AND POULTRY - CATTLE AND CALVES INVENTORY - BEEF COWS (FARMS)	8	147	0	69	155	42	3	18	1	1	444
	LIVESTOCK AND POULTRY - CATTLE AND CALVES INVENTORY - MILK COWS (FARMS)	8	224	0	91	122	49	6	10	1	1	511
	LIVESTOCK AND POULTRY - HOGS AND PIGS INVENTORY (FARMS)	3	43	0	35	55	18	1	6	1	1	163
	LIVESTOCK AND POULTRY - SHEEP AND LAMBS INVENTORY (FARMS)	3	54	0	27	56	22	1	9	0	1	174
	LIVESTOCK AND POULTRY - LAYERS 20 WEEKS OLD AND OLDER INVENTORY (FARMS)	3	58	0	50	53	27	2	8	0	0	202
	LIVESTOCK AND POULTRY - BROILERS AND OTHER MEAT-TYPE CHICKENS SOLD (FARMS)	1	13	0	10	14	7	0	3	0	0	49
Selected Crops Harvested	SELECTED CROPS HARVESTED - CORN FOR GRAIN (ACRES)	4,472	81,877	1	32,742	96,059	29,949	919	5,171	959	1,111	253,259
	SELECTED CROPS HARVESTED - CORN FOR SILAGE OR GREENCHOP (ACRES)	365	13,128	0	4,430	6,920	3,586	286	445	31	24	29,213
	SELECTED CROPS HARVESTED - WHEAT FOR GRAIN, ALL (ACRES)	233	3,494	0	1,940	3,933	1,330	146	358	24	43	11,503
	SELECTED CROPS HARVESTED - WHEAT FOR GRAIN, ALL - WINTER WHEAT FOR GRAIN (ACRES)	231	0	0	0	3,933	1,311	0	353	24	43	5,895
	SELECTED CROPS HARVESTED - WHEAT FOR GRAIN, ALL - SPRING WHEAT FOR GRAIN (ACRES)	3	0	0	0	0	20	0	5	0	0	27
	SELECTED CROPS HARVESTED - OATS FOR GRAIN (ACRES)	122	2,564	0	904	1,320	317	134	262	9	15	5,648
	SELECTED CROPS HARVESTED - BARLEY FOR GRAIN (ACRES)	7	119	0	55	23	53	25	8	0	0	289
	SELECTED CROPS HARVESTED - SOY-BEANS FOR BEANS (ACRES)	1,913	45,075	0	22,876	70,440	21,064	683	4,460	826	800	168,137
	SELECTED CROPS HARVESTED - FORAGE - LAND USED FOR ALL HAY AND ALL HAY-LAGE, GRASS SILAGE, AND GREENCHOP (SEE TEXT) (ACRES)	1,549	40,462	1	13,825	21,662	7,540	943	2,812	91	150	89,036
	SELECTED CROPS HARVESTED - VEGETABLES HARVESTED FOR SALE (SEE TEXT) (ACRES)	166	1,297	0	1,050	5,556	879	71	209	3	4	9,235
	SELECTED CROPS HARVESTED - LAND IN ORCHARDS (ACRES)	2	89	0	33	117	36	2	20	0	1	300



URBAN POPULATION <sup>11</sup>

CENSUS AND SOCIAL DATA <sup>9</sup>  
(RELEVANT)

There are 3904 farms in the watershed, covering a total of 759,442 acres. Average farm size in the watershed is 194 acres compared to a statewide average of 201 acres in Wisconsin. Please refer to the tables below for more detailed information or visit the web site of the Wisconsin Office of the National Agricultural Statistics Service at: [http://www.nass.usda.gov/Statistics\\_by\\_State/Wisconsin/index.asp](http://www.nass.usda.gov/Statistics_by_State/Wisconsin/index.asp)

POPULATION ETHNICITY <sup>10</sup>

Total Population = 595,636  
 Urban population = 494,915  
 Rural Population = 100,729  
 White alone = 536,093  
 Hispanic or Latino = 23,884  
 Two or more races = 9,768  
 Black or African American alone = 22,134  
 Some other race alone = 10,435  
 American Indian and Alaska Native alone = 2,261  
 Asian Alone = 14,679  
 Native Hawaiian and Other Pacific Islander alone = 334

NAME	1990	2000	2004	MEDIAN INCOME*
CHENEQUA	601	583	594	163,428
SHOREWOOD HILLS	1,680	1,732	1,671	122,879
OCONOMOWOC LAKE	493	564	638	112,760
MAPLE BLUFF	1,352	1,358	1,297	111,400
NASHOTAH	567	1,266	1,378	77,406
WALES	2,471	2,523	2,610	75,000
MERTON	1,199	1,926	2,643	71,509
COTTAGE GROVE	1,131	4,059	5,271	66,628
MCFARLAND	5,232	6,416	7,383	62,969
DELAFIELD	5,347	6,472	6,767	61,938
SUSSEX	5,039	8,828	9,812	60,283
WAUNAKEE	5,897	8,995	10,360	59,225
HARTLAND	6,906	7,905	8,672	58,359
EAGLE	1,182	1,707	1,769	58,207
OREGON	4,519	7,514	8,493	56,584
DE FOREST	4,882	7,368	8,438	55,369
FONTANA-ON-GENEVA LAKE	1,635	1,754	1,951	54,211
CAMBRIDGE	963	1,101	1,227	52,039
ARLINGTON	440	484	608	51,750
DANE	621	799	896	51,667
SUN PRAIRIE	15,333	20,369	25,392	51,345
MIDDLETON	13,289	15,770	15,816	50,786
WILLIAMS BAY	2,108	2,415	2,668	50,450
DEERFIELD	1,617	1,971	2,202	50,439
FITCHBURG	15,648	20,501	22,040	50,433
BROOKLYN	789	916	1,148	48,056
MONONA	8,637	8,018	7,716	48,034
FOOTVILLE	764	788	757	47,768
STOUGHTON	8,786	12,354	12,646	47,633
DOUSMAN	1,277	1,584	1,885	46,944
ORFORDVILLE	1,219	1,272	1,336	46,875
DARIEN	1,158	1,572	1,635	46,800
CLINTON	1,849	2,162	3,124	45,987
JANESVILLE	52,133	59,498	61,962	45,961
PALMYRA	1,539	1,766	1,763	45,521
EDGERTON	4,254	4,933	5,102	44,684
FORT ATKINSON	10,227	11,621	11,949	43,807
SULLIVAN	432	688	667	43,229
MILTON	4,434	5,132	5,464	43,201
DELAVAN	6,073	7,956	8,370	42,551
SOUTH BELOIT, IL	5,421	5,397	4,072	41,994
MADISON	191,262	208,054	221,551	41,941
SHARON	1,250	1,549	1,570	39,330
ELKHORN	5,337	7,305	9,021	38,395
ROCKDALE	235	214	202	37,500
BELOIT	35,573	35,775	35,621	36,414
WHITEWATER	12,636	13,437	14,311	31,793



## Ecological Landscape

### General Description

The Lower Rock River watershed is located predominantly in the southeastern part of the state. The Southeast Glacial Plains Ecological Landscape makes up the bulk of the non-coastal land area in southeast Wisconsin. This Ecological Landscape is made up of glacial till plains and moraines. Most of this Ecological Landscape is composed of glacial materials deposited during the Wisconsin Ice Age, but the southwest portion consists of older, pre-Wisconsin till with a more dissected topography. Soils are lime-rich tills overlain in most areas by a silt-loam loess cap. Agricultural and residential interests throughout the landscape have significantly altered the historical vegetation. Most of the rare natural communities that remain are associated with large moraines or in areas where the Niagara Escarpment occurs close to the surface.

## WATERSHED PROJECTS, STUDIES, MONITORING, ETC.

The Lower Rock River Watershed has had numerous Wisconsin Department of Natural Resources (WDNR) priority watershed and priority lake projects dating back to 1980. These projects provided cost-sharing and technical assistance for installing or adopting best management practices and include Sixmile-Pheasant Br. Creek, Turtle Creek, Yahara River-Lake Monona, Spring Creek, and Lake Ripley. The Lake Mendota project is scheduled to be completed in 2008.

The WDNR also conducts ongoing, baseline monitoring in many streams and lakes within the watershed each year. The Sand County Foundation has been developing nutrient management plans with farmers over the past 2 years as part of a multi-year, multi-million dollar Congressional earmark administered by Wisconsin NRCS. The Discovery Farms program also conducts economic and environmental Best Management Practice (BMP) research on a dairy farm in the watershed. The Rock River Coalition, a local watershed group, has a citizen-led water quality monitoring program, installs demonstration projects and conducts many educational events.

## PARTNER GROUPS

- County Land Conservation Departments (Directory Link = [http://www.datcp.state.wi.us/arm/agriculture/land-water/conservation/pdf/ar-pub-119web\\_dec2005.pdf](http://www.datcp.state.wi.us/arm/agriculture/land-water/conservation/pdf/ar-pub-119web_dec2005.pdf) )
- Discovery Farms Program <http://www.uwdiscoveryfarms.org/>
- River Alliance <http://www.wisconsinrivers.org/>
- Rock River Coalition <http://www.rockrivercoalition.org/>
- USDA Farm Service Agency <http://www.fsa.usda.gov/wi/news/default.asp>
- US Fish and Wildlife Service <http://www.fws.gov/midwest/maps/wisconsin.htm>
- UW Cooperative Extension <http://www.uwex.edu/ces/> and <http://basineducation.uwex.edu/rockriver/>
- Wisconsin Department of Agriculture, Trade, and Consumer Protection <http://www.datcp.state.wi.us>
- Wisconsin Department of Natural Resources <http://dnr.wi.gov/>

## FOOTNOTES/BIBLIOGRAPHY

All data is provided “as is.” There are no warranties, express or implied, including the warranty of fitness for a particular purpose, accompanying this document. Use for general planning purposes only.

1. Introduction and the description of resource concerns of the Lower Rock River Basin were derived from a report issued by the Wisconsin Department of Natural Resources. (Source: Lower Rock River Basinwide Issues, <http://www.dnr.state.wi.us/org/gmu/lowerrock/basinissues.html>, WDNR)
2. Common Resource Area (CRA) Map delineations are defined as geographical areas where resource concerns, problems, or treatment needs are similar. It is considered a subdivision of an existing Major Land Resource Area (MLRA) map delineation or polygon. Landscape conditions, soil, climate, human considerations, and other natural resource information are used to determine the geographic boundaries of a Common Resource Area.  
Online linkage: <http://soils.usda.gov/survey/geography/cra.html>.
3. The relief map was created using the National Elevation Dataset (NED) 1 arc second, approximately 30 meters, digital elevation model (DEM) raster product assembled by the U.S. Geological Survey (USGS). A hillshade grid was derived from the 30m DEM and draped over the DEM to symbolize the map and create a 3-D effect. The data was downloaded from the NRCS Geospatial Data Gateway <http://datagateway.nrcs.usda.gov/>.  
For more information about NED visit <http://ned.usgs.gov/>.
4. Average Annual Precipitation data was originated by Chris Daly of Oregon State University and George Taylor of the Oregon Climate Service at Oregon State University and published by the Water and Climate Center of the Natural Resources Conservation Service in 1998. Annual precipitation data was derived from the climatological period of 1961-1990. Parameter-elevation Regressions on Independent Slopes Model (PRISM) derived raster data is the underlying data set from which the polygons and vectors were created. For more information about PRISM visit [http://www.ocs.orst.edu/prism/prism\\_new.html](http://www.ocs.orst.edu/prism/prism_new.html). Precipitation data was downloaded from the NRCS Geospatial Data Gateway <http://datagateway.nrcs.usda.gov/>.
5. The Land Use/Land Cover data was generated from the National Land Cover Dataset (NLCD) compiled from Landsat satellite TM imagery (circa 1992) with a spatial resolution of 30 meters and supplemented by various ancillary data (where available). The data was assembled by the USGS and published in June of 1999. The analysis and interpretation of the satellite imagery was conducted using very large, sometimes multi-state image mosaics. For more information about NLCD visit <http://edcwww.cr.usgs.gov/programs/lccp/nationallandcover.html>. The data was downloaded from the NRCS Geospatial Data Gateway <http://datagateway.nrcs.usda.gov/>.
6. 303(d) listed streams were derived from the Water Quality Standards Section of the Wisconsin Department of Natural Resources (WDNR) website: [http://dnr.wi.gov/org/water/wm/wqs/303d/Lists303d/Approved\\_2004\\_303\(d\)\\_list.pdf](http://dnr.wi.gov/org/water/wm/wqs/303d/Lists303d/Approved_2004_303(d)_list.pdf). The sub-watersheds were acquired from the Lower Rock River Basin Page. For more information about the individual sub-watersheds visit <http://dnr.wi.gov/org/gmu/gpsp/gpbasin/index.htm>. For a list and explanation of Outstanding and Exceptional Resource Waters visit: <http://dnr.wi.gov/org/water/wm/wqs/orwerw/>.

7. Soil Survey Geographic Database (SSURGO) tabular and spatial data were downloaded for the following surveys:

- Dane., WI (WI025) Published 2006 01 23
- Columbia Co., WI (WI027) Published 2006 03 03
- Rock Co., WI (WI105) Published 2006 01 20
- Walworth, WI (WI127) Published 2006 01 20
- Jefferson Co., WI (WI055) Published 2006 03 03
- Waukesha Co., WI (WI133) Published 2006 01 20
- Washington Co., WI (WI131) Published 2006 01 20

Metadata and SSURGO data for the aforementioned surveys were downloaded from the NRCS Soil Data Mart at <http://soildatamart.nrcs.usda.gov>. Component and layer tables from the tabular data were linked to the spatial data to derive the soil classifications found in this section. Visit the online Web Soil Survey at <http://websoilsurvey.nrcs.usda.gov> for official and current USDA soil information as viewable maps and tables.

8. Performance Results System (PRS) data was extracted from the PRS homepage by year, conservation systems and practices and Hydrologic Unit Code (HUC) level. HUC level reporting was not available where N/A is listed. For more information on these and other performance reports visit <http://ias.sc.egov.usda.gov/prshome/>.

9. Ag Census data were downloaded from the National Agricultural Statistics Service (NASS) Website and the data were adjusted by percent of HUC in the county. For more information on individual census queries visit the NASS website at <http://www.nass.usda.gov/>.

10. Population ethnicity data were extracted from the Census 2000 Summary File 3 compiled by the U.S. Census Bureau. The data were adjusted by Block Group percentage in the HUC. Population items were selected from the SF30001 table. For more information on census data and definitions visit <http://www.census.gov/Press-Release/www/2002/sumfile3.html>.

11. Urban population and median household income data were derived from the American FactFinder assembled by the U.S. Census Bureau. American FactFinder is a quick source for population, housing, income and geographic data. For other census items and trends visit [http://factfinder.census.gov/home/saff/main.html?\\_lan](http://factfinder.census.gov/home/saff/main.html?_lan)