



**R**apid Watershed Assessments (RWA) 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.

**Introduction**

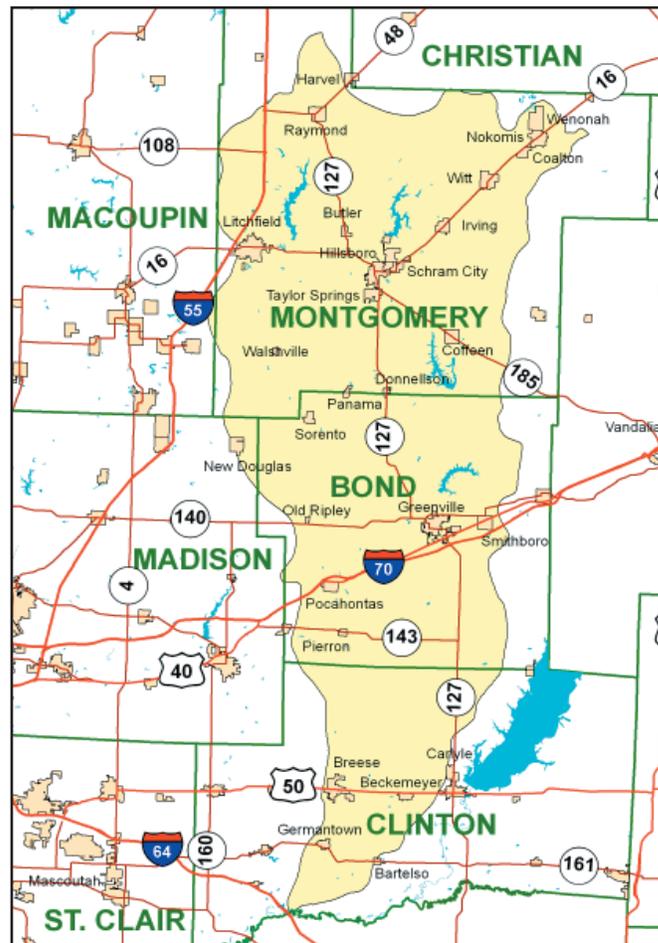
The Shoal Creek Watershed is located in Southern Illinois, flows in a southerly direction and encompasses more than 586,756 acres. The watershed covers land within Bond, Clinton, Macoupin, Madison, and Montgomery Counties.



The mainly agricultural landscape has many small streams, creeks, and man-made lakes that flow into Shoal Creek that eventually enter the Kaskaskia River. There are three man-made lakes within the watershed, which are Governor Bond Lake (755 acres), Glen Shoal Lake (1,140 acres), Lou Yeager Lake (1,205 acres). Conservation assistance is provided by five NRCS Field and Soil and Water Conservation District Offices, and two Resource Conservation and Development (RC&D) offices.

The majority of land in the watershed, 69.9 percent is devoted to agriculture. Forestry accounts for 18.5 percent of the area while, publicly owned acres, urban areas, and open water comprise the balance of the

Shoal Creek Watershed
   
**Location Map**



watershed. Farms consist of dairy, cash grain, hog and beef operations. Major crops include corn, soybeans, wheat, and alfalfa.

The population of the watershed is mostly rural, but there are many small cities and villages found throughout the area. The largest population centers are the cities of Litchfield, (pop. 6,815), Hillsboro, (pop. 4,359), Greenville, (pop. 6,955), and Breese, (pop. 5,733). Agriculture and manufacturing are the largest components of the region's economy.



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*All RWA data is a collection of information from various sources that was developed and compiled by different entities which over time will become obsolete as new data is gathered and analyzed. For the most up-to-date information possible, RWA users should consult the present web sites and archives offered by agencies and entities listed in the endnotes.*

## Hydrologic Unit Classification (HUC)

**W**atersheds are organized into a hydrologic system that divides and subdivides areas of the U.S. into successively smaller watersheds. These levels, used to organize hydrologic data, are called “hydrologic units,” which represent natural and man-made watersheds. They are identified by a numeric code called “hydrologic unit code,” or “HUC”, which is an 8-digit code. The HUC describes the relation of units to each other, representing the way smaller watersheds (12-digit codes) drain areas that together form larger watersheds (10-digit codes).

### Shoal Creek Watershed County Areas

County	County Acres	Acres in HUC	% of HUC from County	% County in HUC
Christian	457,950	22	0.00	0.00
Macoupin	555,791	792	0.13	0.14
Montgomery	454,162	298,842	50.66	65.80
Bond	245,081	196,363	33.29	80.12
Madison	473,977	4,979	0.84	1.05
Clinton	322,160	88,842	15.06	27.58
Washington	360,934	10	0.00	0.00
<b>Total</b>		<b>589,848</b>	<b>100</b>	

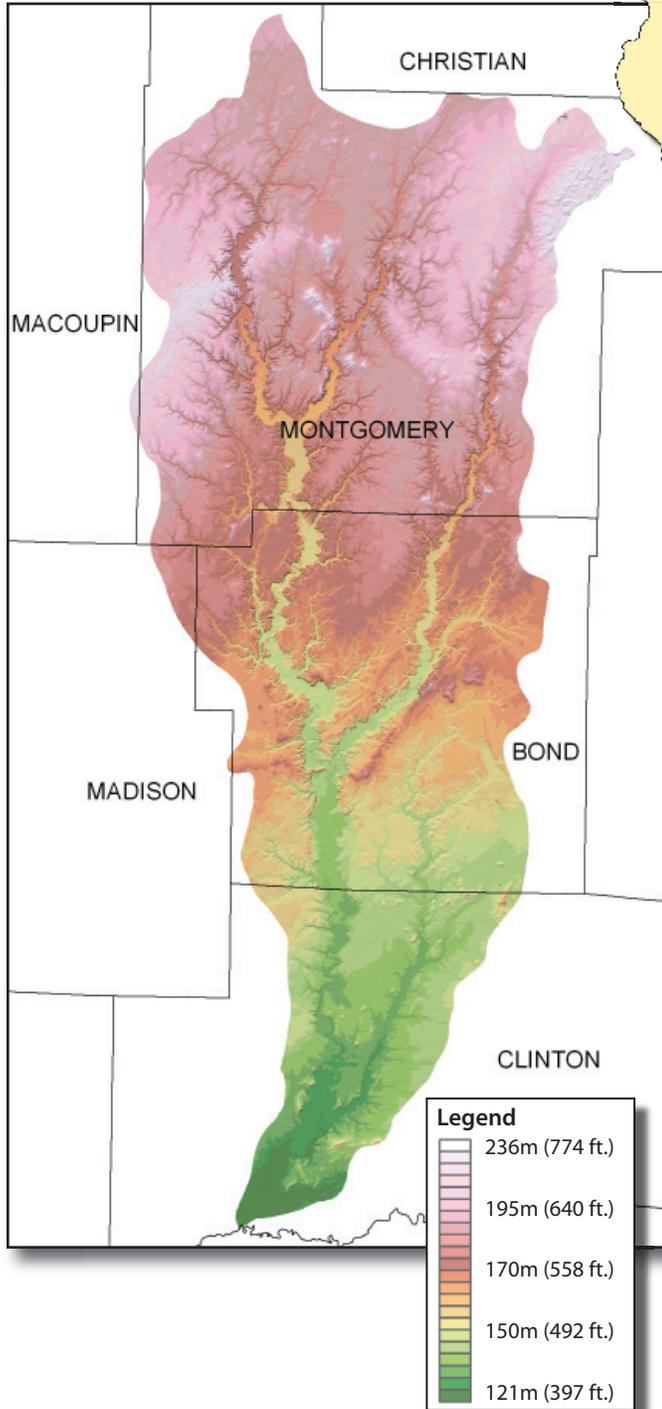
### Shoal Creek Subwatershed

HUC_10	HU_10_Name	Acres	% Area
0714020301	West Fork Shoal Creek	102,424.1	17.5
0714020302	Middle Fork Shoal Creek	74,943.65	12.8
0714020303	East Fork Shoal Creek	118,257	20.1
0714020304	Headwaters Shoal Creek	128,262.6	21.9
0714020305	Beaver Creek	92,194.36	15.7
0714020306	Shoal Creek	70,666.46	12

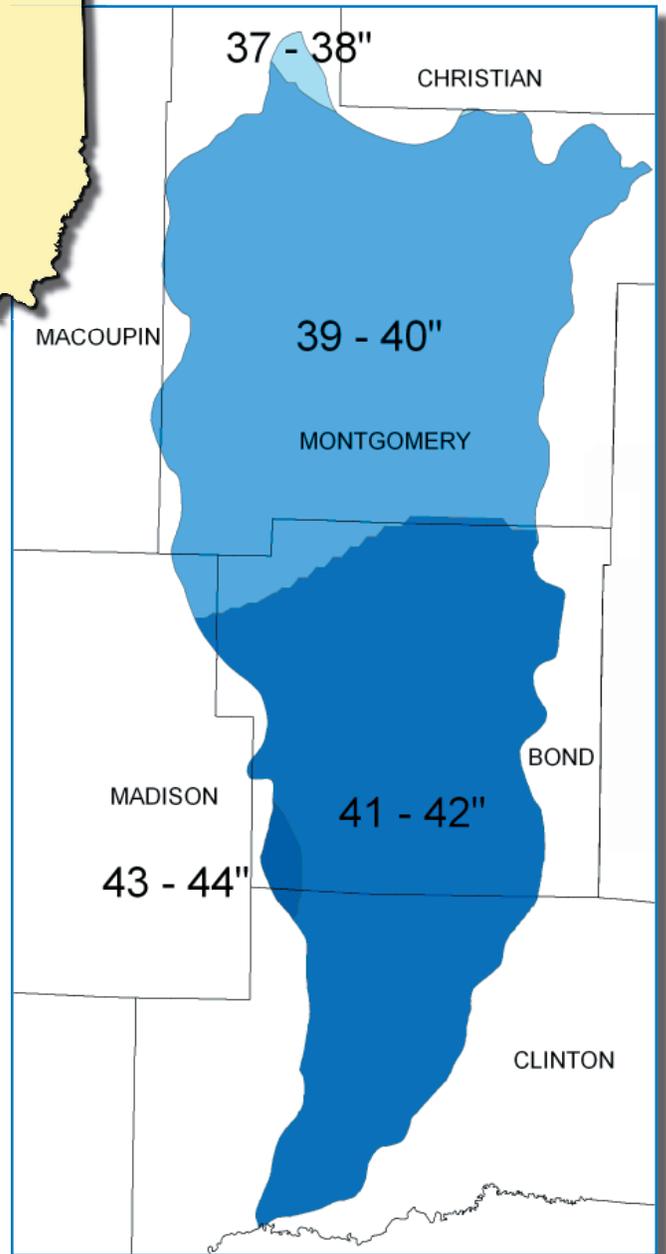
# Elevation & Annual Precipitation

Shoal Creek Watershed  
 (IL) HUC: 07140203  
 Total Acres: 586,756

Shoal Creek Watershed  
**Elevation Map**



Shoal Creek Watershed  
**Annual Average Precipitation Map**  
 (inches)



*1/ See endnote, pg. 28.*

**C**ommon Resource Area (CRA) delineations are defined as geographical areas where resource concerns, problems and treatment needs are similar. CRAs 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 CRAs.

### **108B.1 Central Corn Belt Deep Loess and Drift Plains, Western Part**

Nearly level and gently sloping, dark colored, poorly drained to moderately well drained soils formed in loess. The area is extensively subsurface drained and used for corn and soybean production. More diverse agriculture and the few remaining woodlands are in the more rolling areas associated with small to medium streams.

### **113.1 Clay Pan Till Plains**

Nearly level and gently sloping, well-developed claypan soils on a flat glacial till plain. Light to moderately dark colored, poorly drained and somewhat poorly drained soils formed primarily in loess. Loess thickness generally ranges from greater than 6 feet in the western part to about 3 feet in the eastern part. The silty surface soil changes abruptly to the high clay subsoil. The area is intensively cropped with row crops and small grain. Sodium affected soils are throughout the area and occur in an intricate pattern with soils not affected by sodium. The more sloping areas adjacent to the streams are more commonly used for pasture or remain in woodland. Postglacial stream erosion has made little progress and most of the surface is flat or gently rolling with local relief less than 100 feet. Bedrock exposures are rare.

### **114B.1 Southern Illinois and Indiana Thin Loess and Till Plain, Western Part**

Nearly level to moderately sloping, light to moderately dark colored, well drained to very poorly drained soils

formed in deeply leached pre-Wisconsin till and a mantle of loess. Corn, soybeans, livestock, and general farming are the main uses. Urban development is expanding from the St. Louis metropolitan area into the northwestern part of this resource area. Well drained soils formed in till are common in the rolling and very steep areas along drainageways. These areas are commonly wooded. Karst topography impacts significant areas of Monroe and Randolph Counties.

### **114B.3 Southern Illinois and Indiana Thin Loess and Till Plain — Alluvium and Lacustrine**

Nearly level light to dark colored, poorly drained and somewhat poorly drained soils formed in silty alluvium and in medium to fine textured lacustrine materials. Flooding frequency ranges from none on lake plains to frequent on the active flood plains. Lacustrine areas are intensively cropped with row crops and small grain. Flood plains are mostly cropped but significant acreage is wooded. Resource concerns are bottomland flooding, erosion from cropland, wetland preservation and restoration, and nutrient management.

### **114B.4 Southern Illinois and Indiana Thin Loess and Till Plain — Sodium Affected**

Nearly level and gently sloping, light to dark colored, poorly drained and somewhat poorly drained soils formed primarily in loess. Loess thickness is generally greater than 4 feet. Corn, soybeans, small grain, livestock, and general farming are the main uses. Sodium affected soils are throughout the area and occur in an intricate pattern with soils not affected by sodium. The more sloping areas adjacent to the streams formed in loess and till or entirely in till, and are commonly used for pasture or remain in woodland. Resource concerns are erosion from cropland, surface water management, nutrient management, and wildlife habitat management.

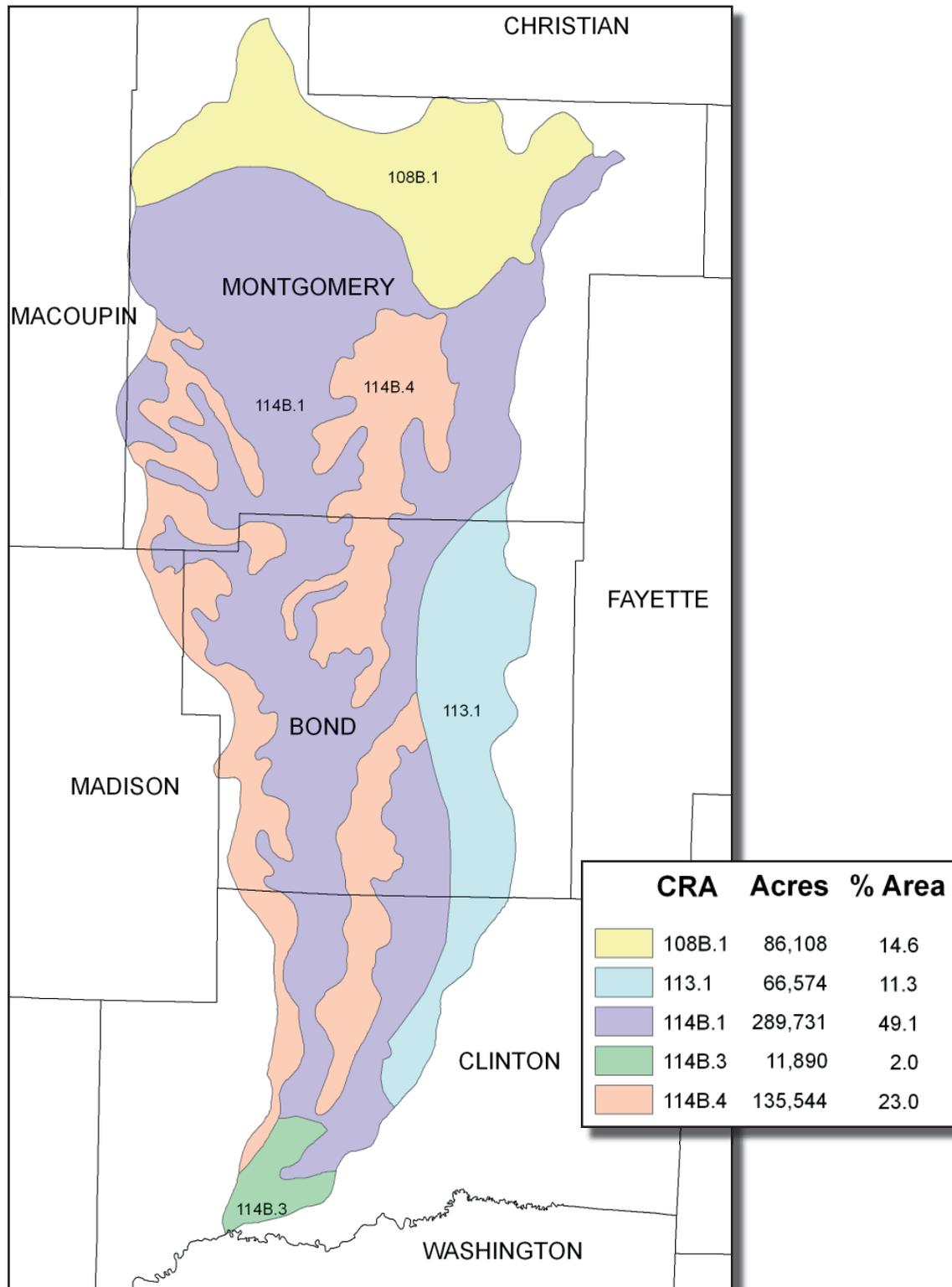
*2/ See endnote, pg. 28.*

# Common Resource Areas

**Shoal Creek Watershed**  
 (IL) HUC: 07140203  
 Total Acres: 586,756



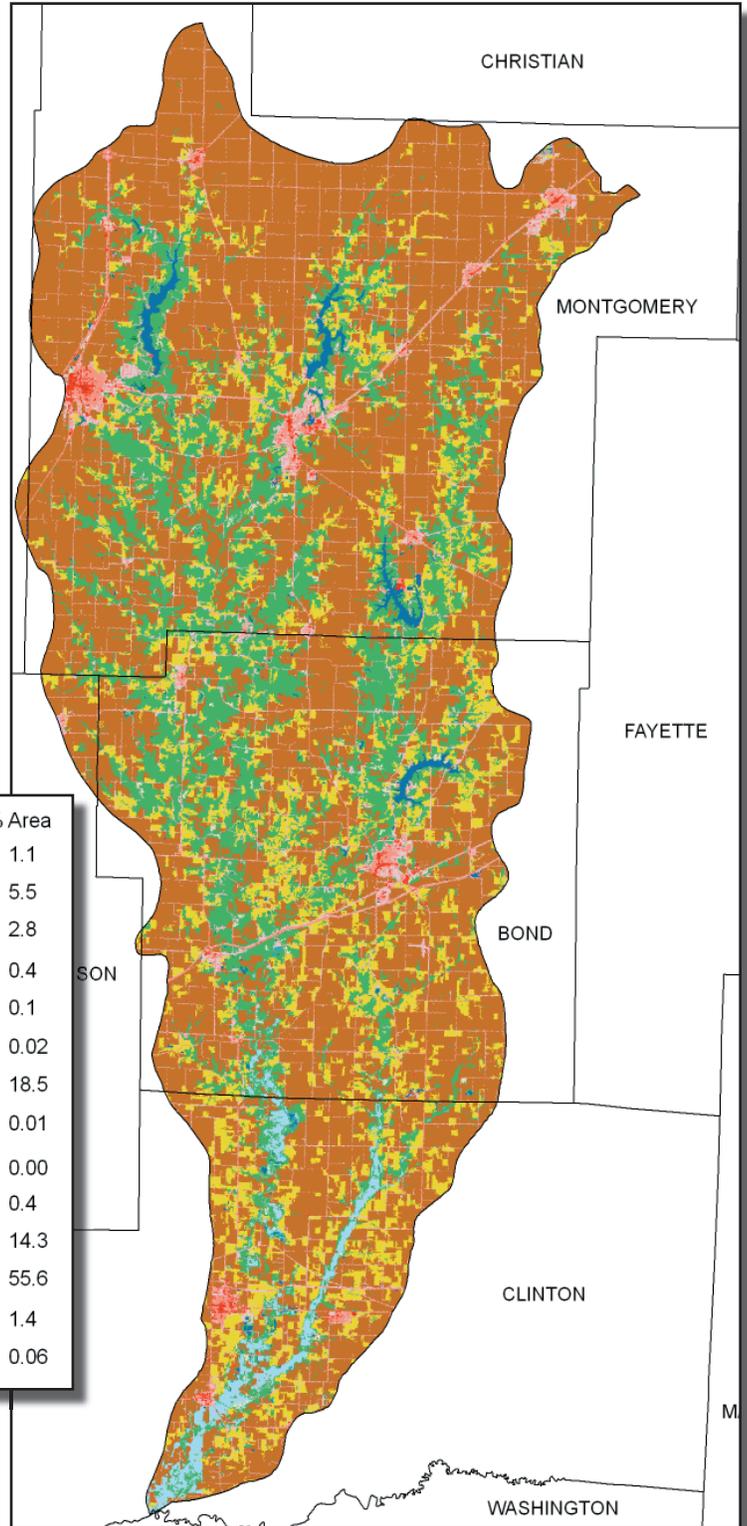
Shoal Creek Watershed  
**CRA Map**



**T**here are 1,468 farms in the watershed covering a total of 468,117 acres. Average farm size in the watershed is 319 acres compared to a statewide average of 374 acres in Illinois. Please refer to table below for more detailed information or visit the web site of the Illinois office of the National Agriculture Statistics Service at: [www.nass.usda.gov/statistics](http://www.nass.usda.gov/statistics).



Shoal Creek Watershed  
**Land Cover Map**



	Acres	% Area
Open Water	6,431	1.1
Developed, Open Space	32,600	5.5
Developed, Low Intensity	16,517	2.8
Developed, Medium Intensity	2,229	0.4
Developed, High Intensity	446	0.1
Barren Land (Rock/Sand/Clay)	119	0.02
Deciduous Forest	108,941	18.5
Evergreen Forest	46	0.01
Shrub/Scrub	1	0.00
Grassland/Herbaceous	2,156	0.4
Pasture/Hay	84,056	14.3
Cultivated Crops	327,896	55.6
Woody Wetlands	8,044	1.4
Emergent Herbaceous Wetlands	370	0.06

*3/ See endnote, pg. 28.*

# Classification

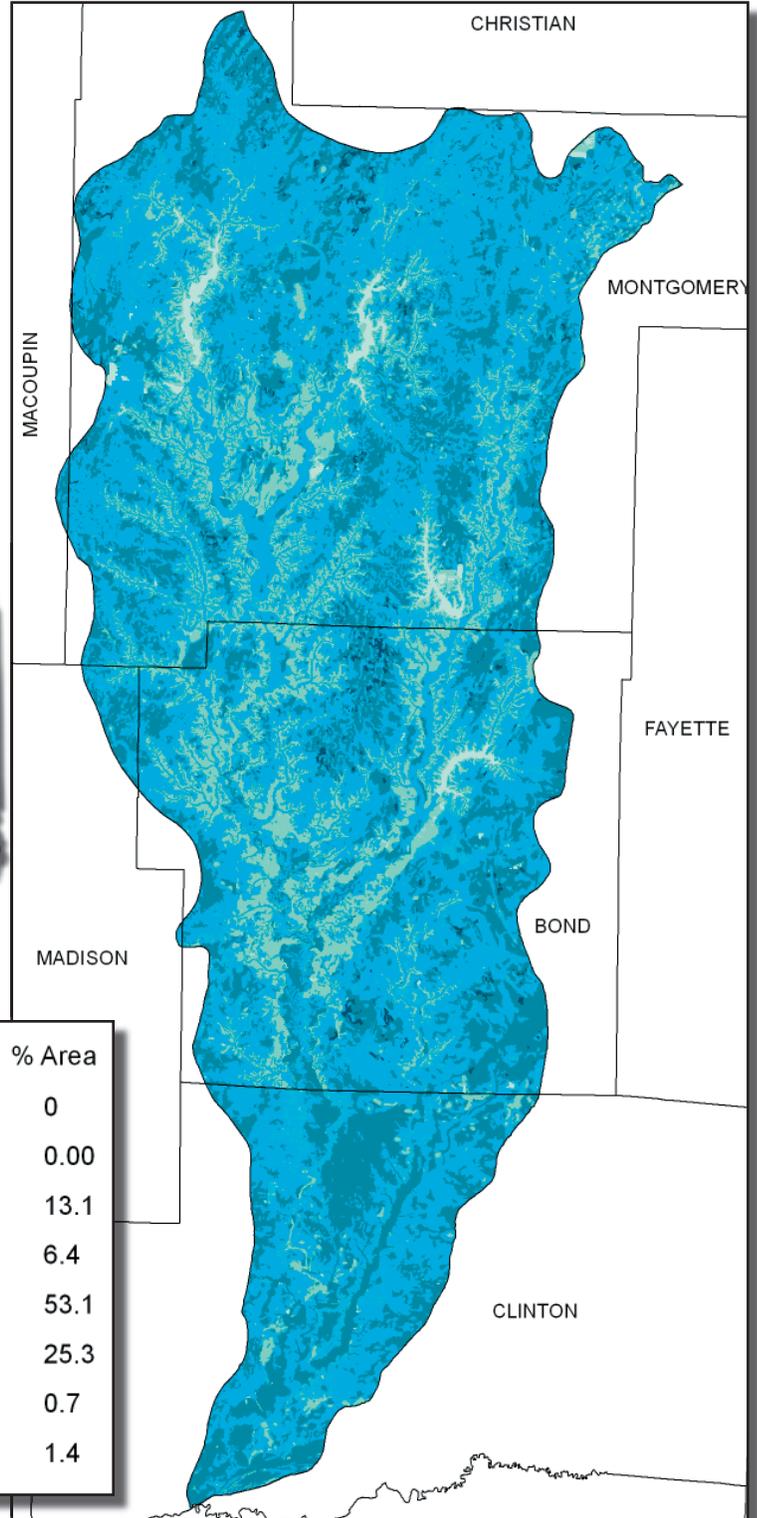
## Drainage

**Shoal Creek Watershed**  
 (IL) HUC: 07140203  
 Total Acres: 586,756

**D**rainage 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” that can be accessed at: <http://soils.usda.gov/technical/manual/>.



Shoal Creek Watershed  
**Classification – Drainage Map**



Drainage Classification	Acres	% Area
Excessively drained	0	0
Somewhat excessively drained	15.8	0.00
Well drained	77,231.9	13.1
Moderately well drained	38,017.3	6.4
Somewhat poorly drained	313,417.2	53.1
Poorly drained	149,094.6	25.3
Very poorly drained	3,971.5	0.7
Unclassified	8,065.7	1.4

# Classification

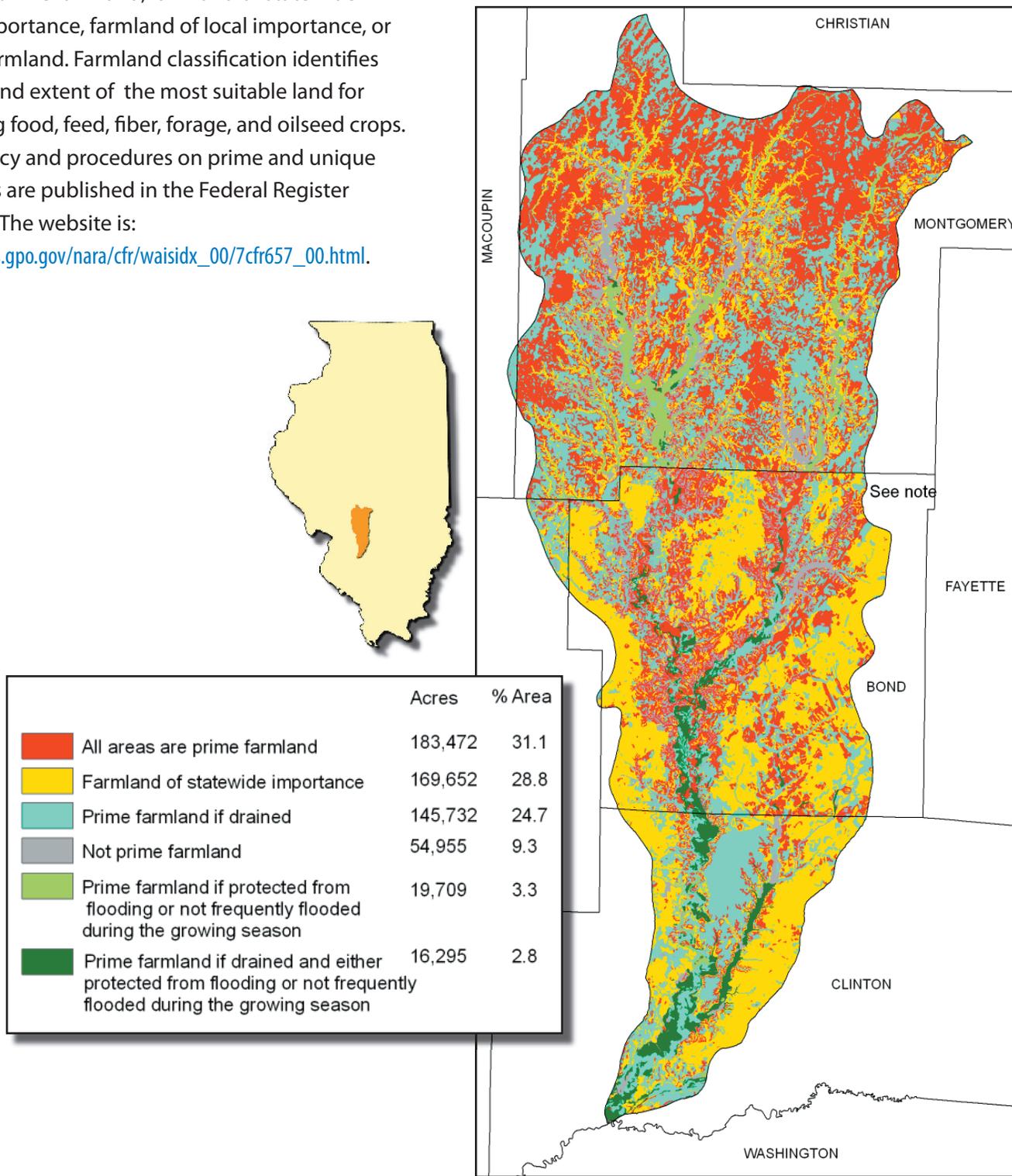
## Farmland

Shoal Creek Watershed  
 (IL) HUC: 07140203  
 Total Acres: 586,756

**F**armland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies 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 7CFR657. The website is: [www.access.gpo.gov/nara/cfr/waisidx\\_00/7cfr657\\_00.html](http://www.access.gpo.gov/nara/cfr/waisidx_00/7cfr657_00.html).



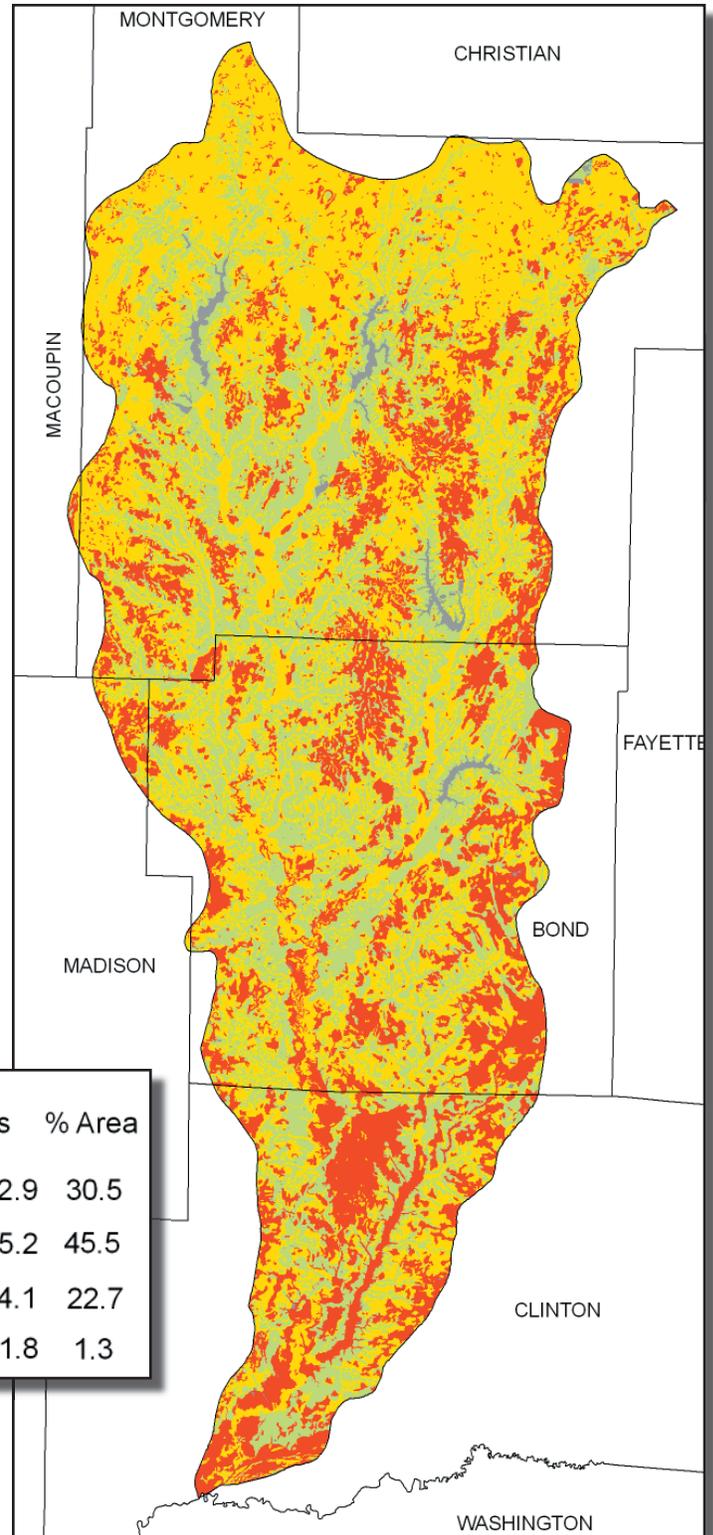
Shoal Creek Watershed  
**Classification – Prime Farmland Map**



5/ See endnote, pgs. 24-25.

This rating provides an indication of the proportion of the map unit that meets criteria for hydric soils. Map units dominantly made up of hydric soils may have small areas or inclusions of non-hydric soils in higher positions on the landscape. Map units dominantly made up of non-hydric soils may have inclusions of hydric soils in lower landscape positions. Partially hydric soils are non-hydric soils with a probability of hydric soil inclusions. 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 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, which are used to make on site determinations of hydric soils. These are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Shoal Creek Watershed  
**Hydric Soils Map**



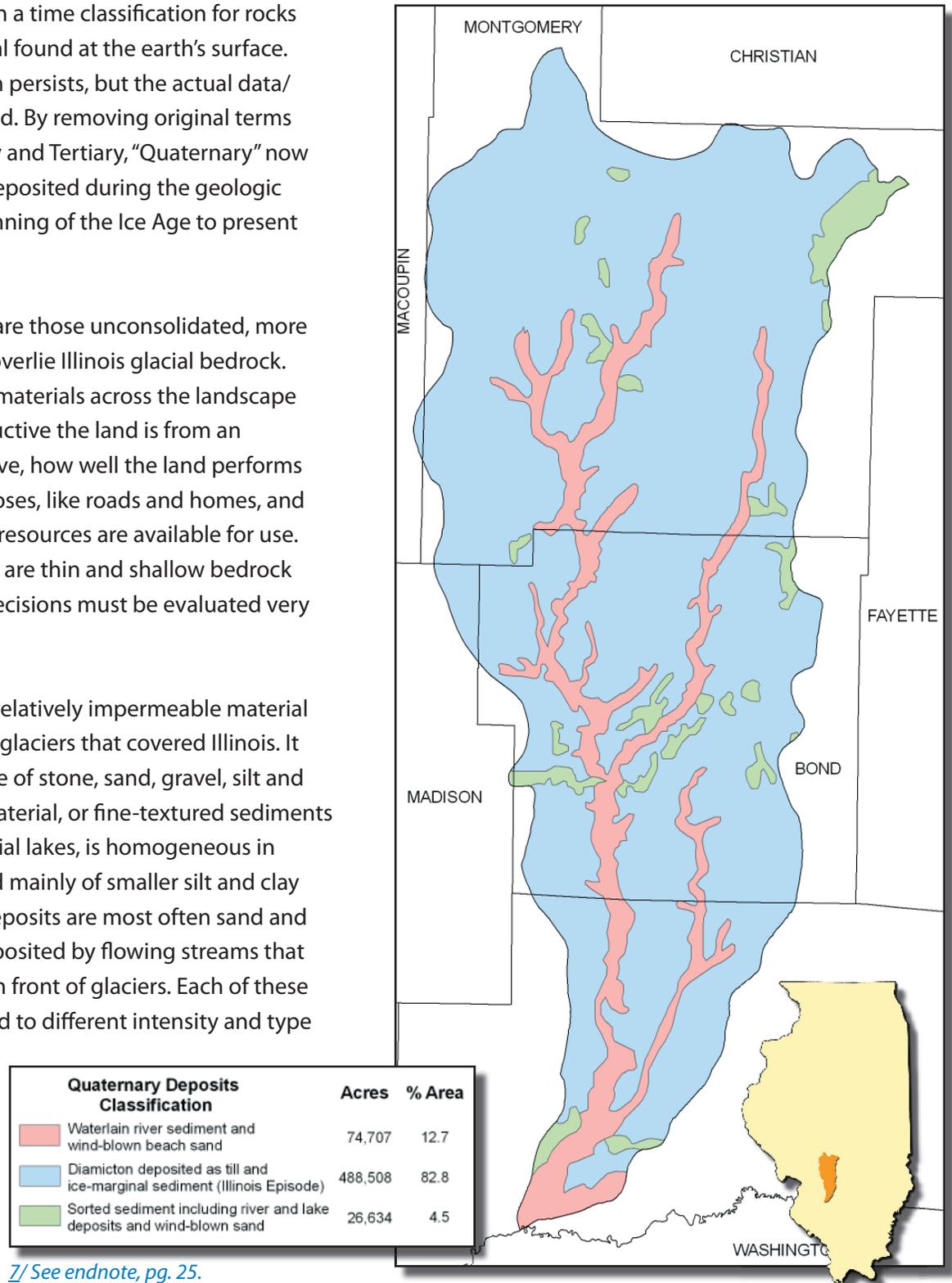
*6/ See endnote, pg. 25.*

**Q**uaternary is a relic term from the 1800's that attempted to subdivide the geological record and establish a time classification for rocks and sediment material found at the earth's surface. Today, use of the term persists, but the actual data/definition has changed. By removing original terms of Primary, Secondary and Tertiary, "Quaternary" now refers to sediments deposited during the geologic period from the beginning of the Ice Age to present day.

Quaternary deposits are those unconsolidated, more recent deposits that overlie Illinois glacial bedrock. Distribution of these materials across the landscape determine how productive the land is from an agricultural perspective, how well the land performs for engineering purposes, like roads and homes, and to what extent water resources are available for use. Where these deposits are thin and shallow bedrock is present, land use decisions must be evaluated very carefully.

Glacial till is a dense, relatively impermeable material deposited directly by glaciers that covered Illinois. It is an unsorted mixture of stone, sand, gravel, silt and clay. The lacustrine material, or fine-textured sediments deposited in pro-glacial lakes, is homogeneous in nature and composed mainly of smaller silt and clay size particles. River deposits are most often sand and sometimes gravel deposited by flowing streams that originated within or in front of glaciers. Each of these materials is best suited to different intensity and type of land use.

Shoal Creek Watershed  
**Quaternary Deposits Classification Map**



*See endnote, pg. 25.*

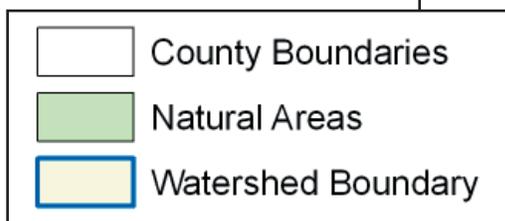
# Public Lands and Natural Areas

Shoal Creek Watershed

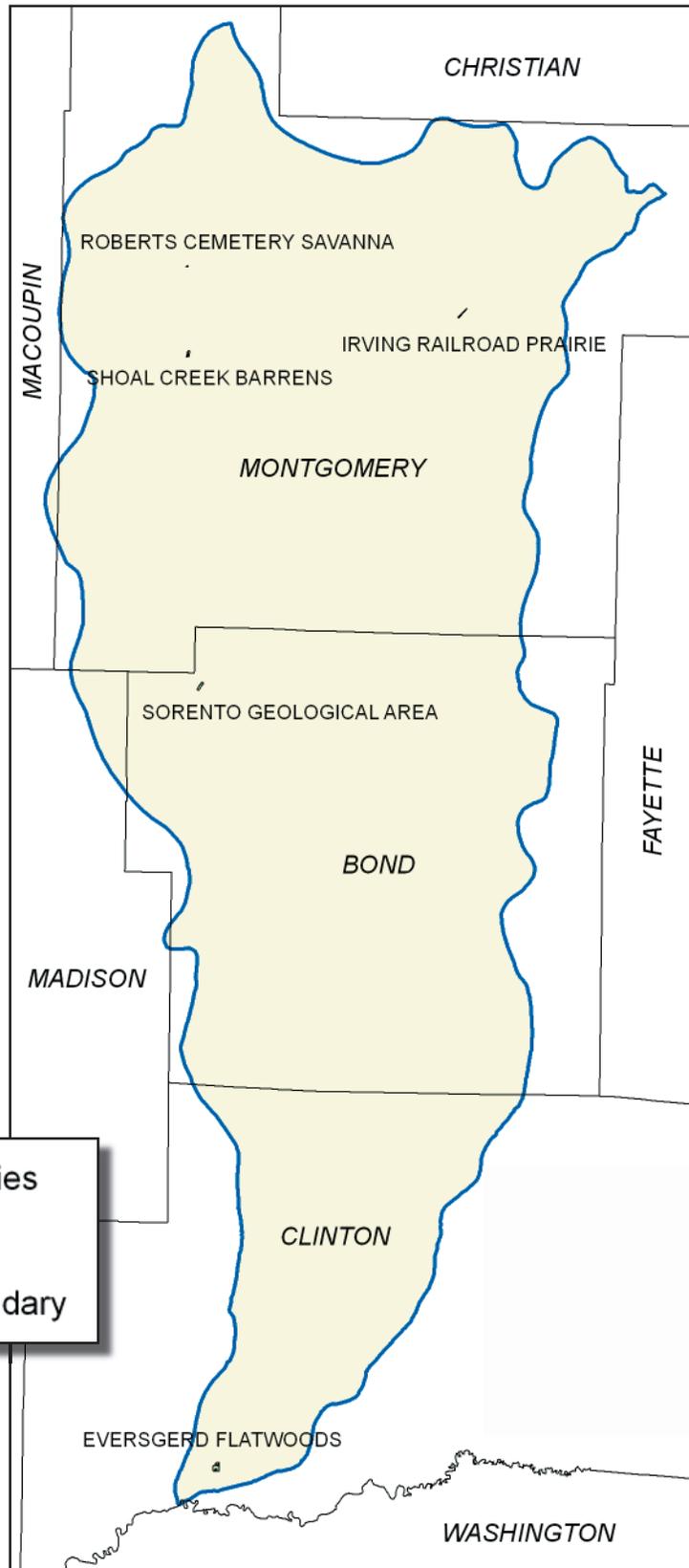
(IL) HUC: 07140203

Total Acres: 586,756

Shoal Creek Watershed  
Public Lands & Natural Areas Map



8/ See endnote, pg. 25.



# Aquifer Sensitivity to Nitrate Leaching

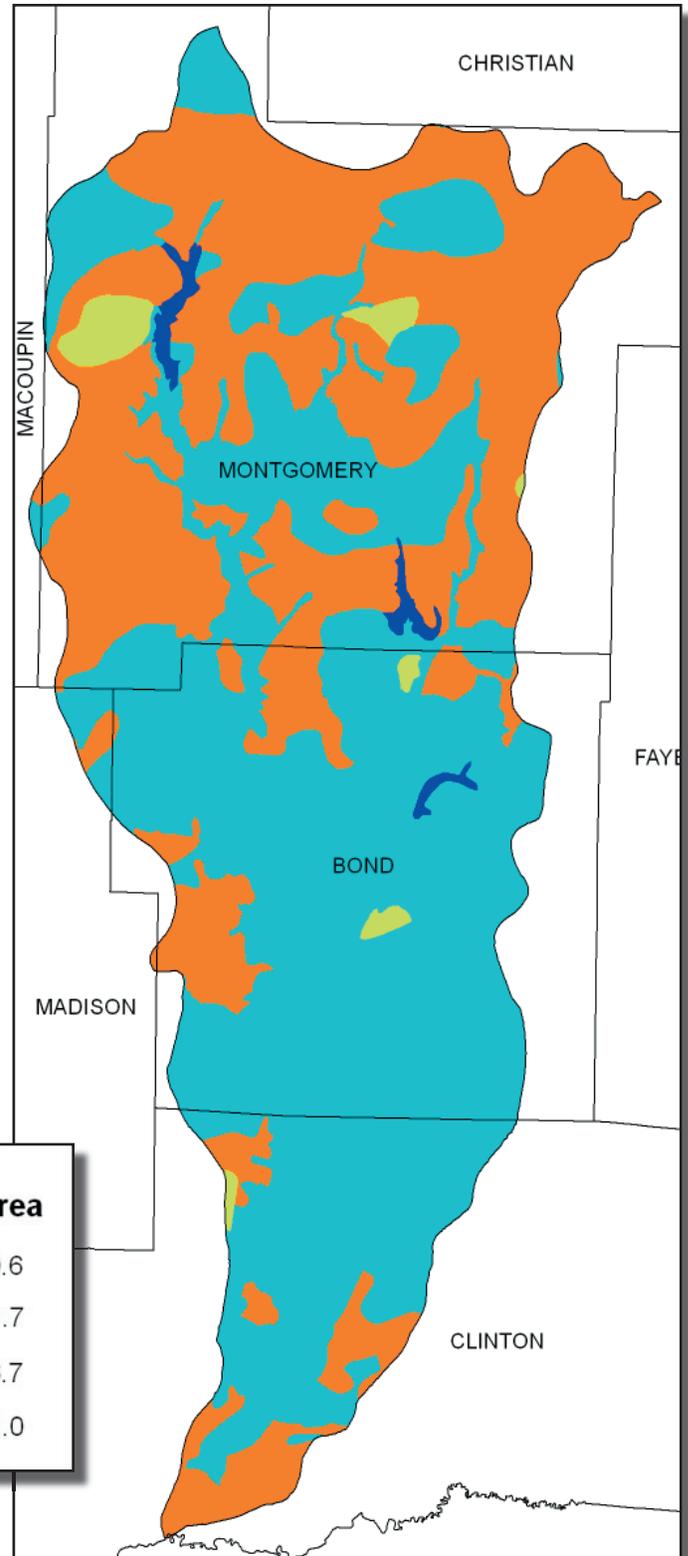
Shoal Creek Watershed  
(IL) HUC: 07140203  
Total Acres: 586,756

The Illinois State Geological Survey (ISGS) statewide Stack-Unit map was used to create a map of depth to the uppermost aquifer, which was then combined with maps of nitrate and pesticide leaching classes to ultimately derive aquifer sensitivity to contamination by nitrate and pesticide leaching. Six aquifer sensitivity classes are shown as indicated on the following page. Disturbed land and surface water areas are also shown. These data are to be used in conjunction with ISGS Environmental Geology Report 148.

This dataset was designed for statewide evaluation of agrichemical leaching characteristics and associated aquifer sensitivity to contamination. It was created to classify soils and aquifer settings according to predictions of leaching potential. Classifications have not been validated by results of water quality sampling. Accordingly, reliability of these aquifer sensitivity ratings as predictors of water quality has not been evaluated.



Shoal Creek Watershed  
**Aquifer Sensitivity to Nitrate Leaching Map**



Aquifer Sensitivity to Nitrate Leaching		Acres	% Area
	High Sensitivity	239,256	40.6
	Somewhat Limited Sensitivity	10,279	1.7
	Very Limited Sensitivity	334,738	56.7
	Surface water bodies	5,606	1.0

[9/ See endnote, pg. 26.](#)

# Aquifer Sensitivity to Pesticide Leaching

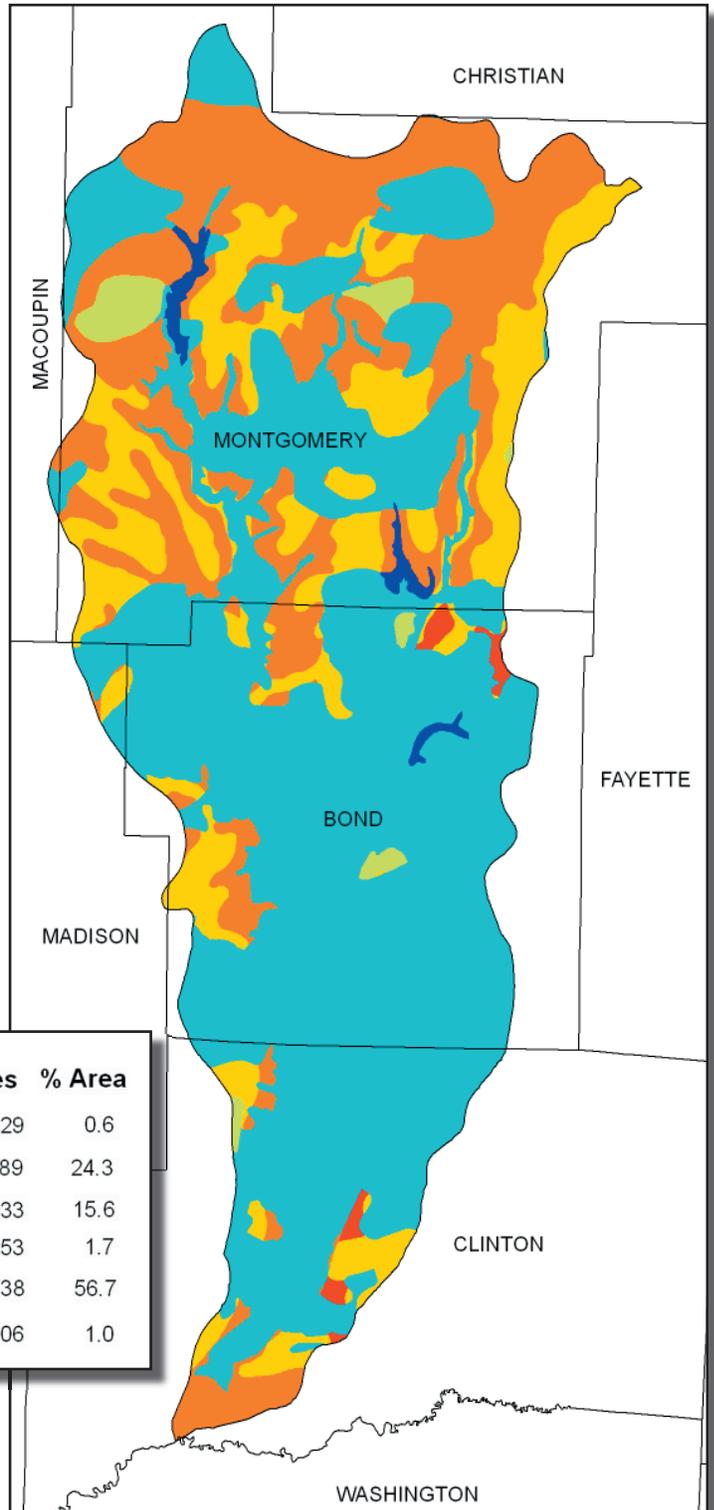
## Potential of Agricultural Chemical Contamination of Aquifers

Shoal Creek Watershed  
(IL) HUC: 07140203  
Total Acres: 586,756

Two statewide datasets were identified as containing information that would be useful for producing aquifer sensitivity maps: a soil association map (and database) and a map of geologic materials to a depth of 50 feet (Stack-Unit map). The soil association map and database were used in an interpretive mapping model that generated maps of nitrate and pesticide leaching classes by examining factors that relate to water movement characteristics of the soil. The pesticide contamination sensitivity dataset was created by combining the nitrate map interpretations with information on the distribution of organic matter. (Pesticides are organic compounds that tend to adsorb to soil organic matter, and so have their movement in soil water retarded.)

One of the results is six nitrate and six pesticide leaching classes that group soil associations based on relative probability of nitrate and pesticide movement through associated soil profiles. The ranking is qualitative, and is based on the median leaching value of soil map units that comprise each soil association. Leaching classes are listed in the legend below. *See Illinois State Geological Survey (ISGS) EG 148 for the derivation of these classes.*

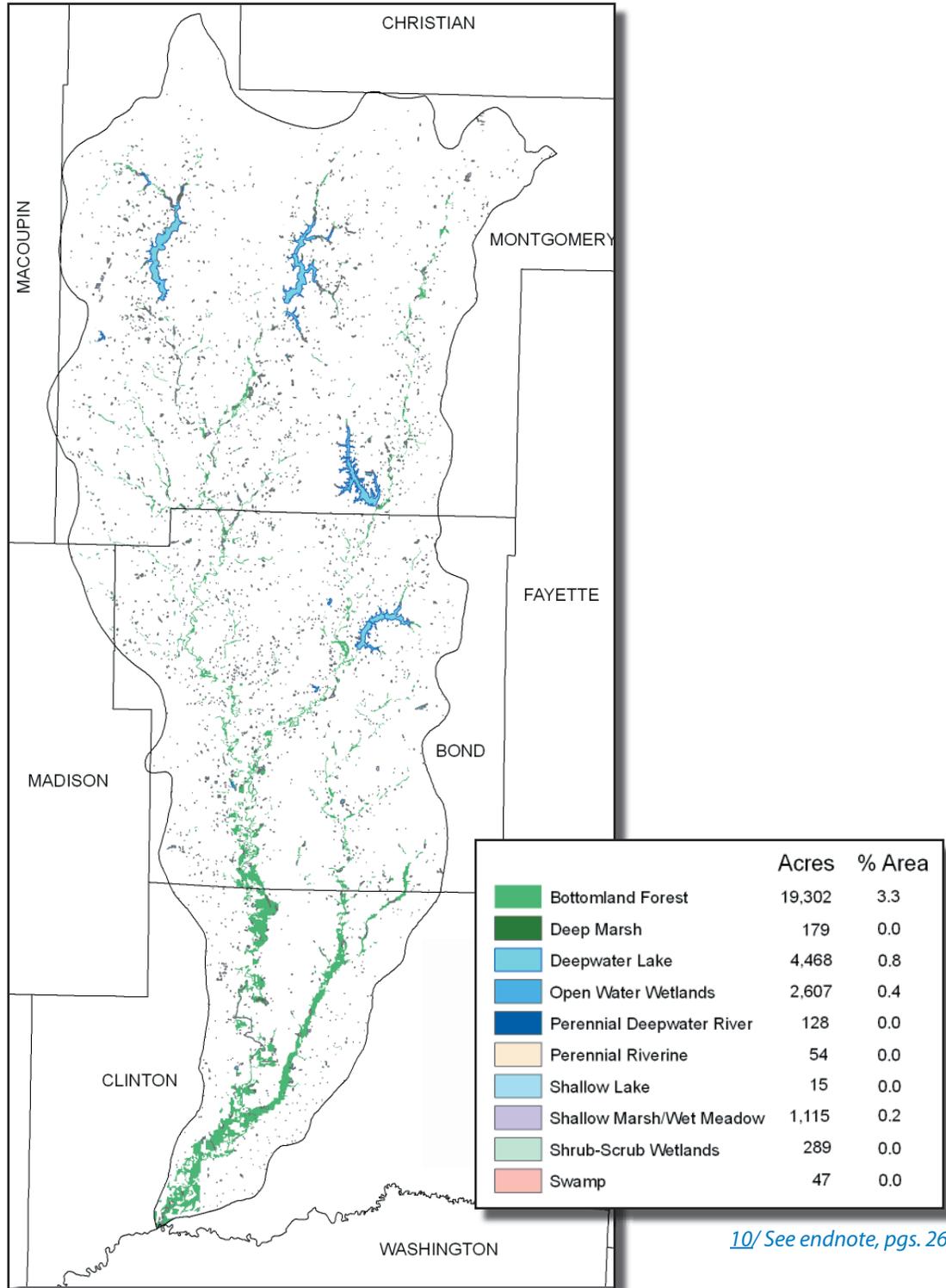
Shoal Creek Watershed  
**Aquifer Sensitivity to Pesticide Leaching Map**



9/ See endnote, pg. 26.



Shoal Creek Watershed  
**Wetland Inventory Map**



*10/ See endnote, pgs. 26.*

# 303(d) Impaired Waters

## 303D Designations for Streams in Shoal Creek Watershed

**Shoal Creek Watershed**  
 (IL) HUC: 07140203  
 Total Acres: 586,756

**D**esignations listed by IEPA for the streams, segments of streams, and/or open water bodies in this watershed are considered to be either **\*Medium** or **High** in priority. Each unit for consideration is designated by a 10-digit HUC. Within each, entire streams, segments of streams and open water have been evaluated and assigned a rating. Contaminants of fecal coliform bacteria will cause a swimming impaired use. Mercury and polychlorinated biphenols in fish tissue or sediments will cause a fish consumption impaired use. Low dissolved oxygen, high nutrient level, excessive siltation, physical habitat alteration, and high suspended solids will cause an aquatic life impaired use. For detailed listing of all designations and more detailed information please refer to this website: [www.epa.state.il.us/water/](http://www.epa.state.il.us/water/).

### Shoal Creek Watershed —Impaired Waters

305B Segment ID	NAME	PRIORITY	HUC_10	Miles/Acres	Designated Use	Potential Cause(s)
IL_RON	Lou Yaeger Lake	Medium	0714020301	1,268.5 Ac.	Aesthetic Quality	Phosphorus (Total)
IL_ROL	Glen Shoals Lake	High	0714020302	1,350 Ac.	Fish Consumption	Mercury
IL_ROP	Governor Bond Lake	Medium	0714020303	775 Ac.	Public Water Supply	Manganese
IL_OI-05	Shoal Creek	Medium	0714020306	12.39 Mi.	Aquatic Life	Phosphorus (Total), Sedimentation/Siltation,
IL_OI-13	Shoal Creek	Medium	0714020306	10.87 Mi.	Aquatic Life	Cause Unknown
IL_OI0-09	Chicken Creek	Medium	0714020306	1.92 Mi.	Aquatic Life	Dissolved Oxygen (Nonpollutant), Phosphorus
IL_OIP-10	Cattle Creek	Medium	0714020306	2.71 Mi	Aquatic Life	Dissolved Oxygen (Nonpollutant), Phosphorus
IL_O-25	Kaskaskia River	Medium	0714020209	16.76 Mi.	Aquatic Life	Cause Unknown

**\* Note:** Prioritization is done on a watershed basis, not by individual stream segments. It is based on the 10-digit HUC. This prioritization is used in setting goals for Total Maximum Daily Load (TMDL) development. **Medium** priority means that the watershed contains one or more waters that are Not Supporting aquatic life use, fish consumption use, or primary contact (swimming) use. **High** priority means that the watershed contains one or more waters that are NOT Supporting public water supply use and food processing.

Following the requirements of the Clean Water Act, the Illinois Environmental Protection Agency (IEPA) assesses and reports on the quality of the surface water (e.g., lakes, streams, and wetlands) and groundwater resources in the state. Streams and lakes are analyzed using biological, physiochemical, physical habitat, and toxicity data. Designated uses are identified for these water resources and impairments to achieving these uses are noted. The 303(d) List of Impaired Waters is prepared every two years to document the state's waters where uses are impaired, the pollutant(s) causing the impairment, and a priority ranking for the development of a Total Maximum Daily Load (TMDL) standard.

For Illinois streams, the major potential causes of impairment are pathogens (fecal coliform bacteria) that impair swimming (primary contact) use, mercury and PCBs in fish tissue or sediments. They impair fish consumption use, and low dissolved oxygen, high nutrients, excessive siltation, physical-habitat alterations, and high suspended solids that impair aquatic life use. The potential sources of these causes are atmospheric deposition of toxins, agriculture, hydromodification, municipal point sources, urban runoff/storm sewers, surface mining, and impacts from hydrostructure flow regulation and modification.

For Illinois inland lakes, the major potential causes of impairment based on lake acres affected are mercury and PCBs in fish tissue or sediments impairing fish consumption use, and phosphorus (total), aquatic algae, and total suspended solids impairing aquatic life and aesthetic quality uses. The potential major sources of these causes are: atmospheric deposition of toxins, crop production, littoral/shore area modification (nonriverine), other recreational pollution sources,

runoff from forest/grassland/parkland, contaminated sediments, urban runoff/storm sewers, municipal point source discharges, and on-site treatment systems (septic systems and similar decentralized systems).

## Shoal Creek Watershed 303(d) Impaired Waters Map



11/ See endnote, pg. 26.

# Conservation on the Ground

## Practice Summary

**Shoal Creek Watershed**  
 (IL) HUC: 07140203  
 Total Acres: 586,756

The major resource concerns from working lands in the watershed include gully erosion, streambank erosion, soil erosion, flooding, and water quality. Stabilization is needed in many creeks and tributaries as culverts and ditches are plugged with sediment. Some Best Management Practice (BMPs) well-suited to address these concerns include buffers strips, water and sediment control basins, terraces, grassed waterways, grade stabilization structures, and streambank stabilization restoration projects.

### Shoal Creek Watershed

#### PRS Summary

Conservation Practice	2005	2006	2007	2008 (3 Qtr.)
0.10 - Conservation plans written (Ac.)	10,262	12,751	14,388	4,357
0.20 - Watershed or area-wide conservation plans developed (No.)	0	0	0	0
1.10 - Cropland with conservation applied to improve soil quality (Ac.)	5,835	10,324	9,154	4,448
2.10 - Land with conservation applied to improve water quality (Ac.)	0	0	8,104	4,724
2.11 - CNMP written (No.)	2	2	14	4
2.12 - CNMP applied (No.)	4	3	7	4
3.10 - Grazing and forest land with conservation applied to protect and improve the resource base (Ac.)	78	473	943	292
3.20 - Non-federal land with conservation applied to improve fish and wildlife habitat quality (Ac.)	17,224	3,316	4,624	1,117
3.30 - Wetlands created, restored or enhanced (Ac.)	54	12	6	0

# Conservation on the Ground

## PRS Performance Measures

Shoal Creek Watershed  
(IL) HUC: 07140203  
Total Acres: 586,756

Shoal Creek Watershed

### Conservation Practices Planned/Applied FY04 - FY08

Summary Conservation Practices	Planned/Applied				
	FY08 (3 Qtr.)	FY07	FY06	FY05	FY04
Access Road (560) (ft)	1,320/1,320	0/0	50/0	0/0	0/0
Brush Management (314) (ac)	47/0	0/0	0/0	0/0	0/0
Comprehensive Nutrient Mgmt Plan (100) (no)	2/4	10/7	3/3	15/4	0/0
Conservation Cover (327) (ac)	52/18	3,327/424	1,957/1,514	906/881	313/267
Conservation Crop Rotation (328) (ac)	3,969/1,773	5,792/5,054	4,798/17,552	8,200/8,937	7,924/6,690
Contour Farming (330) (ac)	0/0	0/0	26/144	0/0	0/0
Cover Crop (340) (ac)	0/0	0/0	2/63	0/9	0/0
Critical Area Planting (342) (ac)	11/1	0/0	5/9	3/5	3/3
Diversion (362) (ft)	200/450	0/0	1,975/1,200	3,700/0	2,990/0
Early Successional Habitat Development/Mgmt (647) (ac)	136/0	965/0	1160/0	0/0	0/0
Fence (382) (ft)	17,055/0	12,699/19,812	16,852/7,945	5,300/57,392	17,9173/14,071
Field Border (386) (ft)	80,121/10,400	11,5513/42,489	38,5375/13,1791	6,5052/0	0/0
Filter Strip (393) (ac)	6/0	144/33	33/281	61/113	199/180
Firebreak (394) (ft)	0/0	0/0	33/281	0/0	0/0
Forage Harvest Management (511) (ac)	7/7	25/0	48446/2468	60/44	64/90
Forest Stand Improvement (666) (ac)	67/5	39/20	121/117	96/3	25/0
Grade Stabilization Structure (410) (no)	3/0	2/1	0/0	4/1	15/7
Grassed Waterway (412) (ac)	1/1	11/4	12/9	16/26	25/16
Heavy Use Area Protection (561) (ac)	26/0	19/2	24/54	2/19	33/0
Manure Transfer (634) (no)	5/1	2/2	20/0	0/0	1/0
Nutrient Management (590) (ac)	1377/822	1183/441	0/0	4989/485	689/265
Pasture and Hay Planting (512) (ac)	47/8	19/28	3155/415	553/523	363/46
Pest Management (595) (ac)	0/0	17/0	54/242	37/0	0/0
Pipeline (516) (ft)	0/0	1500/19664	0/84	9350	37467/5027
Planned Grazing System (762) (ac)	0/0	0/0	6855/2105	49059	122/0
Prescribed Burning (338) (ac)	0/0	145/0	16/16	0/1	0/0
Prescribed Forestry (409) (ac)	169/44	608/235	587/0	12/0	0/0
Prescribed Grazing (528) (ac)	285/205	30/87	0/0	0/0	0/0
Prescribed Grazing (528A) (ac)	0/0	0/0	223/295	0/0	928/102
Pumping Plant (533) (no)	0/0	0/1	0/107	299/242	1/0

[more >](#)

# Conservation on the Ground

## PRS Performance Measures (Continued)

Shoal Creek Watershed  
(IL) HUC: 07140203  
Total Acres: 586,756

Shoal Creek Watershed

### Conservation Practices Planned/Applied FY04 - FY08 (Continued)

Residue and Tillage Management, Mulch Till (345) (ac)	3258/986	5816/6188	0/0	0/0	0/0
Summary Conservation Practices	Planned/Applied				
	FY08 (3 Qtr.)	FY07	FY06	FY05	FY04
Residue and Tillage Management, No-Till/Strip Till/Direct Seed (329) (ac)	742/320	598/680	0/0	0/0	0/0
Residue Management, Mulch Till (329B) (ac)	0/369	10/57	4,454/14,351	6,652/8,111	7,225/6,257
Residue Mgmt, No-Till/Strip Till (329A) (ac)	0/0	0/6	850/2,944	457/618	234/198
Residue Management, Seasonal (344) (ac)	443/0	1,342/1,322	1,826/13,689	4,219/5,709	376/190
Restoration & Mgmt Rare/Declining Habitats (643) (ac)	0/0	0/0	3/3	0/0	0/0
Riparian Forest Buffer (391) (ac)	13/31	76/10	67/411	349/161	118/37
Roof Runoff Structure (558) (no)	1/1	0/1	0/0	1/7	2/0
Shallow Water Development & Mgmt (646) (ac)	2/0	9/11	0/18	12/11	0/0
Spring Development (574) (no)	1/0	0/0	0/0	1/0	1/0
Streambank & Shoreline Protection (580) (ft)	400/400	0/0	0/0	1,970/0	2,350/0
Subsurface Drain (606) (ft)	1,640/0	0/0	0/0	0/0	0/0
TA Planning (910) (no)	0/0	0/0	0/0	0/1	0/0
Terrace (600) (ft)	2,325/0	0/0	18,450/15,285	1,800/3,000	0/0
Tree/Shrub Establishment (612) (ac)	0/0	29/5	0/56	4/16	23/18
Underground Outlet (620) (ft)	8,683/4,545	650/1,340	38,710/17,980	13,370/2,340	9,131/2,314
Upland Wildlife Habitat Mgmt (645) (ac)	1,685/1,102	5,158/4,456	3,782/2,737	3,191/2,859	399/381
Use Exclusion (472) (ac)	129/3	855/151	1,409/1,140	453/142	309/191
Vertical Drain (630) (no)	0/0	0/0	64/21	16/4	26/2
Waste Storage Facility (313) (no)	3/1	1/0	0/0	2/7	5/0
Waste Treatment Lagoon (359) (no)	0/0	0/0	0/0	0/0	2/0
Waste Utilization (633) (ac)	3,536/1,721	8,807/468	592/4	351/466	409/223
Water & Sediment Control Basin (638) (no)	22/9	11/7	991/33	33/8	19/0
Water Well (642) (no)	0/0	0/1	0/0	0/0	4/0
Watering Facility (614) (no)	1/0	4/9	14/4	271/264	45/4
Well Decommissioning (351) (no)	0/0	1/1	0/0	0/1	0/0
Wetland Creation/Enhancement & Restoration (657/658/659) (ac)	0/0	9/6	7/12	56/48	0/0
Wetland Wildlife Habitat Mgmt (644) (ac)	0/15	163/168	14/10	0/0	0/0
Wildlife Watering Facility (648) (no)	0/0	0/0	0/0	1/0	2/1
Windbreak/Shelterbelt Establishment (380) (ft)	2,400/2,400	1,521/0	0/9,277	2927/4021	9,295/7,970
			<b>0/9,277</b>	<b>2,927/4,021</b>	

**T**here are 1,468 farms in the watershed covering a total of 468,117 acres. Average farm size in the watershed is 319 acres compared to a statewide average of 374 acres in Illinois. Please refer to table below for more detailed information or visit the web site of the Illinois office of the National Agriculture Statistics Service at: [www.nass.usda.gov/statistics](http://www.nass.usda.gov/statistics).

## Farm Census Data

Land Use	Bond	Clinton	Macoupin	Madison	Montgomery
Farms (number)	535	252	12	12	657
Land in farms (acres)	154,326	70,227	598	3,105	238,393
Total cropland (acres)	4	62,759	518	2,756	215,226
Irrigated land (farms)	0	3	1	1	7
Principal operator by primary occupation-farming (no.)	325	165	118	7	404
<b>Farms by size:</b>					
1 to 9 acres	24	13	8	1	23
10 to 49 acres	157	60	38	3	153
50 to 179 acres	155	67	49	3	178
180 to 499 acres	94	70	39	2	142
500 to 999 acres	67	30	21	1	95
1,000 acres or more	39	11	16	1	62
<b>Livestock and poultry:</b>					
Cattle and calves inventory (farms)	148	102	52	4	190
Beef cows (farms)	99	34	43	3	151
Milk cows (farms)	27	35	2	1	13
Hogs & pigs inventory (farms)	24	14	12	1	35
Sheep & lambs inventory (farms)	17	7	5	1	12
Layers 20 weeks old & older inventory (farms)	19	5	3	1	14
Broilers & other meat-type chickens sold (farms)	2	0	0	0	3
<b>Selected crops harvested:</b>					
Corn for grain (acres)	44,645	21,032	248	1,008	98,611
Corn for silage/greenchop (acres)	1,276	2,255	228	12	671
Wheat for grain, All (acres)	13,730	7,994	1,177	232	6,426
Winter wheat for grain (acres)	13,730	7,994	1,177	232	6,426
Oats for grain (acres)	0	48	10	0	15

## Social Census for 1990

Total Population	White	Af_Amer	Native	Asian	Other	Hispanic	PCAP Income
50,490	49,224	768	219	103	176	413	\$10,827

## Social Census for 2000

Total Population	White	Black	Amer_ES	Asian	Hawn_PI	Other	Multi_Race	Hispanic	PCAP Income
55,074	51,930	2,313	140	141	15	245	296	684	\$17,743



**C**urrent activities in the Shoal Creek Watershed related to natural resource conservation, protection and restoration are limited. Water quality conditions have been monitored and conservation solution strategies have been researched for Lake Lou Yeager. A technical team met in 1998 to begin developing a Resource Plan that would address issues and engage partners and local landowners.

With help from NRCS, the Illinois Environmental Protection Agency, lake managers and local officials, Total Maximum Daily Load (TMDL) goals and objectives will be developed within the watershed for all impaired water bodies. These will describe all necessary elements of the TMDL, develop an implementation plan for each TMDL, and gain public acceptance of the process. This information will be developed for the following impaired water body segments: Shoal Creek, Locust Fork, Chicken Creek, Cattle Creek, and Sorento Reservoir. Clinton County was awarded \$190,000 to conduct a Water Quality Special Project

to address agriculture related Non-Point Source Pollution within the northern section of Shoal Creek within their county. Funds were allocated for construction of six animal waste systems built between 1993 and 1997. No major funds are targeted toward implementation of a plan at present, but there has been participation by landowners within the watershed in USDA and Illinois Department of Agriculture programs.

NRCS hopes that development of this Rapid Watershed Assessment document will facilitate the ability of local leaders and decision-makers to compile data, identify resource issues and concerns, and develop a plan of action for residents of the watershed. It is through the interests and actions of local people that progress is made and sustained in natural resource improvements and ecosystems across Illinois. Many private landowners in the watershed use local, state and federal programs to access guidance, solutions and financial assistance in order to manage their land and resources in a sustainable manner. Working with locally elected leaders, the local Soil and Water Conservation Districts have identified the top resource concerns which include:

- Flooding
- Sheet and Rill Erosion
- Streambank Erosion and Maintenance
- Surface Water Quality
- Education—Conservation Practices & Farm Programs
- Water Quality – Livestock Waste Concerns
- Water Quality Nutrient Runoff/Fertilizer
- Wildlife Habitat Management—Control & Improvements

Future environmental successes within this watershed will be made possible by bringing together local entities, private landowners and others. By creating a diverse and like-minded team, the resources, productivity, economic outcomes and quality of life can be improved upon in the area and the region. For more information on how local watershed planning initiatives can succeed, contact your local Soil and Water Conservation District or USDA Natural Resources Conservation Service or visit [www.il.nrcs.usda.gov](http://www.il.nrcs.usda.gov).

## 1 Elevation & Annual Precipitation — (Page 5)

The relief map was created using United States Geological Survey (USGS) 7.5 minute 30 meter Digital Elevation Models (DEMs). A painted relief model was applied to the DEMs to create the relief map. For more information on USGS DEMs, visit: <http://edc.usgs.gov/guides/dem.html> and <http://data.geocomm.com/dem/>. For more information on creating painted relief maps visit: <http://gis.esri.com/library/userconf/proc99/proceed/papers/pap182/p182.htm>.

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 USDA 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 dataset from which the polygons and vectors were created. For more information about PRISM visit [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/> and <http://datagateway.nrcs.usda.gov/Catalog/ProductDescription/PRCIP.html>.

## 2 Common Resource Areas — (Page 6-7)

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 Land Cover — (Page 8)

The National Land Cover Database 2001 land cover layer was produced through a cooperative project conducted by the Multi-Resolution Land Characteristics (MRLC) Consortium. The MRLC Consortium is a partnership of federal agencies ([www.mrlc.gov](http://www.mrlc.gov)), consisting of the U.S. Geological Survey (USGS), the National Oceanic and

Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA), the U.S. Forest Service (USFS), the National Park Service (NPS), the U.S. Fish and Wildlife Service (USFWS), the Bureau of Land Management (BLM) and the USDA Natural Resources Conservation Service (USDA-NRCS). One of the primary goals is to generate a current, consistent, seamless, and accurate National Land Cover Database (NLCD) circa 2001 for the United States at medium spatial resolution. The 2001 refers to the nominal year from which most of the Landsat 5 and Landsat 7 imagery was acquired. Visit: <http://datagateway.nrcs.usda.gov/Catalog/ProductDescription/NLCD.html>.

This land cover map and all documents pertaining to it are considered “provisional” until a formal accuracy assessment can be conducted. For a detailed definition and discussion on MRLC and the NLCD 2001 products, refer to Homer et al. (2004) - [www.mrlc.gov/pdfs/July\\_PERS.pdf](http://www.mrlc.gov/pdfs/July_PERS.pdf); and [www.mrlc.gov/mrlc2k.asp](http://www.mrlc.gov/mrlc2k.asp). The NLCD 2001 was created by partitioning the U.S. into mapping zones. A total of 66 mapping zones were delineated within the conterminous U.S. based on ecoregion and geographical characteristics, edge matching features, and the size requirement of Landsat mosaics. The completed single pixel product was generalized to a 1-acre minimum mapping unit product. The data was downloaded from the NRCS Geospatial Data Gateway <http://datagateway.nrcs.usda.gov/>.

## 4 Drainage Classification — (Page 9)

Drainage classification was created from the United States Department of Agriculture – Natural Resource Conservation Service’s (USDA-NRCS) Soil Survey Geographic (SSURGO) Database. 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.

## 5 Farmland Classification — (Page 10)

Farmland classification was created from the United States Department of Agriculture – Natural Resource Conservation Service’s (USDA-NRCS) Soil Survey Geographic (SSURGO) Database. Visit the online Web Soil Survey at

[more >](#)

## 5- Farmland Classification *(Continued)*

<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.

**Note:** The work to resolve inconsistencies brought on by the county-based soil survey approach of implementing the Major Land Resource Area soil survey method is currently underway. By typifying soil series and map unit concepts across similar geographic areas instead of by political boundaries, previous inconsistencies between counties will now 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.

## 6 Hydric Soils — *(Page 11)*

Hydric soils classification was created from the United States Department of Agriculture – Natural Resource Conservation Service's (USDA-NRCS) Soil Survey Geographic (SSURGO) Database. 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.

## 7 Quaternary Deposits — *(Page 12)*

Quaternary Deposits of Illinois data was created by the Illinois State Geological Survey. This feature dataset is a generalized version of Quaternary Deposits of Illinois. Updated to reflect the aerial distribution of the Wedron and Mason Groups (Wisconsin and Hudson Episodes) and deposits of the Illinoian and pre-Illinoian episodes in Illinois as described in ISGS Bulletin 104. Episodes are diachronic temporal units. Refer to primary sources for more information. Scale is 1:2,500,000.

Source: Digital Databases of Illinois, CD-ROM, Volume 1, 1994. Illinois Department of Energy and Natural Resources. Visit: [www.isgs.uiuc.edu/nsdihome/webdocs/st-geolq.html](http://www.isgs.uiuc.edu/nsdihome/webdocs/st-geolq.html) and [www.isgs.uiuc.edu/nsdihome/outmeta/IL\\_Quat\\_Units\\_2500K\\_1996.html](http://www.isgs.uiuc.edu/nsdihome/outmeta/IL_Quat_Units_2500K_1996.html).

## 8 Public Lands and Natural Areas — *(Page 13)*

### Natural Areas

- Illinois Department of Natural Resources—  
Division of Natural Heritage
- Institute of Natural Resource Sustainability,  
Illinois Natural History Survey—University of Illinois

*This dataset depicts the natural areas in Illinois, digitized from U.S. Geological Survey (USGS) 7.5 minute quadrangles or from aerial photographs at a scale of 1:8,000.*

### Federal land

- Institute of Natural Resource Sustainability,  
Illinois Natural History Survey—University of Illinois
- Illinois Department of Natural Resources (IDNR)

*Datasets digitized from maps provided by U.S. Fish and Wildlife Service (USFWS), county plat books, and 1:24,000 quadrangle maps.*

### Illinois State Fish and Wildlife Areas

- Institute of Natural Resource Sustainability,  
Illinois Natural History Survey—University of Illinois

*Datasets digitized from maps provided by IDNR, county plat books, USGS TIGER files, and 1:24,000 quadrangle maps. The Illinois Department of Conservation Land and Water Report of 30 June 1994 was used as a reference.*

### Illinois State Conservation Areas

- Institute of Natural Resource Sustainability,  
Illinois Natural History Survey—University of Illinois
- Illinois Department of Natural Resources (IDNR)

*Datasets digitized from maps provided by IDNR, county plat books, USGS TIGER files, and 1:24,000 quadrangle maps. The Illinois Department of Conservation Land and Water Report of 30 June 1994 was used as a reference.*

[more >](#)

## **9** **Aquifer Sensitivity to Nitrate and Pesticide Leaching** — (Page 14-15)

From: "Potential of Agrichemical Contamination of Aquifers" ISGS Illinois Natural Resources Geospatial Data Clearinghouse.

A statewide dataset for evaluating the potential for contamination of shallow aquifers by pesticides and nitrates. The sources of this dataset were published and digitized at 1:250,000; however, the soils map and depth to aquifer map (Stack-Unit map) were generated from source data mapped at 1:15,000 and 1:64,000, respectively. This aquifer sensitivity map was published at 1:500,000 (statewide map), and 1:250,000 (county maps). Nominal scale is 1:250,000. ISGS. Visit [www.isgs.uiuc.edu/nsdihome/webdocs/st-hydro.html](http://www.isgs.uiuc.edu/nsdihome/webdocs/st-hydro.html) and [www/isgs/uiuc.edu/nsdihome/outmeta/IL\\_Aquifer\\_Agri\\_Contam\\_Potent.htm](http://www/isgs/uiuc.edu/nsdihome/outmeta/IL_Aquifer_Agri_Contam_Potent.htm).

## **10** **National Wetland Inventory** — (Page 16)

U.S. Fish and Wildlife Service, Illinois Department of Natural Resources, and Illinois Natural History Survey. Visit: [www.isgs.uiuc.edu/nsdihome/outmeta/IL\\_NWI\\_Wetlands\\_1987.html](http://www.isgs.uiuc.edu/nsdihome/outmeta/IL_NWI_Wetlands_1987.html).

This feature dataset contains wetlands and deepwater habitats in Illinois as of 1987 based on U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) data. This feature dataset was quickly assembled from old Arc/Info coverages to produce a general representation of the State of Illinois and has not been reviewed or quality-controlled in any way and is not supported.

Attributes include NWI and IDNR identifiers and text designation of habitat. The data are in the Geographic Coordinate System, decimal degrees, NAD83. There are 13 habitat designations. Some examples are Bottomland Forest, Emergent Lake, Intermittent Riverine, Open Water Wetlands, and Swamp.

More recent data may be available at the NWI web site [www.fws.gov/nwi/](http://www.fws.gov/nwi/). Data are available for download at that site by 1:24,000-scale and 1:100,000-scale quadrangle. Original NWI metadata are also available there. Edits to this dataset were made by the USDA Natural Resources Conservation Service's Carbondale Major Land Resource Area Soil Survey Office.

## **11** **303(d) Impaired Waters** — (Page 18)

Reference: Illinois EPA. 2008. Illinois Integrated Water Quality Report and Section 303(d) List-2008. Bureau of Water, Watershed Management Section, Springfield, IL [www.epa.state.il.us/water/tmdl/303d-list.html](http://www.epa.state.il.us/water/tmdl/303d-list.html).