



## Rapid Watershed Assessment Upper Rock River

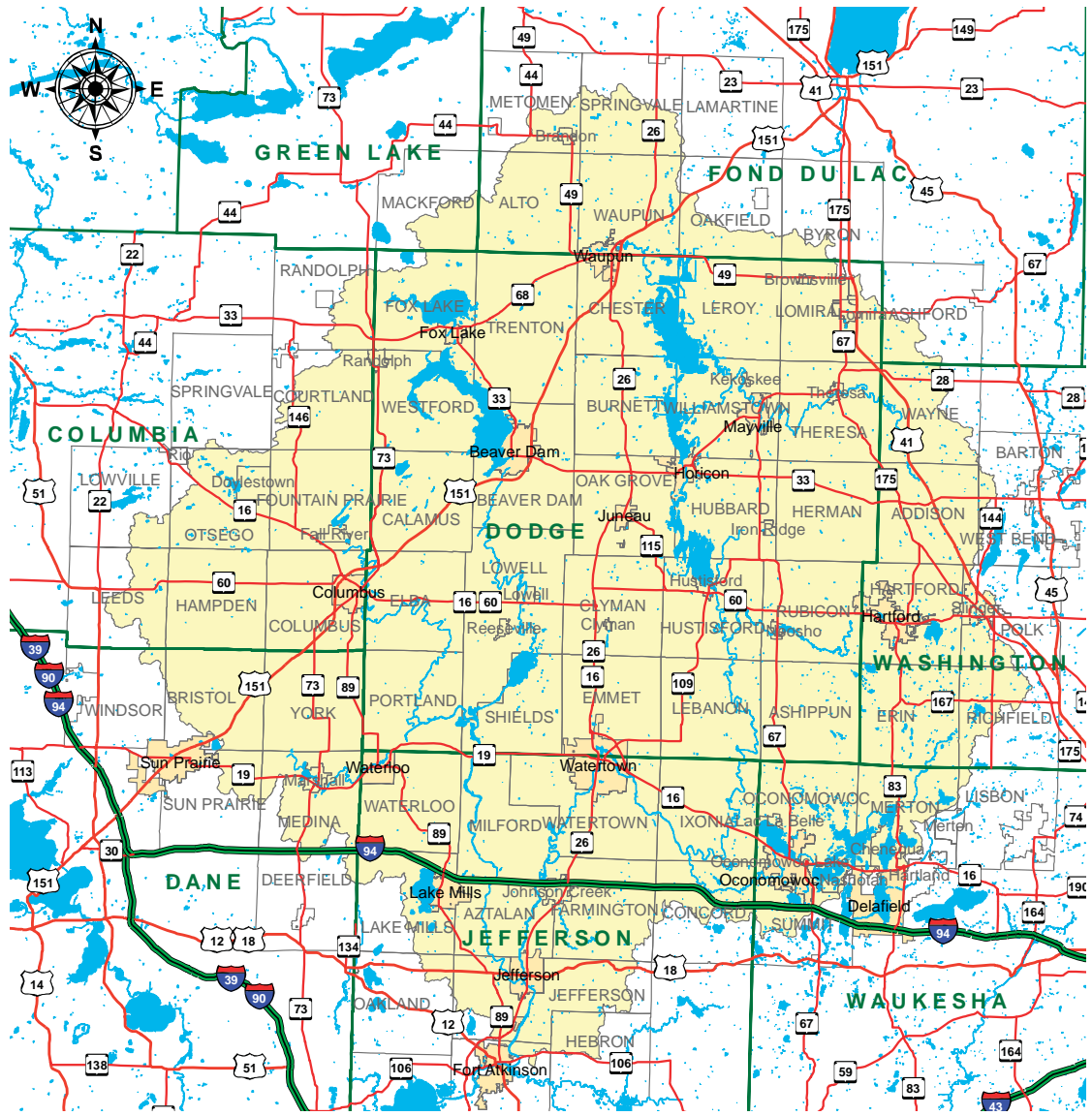
Rapid watershed assessments provide initial estimates of where conservation investments would best address the concerns of landowners, conservation districts, and other community organizations and stakeholders. These assessments help landowners and local leaders set priorities and determine the best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

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**INTRODUCTION<sup>1</sup>**

The Upper Rock River basin, covering 1,890 square miles, lies in south central Wisconsin's eastern ridges and lowlands geographical province. At the north end of the basin, the East, South and West branches of the Rock River come together in Horicon Marsh. From the city of Horicon, on the south edge of the marsh, the river flows south 76 miles to Fort Atkinson. The gradient of the Upper Rock River is very flat. The fall of the river from the upper Federal dam in the Horicon National Wildlife Refuge to the upper Watertown dam is just 34 feet over 58 miles.



NAME	COUNTY ACRES	ACRES IN HUC	% OF HUC AREA	% OF COUNTY IN HUC
COLUMBIA	509533	126474	10	25
DANE	792564	67175	6	8
DODGE	580383	575476	47	99
FOND DU LAC	489807	77914	6	16
GREEN LAKE	243344	6510	1	3
JEFFERSON	372840	198912	16	53
WASHINGTON	278680	104812	9	38
WAUKESHA	371380	53871	4	15

**PHYSICAL DESCRIPTION**

The basin is bounded on the east by the Niagara escarpment and the eastern terminal moraine, formed by the Green Bay lobe during the last glaciated period in Wisconsin. The most dominant geologic features are the extensive drumlin fields in Dodge County and portions of Dane, Columbia and Jefferson counties.

The largest water features in the basin are the Rock River, the Crawfish River, the Beaver Dam River Horicon Marsh, Beaver Dam Lake, Lake Sinissippi and Oconomowoc Lake.

Municipalities with populations over 5,000 are Watertown, Beaver Dam, Oconomowoc, Waupun, Hartford and Jefferson.

Most of the original wetlands in the basin have been drained for agriculture or filled for development. However, many wetland complexes remain. The largest of these is Horicon Marsh in Dodge County. The marsh is owned by the State of Wisconsin and the U.S. Fish and Wildlife Service. Other large wetland complexes include: Theresa Marsh, Deansville Marsh, Portland Marsh, and the wetlands in the Mud Lake State Wildlife Area. Many of the larger wetlands are part of state wildlife areas. Agriculture, the predominant land use, includes a mix of dairy, feeder operations, cash-cropping and muck farming.

**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.W11, SOUTHERN WISCONSIN AND NORTHERN ILLINOIS TILL PLAIN**

The watershed is located in a nearly level to strongly sloping till plain with prominent drumlins. Well drained silty and loamy soils with poorly drained organic soils are found in the depressions. Cropland dominates the landscape with a mix of livestock and cash grain enterprises. Grazing land and scattered deciduous forest, lakes, and marshes are also present. The large Horicon Marsh, an important migratory bird stopover, is located in the northern headwater region of the watershed.



**MAJOR LAND RESOURCE AREAS** 2.

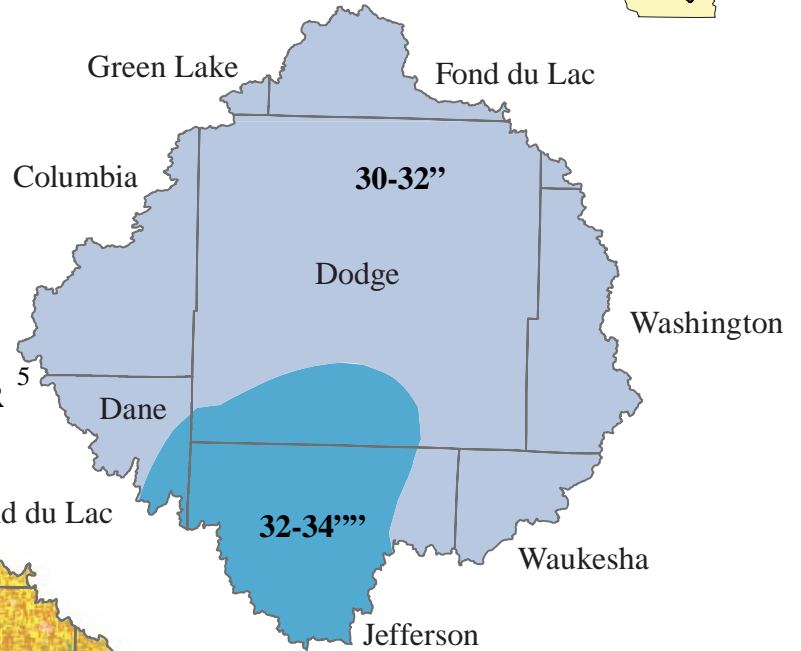


**ELEVATION MAP** 3.

Feet	Meters
>1300	>396
1268-1300	387-396
1101-1267	336-386
1005-1100	307-335
900-1004	275-306
801-899	244-274
<800	<244

Elevation

**AVERAGE ANNUAL PRECIPITATION (INCHES)**

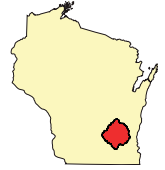


**LAND USE / LAND COVER**



**LAND COVER**





	Acres	Percent		Acres	Percent
Pasture Hay	356,959	29	Low Intensity Residential	11,680	0
Deciduous Forest	84,483	7	High Intensity Residential	6,725	0
Row Crops	618,488	51	Evergreen Forest	4,379	0
Open Water	28,578	2	Mixed Forest	1,698	0
Woody Wetlands	41,853	3	Small Grains	803	0
Emergent Herbaceous Wetlands	40,997	3	Urban / Recreational Grasses	4,418	0
Commercial/Industrial / Transport	3,544	0	Quarries / Strip Mines, Gravel Pits	143	0
Grasslands / Herbaceous	6,375	0	Bare Rock / Sand / Clay	58	0
			<b>Total Acres</b>	<b>1,211,182.08</b>	



ASSESSMENT OF WATER - UPPER ROCK RIVER WATERSHED

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Listed Waters

-  303(d) Listed
-  Exceptional Resource Waters
-  Sub Watersheds
-  Streams / Rivers



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/>

**ASSESSMENT OF WATERS**



Section 303(d) of the Clean Water Act states that waterbodies 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 waterbodies 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	MERCURY	PHOSPHOROUS	PCBS
ALTO CREEK	X	X				
BATTLE CREEK	X	X				
BEAVER DAM RIVER	X	X	X		X	
CASPER CREEK	X	X				
CRAWFISH RIVER AT COLUMBUS MILLPOND						X
DAVY CREEK						
FLYNN CREEK	X	X				
GILL CREEK	X	X				
HORICON MARSH	X	X				
IRISH CREEK	X	X				
KOHLVILLE RIVER	X	X				
KUMMEL CREEK	X	X				
LAC LA BELLE						X
LIMESTONE CREEK	X	X				
MASON CREEK	X	X	X		X	
MAUNESHA RIVER	X	X	X		X	
MUD CREEK	X	X				
NORTH BRANCH WAYNE CREEK	X	X				
OCONOMOWOC LAKE				X		
PARK CREEK	X	X				
PIKE LAKE				X		
PINE LAKE						
ROCK CREEK AT HOOPER'S MILLPOND						X
ROCK LAKE				X		
ROCK RIVER (ABOVE WATERTOWN)	X	X				
ROCK RIVER (WATERTOWN TO L. KOSHKONONG)			X		X	
SCHULTZ CREEK	X	X				
SOUTH BRANCH ROCK RIVER (DODGE)	X		X		X	
SOUTH BRANCH ROCK RIVER (FOND DU LAC)	X	X	X		X	
SINNISSIPPI LAKE	X					
WAYNE CREEK	X	X				
<b>Exceptional Resource Waters</b>						
OCONOMOWOC RIVER						
SPRING CREEK						
<b>Outstanding Resource Waters</b>						
NONE						









## SOILS<sup>7</sup>

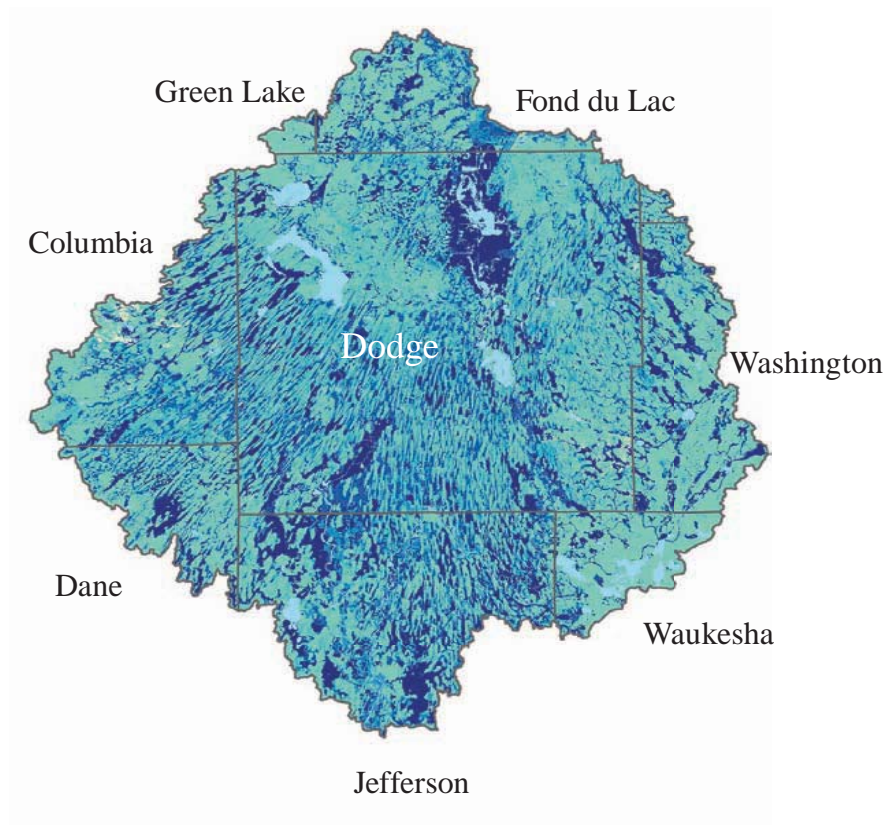
The soils in this watershed have formed mainly in wind blown silty or loess deposits overlying glacial till. There is a small percentage of the watershed where the loess does overly outwash. Loess overlying bedrock can also be found throughout the watershed however it is scattered and is not predictable 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.



## 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.”

Drainage Classification		% Area
	Excessively drained	0.5
	Somewhat excessively drained	0.10
	Well drained	43.6
	Moderately well drained	10.6
	Somewhat poorly drained	13.7
	Poorly drained	13.9
	Very poorly drained	14.2
	Water	3.2

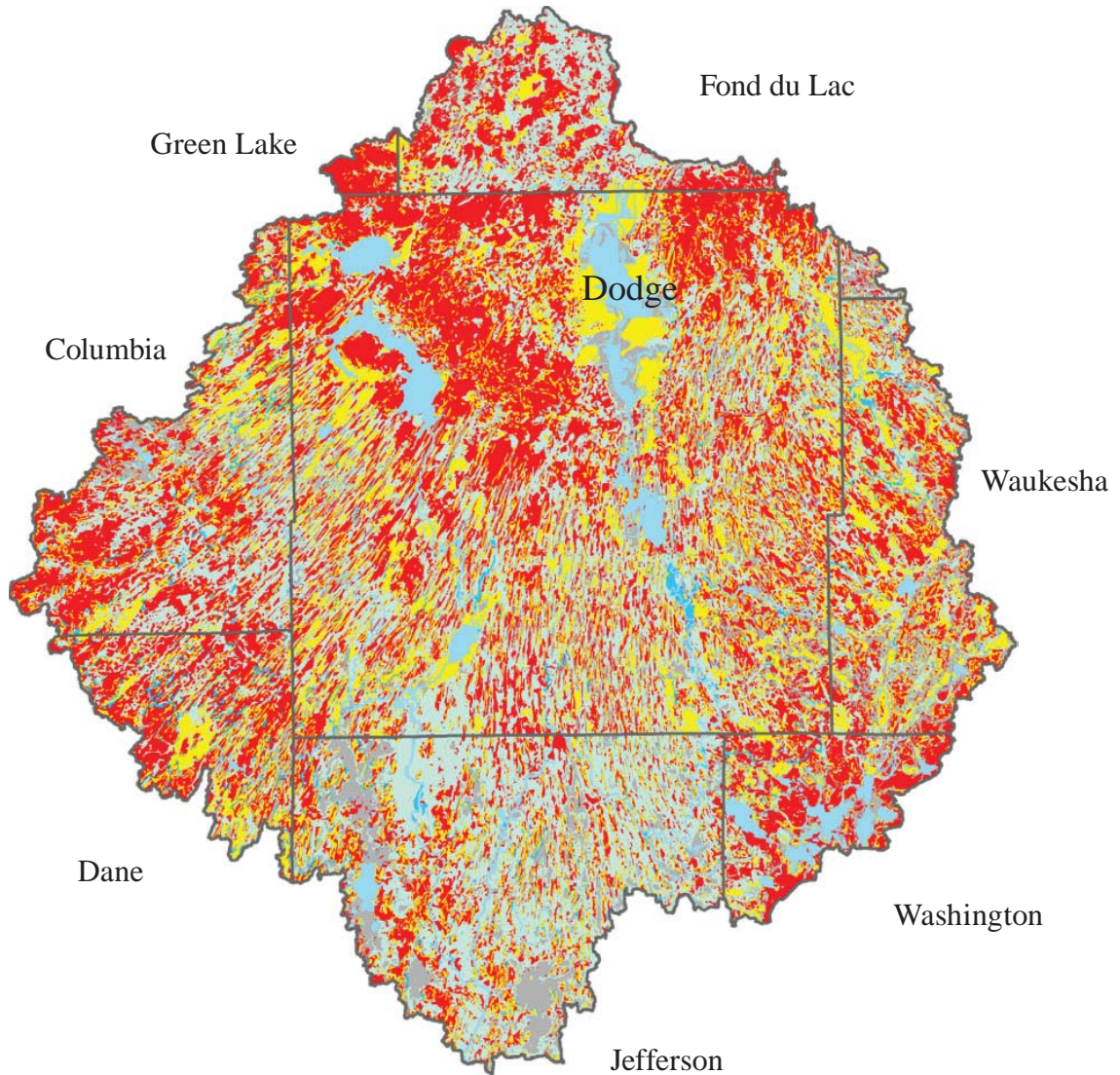









Visit the online Web Soil Survey at <http://websoilsurvey.nrcs.usda.gov> for official and current USDA soil information as viewable maps and tables.  
 Visit the Soil Data Mart at <http://soildatamart.usda.gov> to download SSURGO certified soil tabular and spatial data.



**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.



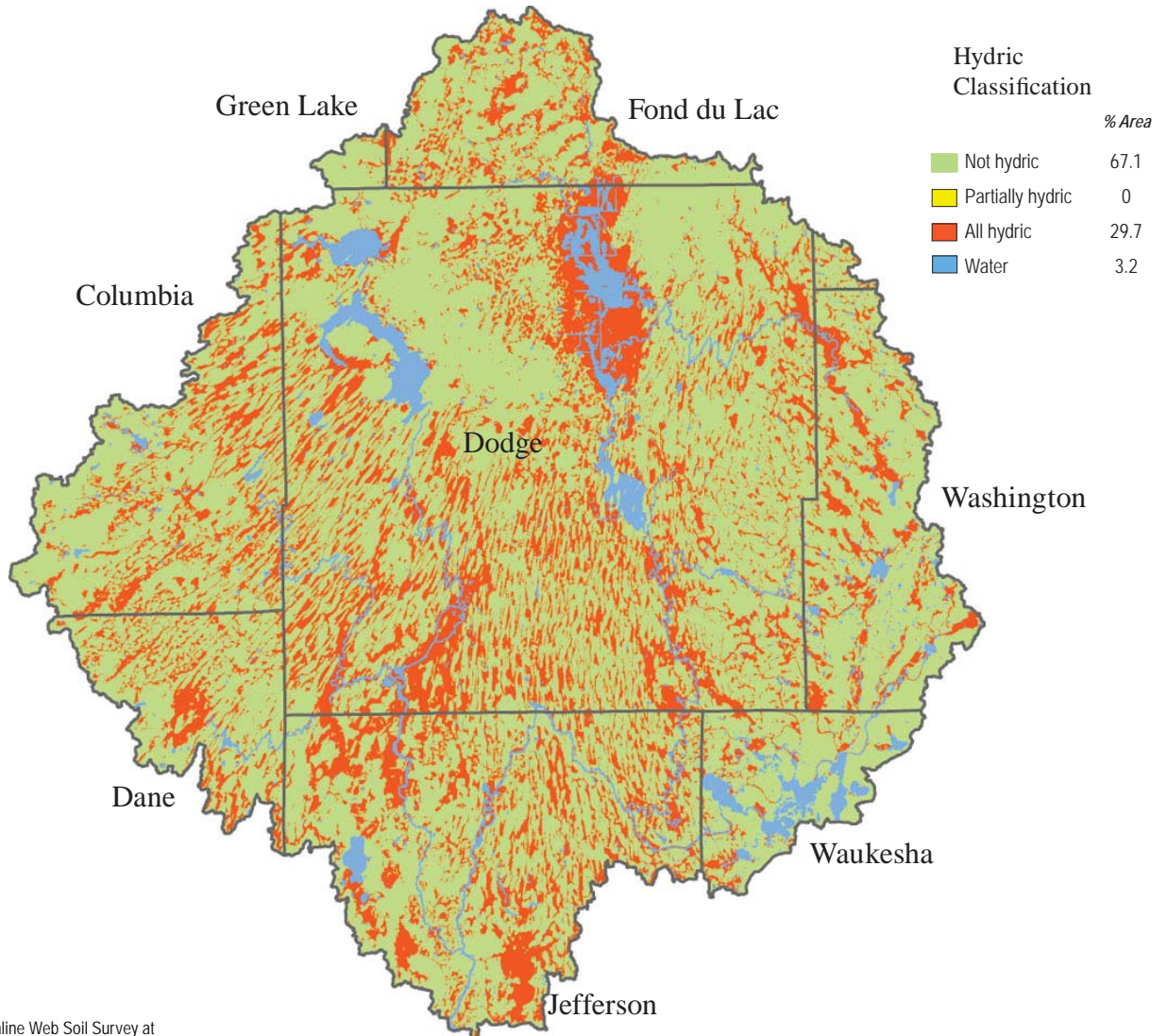
	Acres	Percent
 All areas are prime farmland	501,877	41.30
 Farmland of statewide importance	226,509	18.70
 Prime farmland if drained	290,360	23.90
 Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	13176	1.10
 Prime farmland if protected from flooding or not frequently flooded during the growing season	38	0
 Not Prime farmland	179,183	14.80
 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).

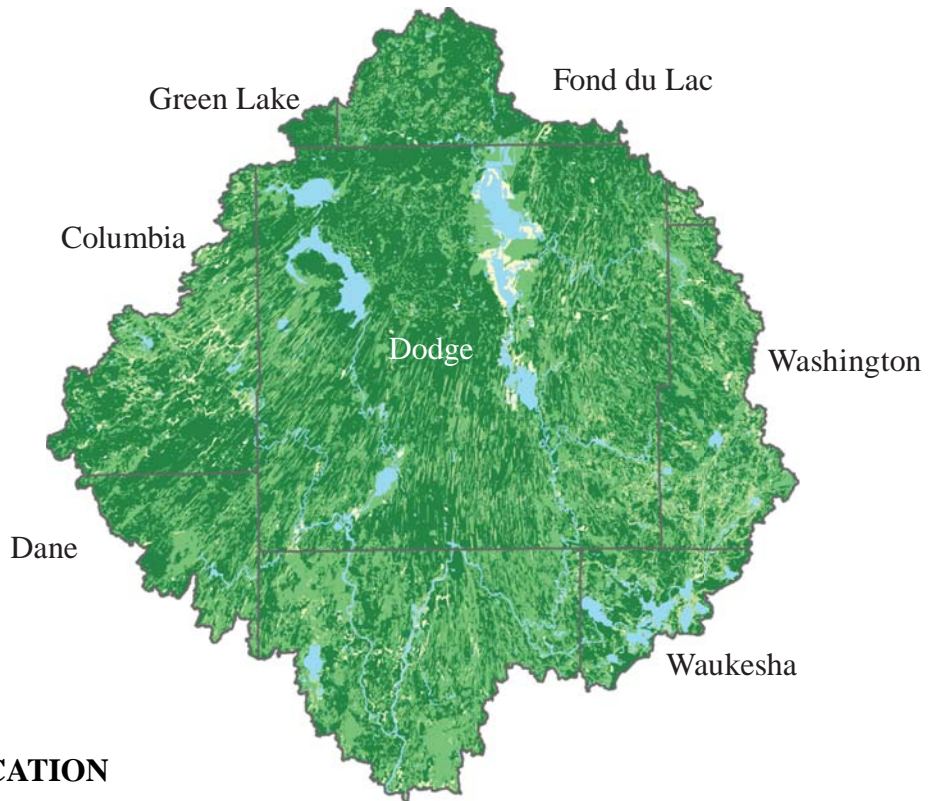


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**Land Capability Classification**

Land Capability Classification	% Area
Well Suited	62
Moderately well suited	29
Poorly suited	4
Unsuited	5
Water	



**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**

Primary resource concerns are cropland and construction site erosion, surface water quality, stormwater management, and wetland habitat protection and restoration. The primary water quality problems in the Upper Rock River Basin are excessive growth of algae, reduced dissolved oxygen levels, and poor water clarity (turbidity), caused by agricultural and urban 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 Upper Rock River Watershed is 13.7

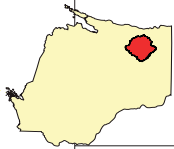
**PRS AND OTHER DATA**<sup>8</sup>



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**

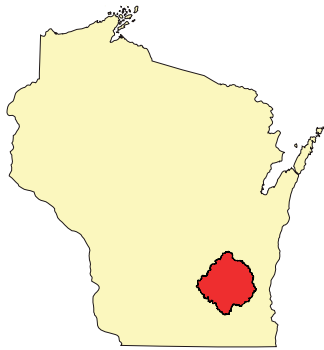
	FY99	FY00	FY01	FY02	FY03	FY04	FY05	TOTAL
Total Conservation Systems Planned (acres)	1,790	34,939	34,055	34,105	53,038	N/A	31,851	189,777
Total Conservation Systems Applied (acres)	1,643	29,866	29,086	34,105	53,781	N/A	25,101	173,582
<b>C o n s e r v a t i o n P r a c t i c e s</b>								
Total Waste Management (313) (numbers)	0	14	10	6	2	0	2	34
Riparian Forest Buffers (391) (acres)	8	54	1	27	41	5	6	142
Erosion Control Total Soil Saved (tons/year)	978	44,973	62,787	69,637	59,137	N/A	N/A	237,511
Total Nutrient Management (590) (Acres)	0	18,439	19,026	23,295	22,470	13,058	10,485	106,773
Pest Management Systems Applied (595A) (Acres)	0	0	152	327	741	14	157	1,392
Prescribed Grazing 528a (acres)	0	0	45	258	514	389	145	1,350
Tree & Shrub Establishment (612) (acres)	131	368	581	154	374	19	42	1,668
Residue Management (329A-C) (acres)	13	16,679	21,297	11,608	20,745	11,160	13,516	95,018
Total Wildlife Habitat (644 - 645) (acres)	1,009	4,272	3,125	2,781	6,260	1,316	26,987	20,030
Total Wetlands Created, Restored, or Enhanced (acres)	432	1,127	965	1,772	712	709	936	6,653
<b>A c r e s e n r o l l e d i n F a r m b i l l P r o g r a m s</b>								
Conservation Reserve Program	1,577	8,610	9,595	3,142	5,445	N/A	402	28,771
Wetlands Reserve Program	0	3,321	1,139	1,187	253	N/A	945	6,844
Environmental Quality Incentives Program	0	4,360	5,186	10,752	17,523	N/A	10,678	48,500
Wildlife Habitat Incentive Program	0	3,361	4,222	5	7	N/A	46	7,641
Farmland Protection Program	0	0	8,823	1,117	0	N/A	0	9,940



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2002 Ag Census Data

	COLUMBIA	DANE	DODGE	FOND DU LAC	GREEN LAKE	JEFFERSON	WASHINGTON	WAUKESHA	TOTAL
FARMS (NUMBER)	378	245	1,952	260	18	759	317	110	4,041
LAND IN FARMS (ACRES)	86,396	43,815	400,822	54,741	3,994	132,386	48,807	14,269	785,230
TOTAL CROPLAND (ACRES)	65,614	35,301	337,904	46,469	3,145	103,793	39,500	11,702	643,427
IRRIGATED LAND (ACRES)	387	448	492	124	69	5,163	286	112	7,081
PRINCIPAL OPERATOR BY PRIMARY OCCUPATION - FARMING (NUMBER)	230	137	1,294	174	12	418	208	56	2,527
FARMS BY SIZE - 1 TO 9 ACRES	28	26	139	17	1	49	25	17	301
FARMS BY SIZE - 10 TO 49 ACRES	82	73	434	54	3	233	101	47	1,028
FARMS BY SIZE - 50 TO 179 ACRES	139	81	715	95	8	291	118	29	1,476
FARMS BY SIZE - 180 TO 499 ACRES	87	47	501	71	5	138	54	11	913
FARMS BY SIZE - 500 TO 999 ACRES	27	12	121	15	1	28	12	3	220
FARMS BY SIZE - 1,000 ACRES OR MORE	16	6	42	8	1	21	7	3	103
LIVESTOCK AND POULTRY - CATTLE AND CALVES INVENTORY (FARMS)	156	87	993	120	7	275	135	28	1,800
LIVESTOCK AND POULTRY - CATTLE AND CALVES INVENTORY - BEEF COWS (FARMS)	56	24	202	17	1	79	29	13	422
LIVESTOCK AND POULTRY - CATTLE AND CALVES INVENTORY - MILK COWS (FARMS)	52	37	485	71	4	105	65	8	827
LIVESTOCK AND POULTRY - HOGS AND PIGS INVENTORY (FARMS)	20	7	109	9	1	41	13	4	204
LIVESTOCK AND POULTRY - SHEEP AND LAMBS INVENTORY (FARMS)	22	9	55	6	1	31	8	7	139
LIVESTOCK AND POULTRY - LAYERS 20 WEEKS OLD AND OLDER INVENTORY (FARMS)	19	10	82	8	1	58	18	6	203
LIVESTOCK AND POULTRY - BROILERS AND OTHER MEAT-TYPE CHICKENS SOLD (FARMS)	8	2	29	2	0	12	5	2	60
SELECTED CROPS HARVESTED - CORN FOR GRAIN (ACRES)	29,973	13,461	127,407	13,805	1,220	37,681	10,475	3,845	237,866
SELECTED CROPS HARVESTED - CORN FOR SILAGE OR GREENCHOP (ACRES)	2,444	2,158	23,328	3,459	140	5,098	3,254	331	40,212
SELECTED CROPS HARVESTED - WHEAT FOR GRAIN, ALL (ACRES)	1,564	575	9,610	1,974	90	2,233	1,662	266	17,974
SELECTED CROPS HARVESTED - WHEAT FOR GRAIN, ALL - WINTER WHEAT FOR GRAIN (ACRES)	1,547	0	9,435	0	88	0	0	263	11,332
SELECTED CROPS HARVESTED - WHEAT FOR GRAIN, ALL - SPRING WHEAT FOR GRAIN (ACRES)	17	0	175	0	3	0	0	4	198
SELECTED CROPS HARVESTED - OATS FOR GRAIN (ACRES)	816	422	5,999	986	49	1,041	1,523	195	11,030
SELECTED CROPS HARVESTED - BARLEY FOR GRAIN (ACRES)	44	20	579	129	3	63	283	6	1,127
SELECTED CROPS HARVESTED - SOYBEANS FOR BEANS (ACRES)	12,825	7,411	65,913	7,604	449	26,327	7,776	3,316	131,622
SELECTED CROPS HARVESTED - FORAGE - LAND USED FOR ALL HAY AND ALL HAY-LAGE, GRASS SILAGE, AND GREENCHOP (SEE TEXT) (ACRES)	10,381	6,652	68,692	11,254	479	15,911	10,745	2,091	126,205
SELECTED CROPS HARVESTED - VEGETABLES HARVESTED FOR SALE (SEE TEXT) (ACRES)	1,111	213	11,149	2,717	270	1,208	814	156	17,637
SELECTED CROPS HARVESTED - LAND IN ORCHARDS (ACRES)	10	15	168	16	1	38	28	15	291



**CENSUS AND SOCIAL DATA  
(RELEVANT)**

There are 4041 farms in the watershed, covering a total of 785,230 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)

**URBAN POPULATION** <sup>11</sup>

	1990	2000	2004	Median Income*
Chenequa	601	583	594	163,428
Oconomowoc Lake	493	564	638	112,760
Lac La Belle	258	329	440	96,712
Nashotah	567	1,266	1,378	77,406
Merton	1,199	1,926	2,643	71,509
Brownsville	415	570	553	62,679
Delafield	5,347	6,472	6,767	61,938
Hartland	6,906	7,905	8,672	58,359
Doylestown	316	328	349	53,125
Sun Prairie	15,333	20,369	25,392	51,345
Oconomowoc	10,993	12,382	13,711	51,250
Horicon	3,873	3,775	3,604	50,577
Neosho	658	593	579	50,167
Waterloo	2,712	3,259	3,282	49,221
Slinger	2,340	3,901	4,358	47,125
Fall River	842	1,097	1,280	46,597
Hartford	8,188	10,905	13,017	46,561
Lomira	1,542	2,233	2,410	46,522
Marshall	2,329	3,432	3,561	46,141
Johnson Creek	1,259	1,581	2,024	45,694
Theresa	771	1,252	1,265	44,200
Lake Mills	4,143	4,843	5,241	44,132
Fort Atkinson	10,227	11,621	11,949	43,807
Lowell	300	366	362	43,594
Brandon	872	912	888	43,542
Columbus	4,093	4,479	5,101	42,667
Watertown	19,142	21,598	22,816	42,562
Mayville	4,374	4,902	5,055	42,393
Rio	768	938	998	42,292
Juneau	2,157	2,485	2,587	42,162
Iron Ridge	887	998	987	42,083
Jefferson	6,078	7,338	7,592	40,962
Hustisford	979	1,135	1,106	40,929
Waupun	8,207	10,718	10,558	40,597
Clyman	370	388	378	40,000
Randolph	1,729	1,869	1,820	39,620
Kekoskee	188	169	164	38,750
Beaver Dam	14,196	15,169	15,153	37,873
Reeseville	673	703	692	37,120
Fox Lake	1,269	1,454	1,458	36,607

**POPULATION ETHNICITY** <sup>10</sup>

	Urban Population	Rural Population	White Alone	Hispanic or Latino	Two or more races	Black or African American Alone	Some other race alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander alone
Total Population	126,044	95,744	213,908	5,172	1,666	2,553	1,950	987	698	44

## WATERSHED PROJECTS, STUDIES, MONITORING, ETC.

The Beaver Dam River, part of the Upper Rock River Watershed, was a Wisconsin Department of Natural Resources (WDNR) priority watershed in the 1990's that provided cost-sharing and technical assistance for installing or adopting best management practices.

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 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) )
- 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>

**ECOLOGICAL LANDSCAPES**



**GENERAL DESCRIPTION**

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.



## 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 Upper Rock River Basin were derived from a report issued by the Wisconsin Department of Natural Resources titled “The State of the Rock River Basin”, 4/12, 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 (WIDNR) 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 Upper Rock River Basin Page. For more information about the individual sub-watersheds visit <http://dnr.wi.gov/org/gmu/gps/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
- Dodge Co., WI (WI027) Published 2006 03 03
- Fond du Lac, WI (WI039) Published 2006 01 20
- Green Lake Co., WI (WI027) Published 2006 03 03
- Jefferson Co., WI (WI055) Published 2006 03 03
- Waukesha Co., WI (WI602) 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)