

BEAR CREEK WATERSHED (LW14)

The Bear Creek watershed drains 126.5 square miles. Bear Creek, the main water resource in the watershed, drains to the Wisconsin River in southeastern Richland and southwestern Sauk counties. The southern portion of watershed lacks surface water features. Much of the watershed is in the driftless, or unglaciated area of the state.

The watershed's 2000 population was estimated to be around 9,385. The largest municipalities in the watershed are Lone Rock and Spring Green. These municipalities have experienced high population growth in the past decade.

Table 1: Growth in Municipalities in the Watershed

<i>Municipality</i>	<i>1990</i>	<i>2000</i>	<i>% Change</i>
Lone Rock	641	929	44.9%
Spring Green	1,283	1,444	12.5%

The largest percentage of land cover in the watershed is broad-leaf deciduous forest. Agriculture, particularly dairying, is the largest landuse in the watershed. There are significant grassland, forest land and wetlands in the watershed. These small wetland complexes are typically wet meadows and are adjacent to the streams in the watershed. Some of the wetlands are locally significant for waterfowl as well as for other wildlife species.

Table 2: Land Cover in the Watershed

<i>Land Cover</i>	<i>Percent of Watershed</i>
Forest (Total)	43.4%
<i>Broad-Leaf Deciduous</i>	41.9%
<i>Coniferous</i>	1.4%
<i>Mixed Deciduous/ Coniferous</i>	0.1%
Agriculture	31.2%
Wetland (Total)	11.4%
<i>Forested</i>	7.7%
<i>Emergent/Wet Meadow</i>	2.3%
<i>Lowland Shrub</i>	1.4%
Grassland	10.3%
Open Water	2.2%
Barren	0.9%
Development	0.5%

Watershed At A Glance

Drainage Area (m²): 126.5

Total Stream Miles: 70.0

Trout Stream Miles: 25.0

Sport Fishery Miles: 6.1

Lakes: Cruson, Hutter, and Jones Sloughes, Bakkens Pond, Long Lake

Exceptional/Outstanding Resource Waters: Biser, Marble, Unnamed tributary to Marble

Municipalities: Lone Rock, Spring Green

Major Public Lands:

- ◆ Lone Rock Unit of LWSR
- ◆ Spring Green Unit of LWSR
- ◆ Bakkens Pond Unit of LWSR
- ◆ Bear Creek State Fishery Area

Concerns and Issues:

- ◆ Nonpoint source pollution
- ◆ Atrazine
- ◆ Dissolved oxygen in shallow water areas

Initiatives and Projects:

- ◆ Wild trout reintroduction
- ◆ Spring Green Prairie Preserve prairie restoration
- ◆ Shallow Lakes Initiative

Water quality in the watershed is affected by nonpoint sources of pollution, such as from cropland and barnyard runoff. The portion of the watershed on the Wisconsin River floodplain is in an atrazine management area. Elevated levels of atrazine, an herbicide used on corn, have been found in some tested private water wells. Soils are permeable which allows atrazine to reach groundwater in some locations. See Appendix B. In addition, the Village of Spring Green is closely monitoring a leaking underground storage tank site (LUST) to ensure that contamination from this site does not make drinking water unsafe. For more information, see the “Groundwater Contamination” section on page 42.

Lone Rock lies on the sandy Wisconsin River outwash plain and discharges to groundwater via seepage cells. Lone Rock has received a variance to nitrate groundwater standards due to the discharge proximity to a slough of the Wisconsin River. The Spring Green Wastewater Treatment Plant discharges to the Wisconsin River. Two industrial facilities, the Hanor Company’s Crouch Farm and Pecks Feed & Grain, also discharge to groundwater in the watershed.

The Bear Creek Watershed has a variety of good quality habitats and rare plant communities that are listed on the state’s Natural Heritage Inventory, (NHI), kept by the Bureau of Endangered Resources. These communities include:

- ◆ Cedar grove
- ◆ Dry cliff
- ◆ Dry prairie
- ◆ Moist cliff
- ◆ Oak barrens
- ◆ Oak opening
- ◆ Pine barrens
- ◆ Sand barrens
- ◆ Sand prairie
- ◆ Southern dry-mesic forest
- ◆ Southern mesic forest
- ◆ Alder thicket
- ◆ Emergent aquatic
- ◆ Floodplain forest
- ◆ Oxbow Lake
- ◆ Shrub-carr
- ◆ Southern sedge meadow
- ◆ Springs and spring runs, hard

In addition to these special communities, the watershed is also home for a variety of rare plant and animal species including; 7 species of beetle, 1 species of bird, 6 species of butterflies, 6 species of dragonflies, 15 species of fish, 1 species of grasshopper, 4 species of moths, 11 species of mussels, 29 species of plant species, 2 species of snakes, and 2 species of leafhoppers. These plants and animals are also listed on the state’s Natural Heritage Inventory (NHI).

The Lone Rock, Bakkens Pond, and the Spring Green Units of the Lower Wisconsin State Riverway are in the watershed. Combined, these four units cover 4,238 acres, and 960, 2,678 and 600 acres respectively. All three units have a boat launch and are used for canoeing and fishing. The Bakkens Pond Unit also has opportunities for birdwatching. A state fishery area is located along Bear Creek. The fishery area contains approximately 800 acres of state-owned land and is located just north of Lone Rock on Highway 30.

STREAMS AND RIVERS IN THE BEAR CREEK WATERSHED

Bear Creek

Bear Creek rises in western Sauk County and flows south, meeting the Wisconsin River west of Lone Rock in Richland County. About 12 of its 27 stream miles are classified as Class II trout waters and the stream supports some natural reproduction of brook and brown trout. The Sauk County portion of the stream has better trout stream habitat. It has been recommended that the trout water should begin above Highway 130 and reach 12.2 miles into Sauk County. The lower eight miles of Bear Creek are considered warm water sport fishery waters and smallmouth bass, northern pike and catfish may enter the lower reaches from the Wisconsin River. A rare aquatic species has been found in the creek in past surveys. Portions of the creek have been straightened resulting in lost habitat, temperature increases, and sedimentation problems in some areas, particularly in the stream's lower reaches. Some extensive wetland areas exist along Bear Creek. These wetlands buffer the creek and provide habitat. Baseline monitoring was conducted on the stream in 2001.

Biser Creek

Biser Creek is a tributary to Bear Creek that enters just above Pumpkin Hollow Creek. Biser Creek is considered a Class I fishery and has natural reproduction of both brook and brown trout. The creek is designated an exceptional resource water (ERW). It has been recommended that the creek be upgraded to Class I trout stream status. The creek has been hydrologically modified and has some problems with nonpoint source pollution. The creek would benefit from a nonpoint source pollution reduction project.

Croal Creek

Croal Creek is a tributary to the headwaters of Bear Creek in Sauk County. Croal Creek is classified as a Class II trout stream. The stream supports some natural reproduction of brook and brown trout.

Four Springs Hollow

Four Springs Hollow Creek is a spring fed tributary to Bear Creek. Four Springs Hollow Creek flows easterly from Richland County. The creek supports a cold water forage fish community. It is thought that the creek has some problems as a result of nonpoint source pollution.

Little Bear Creek

Little Bear Creek is a seepage and spring fed tributary to Bear Creek. The majority of the surrounding sub-watershed has been cleared at one time for agricultural purposes. The stream supports cold water forage fish. Streambank pasturing and close proximity to feedlots and barnyards is a threat to the creek.

Marble Creek

Marble Creek is a spring fed tributary to Bear Creek. The creek is a Class II trout fishery and supports natural reproduction of brook and brown trout. The stream has been designated an exceptional resource water (ERW). A cursory habitat evaluation was completed in the summer of 2001. Although the creek does receive some nonpoint sources of pollution from

its watershed, the overall in-stream habitat appeared to be good. Suitable stream bottom was noted and the creek appeared to have a variety of riffles, runs and pools. Marble Creek has the potential to be a Class I trout stream with proper management. The stream has been ranked high as a nonpoint source priority and would benefit from a nonpoint source pollution reduction project. Baseline monitoring was conducted on the stream in 2001.

McCarville Creek

McCarville Creek, a tributary to Bear Creek in Sauk County, is classified as a Class II trout stream and supports the natural reproduction of both brook and brown trout. McCarville is thought to have good water quality. A cursory habitat evaluation was completed in the summer of 2001. The evaluation determined the habitat in the creek to be of fair quality. Overall, the creek experiences problems as a result of nonpoint sources of pollution. Barnyard runoff and cattle grazing adjacent the stream has caused habitat and water quality problems. The stream is ranked high as a nonpoint source priority and would benefit from a nonpoint source pollution reduction project.

Pumpkin Hollow Creek

Pumpkin Hollow Creek flow east from Richland County to join up with Bear Creek in Sauk County. The creek is spring fed and is able to support a cold water forage fish community. The creek is thought to have some problems as a result nonpoint source pollution.

Wisconsin River

This watershed is adjacent to a portion of the Wisconsin River. For more information on the Wisconsin River, see page 90.

LAKES IN THE BEAR CREEK WATERSHED

Bakkens Pond

Bakkens Pond is a flowage that was created by the Wisconsin Department of Natural Resources to control water levels for waterfowl management. The pond is located in Sauk County and is 14 acres with a maximum depth of six feet. The pond is located within a wilderness area. The fishery of the pond is primarily northern pike, largemouth bass and panfish.

Cruson Slough

Cruson Slough is a spring fed oxbow lake located near the Wisconsin River in Richland County. The lake has a surface area of approximately 20 acres and a maximum depth of 10 feet. The lake is located in the Lone Rock Unit of the Lower Wisconsin State Riverway. The fishery is primarily northern pike, largemouth bass and panfish.

Hutter Slough

Hutter Slough, located in Sauk County, is a 10-acre oxbow lake on the Wisconsin River floodplain. The slough has a maximum depth of 10 feet. The lake is fed by springs and seepage from the Wisconsin River. The fishery is primarily northern pike, largemouth bass and panfish.

Jones Slough

Jones Slough is a very shallow seepage fed lake located in Sauk County. It has an average depth of 1 foot and is considered a part of a larger adjoining area of deep marsh. The slough is approximately 5 acres. The slough has a limited northern pike fishery.

Long Lake

Long Lake is a drainage oxbow lake of the Wisconsin River located in both Sauk and Richland Counties. The lake is impounded near Brace Memorial Park, which is near Lone Rock. The lake has an area of 48 acres and a maximum depth of 10 feet. The lake is a very popular fishing lake and contains northern pike, walleye, largemouth bass, panfish and catfish. The lake has some problems as a result of low dissolved oxygen. The lake suffered from a serious fish kill in 1995. The kill was thought to be the result of excessive biological oxygen demand, BOD, in two upstream lakes that are the source of water for Long Lake. Overall, Long Lake is susceptible to problems as a result of activities in the upstream ponds. Long Lake is a part of a “Shallow Lakes Initiative” that began in 1998 to document resource values and problems in shallow waters of the Wisconsin River.

RECOMMENDATIONS (LW14)

- ◆ Condition monitoring should be conducted on **Bear, Biser, Little Bear, Marble, and McCarville Creeks**, including the **unnamed tributary to Marble Creek**.
- ◆ Land should be acquired or easements purchased along **Bear Creek** to aid in habitat improvement work on the creek.
- ◆ A stream condition assessment should be conducted on **Little Bear Creek** to determine if any management actions could help improve the instream habitat.
- ◆ A fisheries management plan should be developed to improve **Marble Creek** from a Class II to a Class I trout stream.
- ◆ An aquatic plant survey is needed for **Long Lake** to confirm and document the extent of the Eurasian watermilfoil invasion of the lake.
- ◆ **Biser Creek, Marble Creek and McCarville Creeks** should be considered for Targeted Runoff Management grants, (TRM), or some other nonpoint source pollution reduction project.
- ◆ **Biser Creek** should be updated from a Class II trout stream to a Class I.
- ◆ The trout stream mileage in the Sauk County portion of **Bear Creek** should be increased.
- ◆ **Bear Creek** should be surveyed to determine if rare aquatic elements previously found in the stream is still present.

- ◆ **Long Lake, Bakkens Pond and other ponds upstream of Long Lake** should continue to be monitored.
- ◆ Lone Rock should, at the time of its next facilities upgrade, closely examine the feasibility of connecting to the Spring Green wastewater treatment system.

Watershed map

Streams in the Bear Creek Watershed (LW14) Richland and Sauk Counties Area: 126.5 sq miles

Stream Name	WBIC	Length (miles)	Existing Use	Projected Use	Supporting Potential Use	Codified Use and Trout Stream Classification	Proposed Codified Use	303(d) Status	Rare Aquatic Species	Use Impairment		Monitored/ Evaluated/ Unassessed	Data Level	Trend	Ref.*	
										Source	Impact					
Bear Creek	1234600	0-6.1	WWSF	same	Full	DEF	same	N	Y	NPS, HM, PSB, SB	HAB	M (2001)	B4, H2	U	6, 7, 13, 14, 18, 19, 20, 23	
		6.1-18.3	COLD II	same	Full	COLD II	same	N						U		
		18.3-27	U	U	U	DEF	same	N							U	
Biser Creek	1236000	2.2	COLD I	same	Full	COLD II/ERW	COLD I	N	N	HM, NPS	HAB	E		I	6, 14, 18, 19, 23	
Croal Creek	1236200	3	COLD II	same	Part	COLD II	same	N	N	HM, NPS, BY	HAB	E		U	6, 14	
Four Sprs Hollow	1235500	2	COLD	same	U	DEF	same	N	N	NPS	HAB	U		U	6, 14, 18, 23	
Little Bear Cr.	1234700	8	COLD	same	U	DEF	same	N	N	HM, NPS	HAB	E (1986)	B2, H1	U	6, 14, 19	
Marble Creek	1235700	3	COLD II	COLD I	Full	COLD II/ERW	same	N	N	HM	TEMP	M (2001)	B4, H2	U	3, 6, 7, 14, 18, 19, 23	
McCarville Creek	1236100	0-3.1	COLD II	COLD I	Part	COLD II	same	N	N	NPS, BY, HM	HAB, NUT	M (2001)	H2	U	3, 6, 14, 15, 18, 20, 23	
		3.1-4	U	U	U	DEF	same	N						U		
Pumpkin Hollow Cr	1235800	2	COLD	same	U	DEF	same	N	N	NPS	HAB	U		U	6	
Unnamed Trib to Marble Creek (T10N R3E S29)		1.5	COLD II	COLD I	Part	DEF/ERW	same	N	N			E		U	6, 14, 18, 23	
Wilson Creek	1247500	4	COLD II	same	Part	DEF	COLD	N	N	NPS	HAB	E		I	8	
Unnamed streams		17.3				DEF								U		
Total Stream Miles		70														
		COLD														
		COLD I	12													
		COLD II	2.2													
		COLD II	22.8													
		WWSF	6.1													
		U	26.9													

***The numbers in this column refer to the References found in the corresponding Watershed Narrative. See Appendix J: "How to Read the Stream Tables," in Chapter 7 of the State of the Lower Wisconsin River Basin Report.**

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