

Milwaukee River Watershed

Hydrologic Unit Code: 04040003

The USEPA "Surf Your Watershed" website at cfpub.epa.gov/surf/huc.sfm?huc_code=04040003

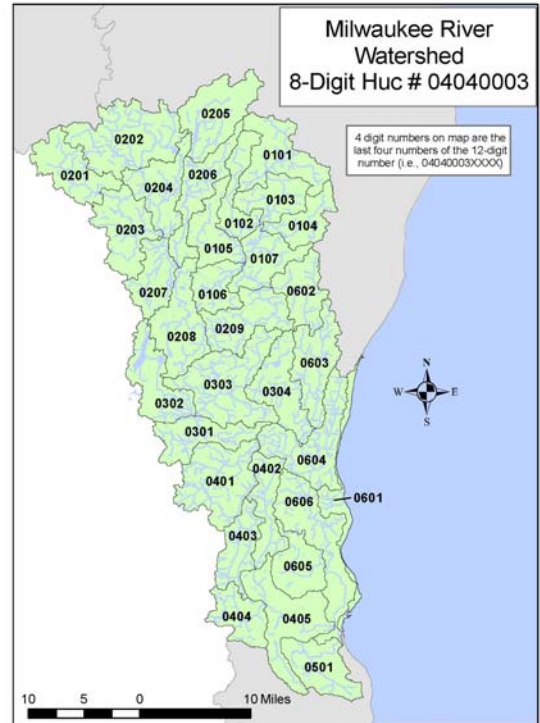
The Milwaukee River basin is part of the Wisconsin DNR's Milwaukee River basin management area. For more information, see the Wisconsin Department of Natural Resources' "Wisconsin's Basins" website at dnr.wi.gov/org/gmu/gmu.html.

Watershed Groups

- Friends of Milwaukee's Rivers — www.mkeriverkeeper.org
- Milwaukee Metropolitan Sewerage District — www.mmsd.com
- Milwaukee River Basin Partnership — basineducation.uwex.edu/milwaukee
- River Revitalization Foundation — www.riverrevitalizationfoundation.org

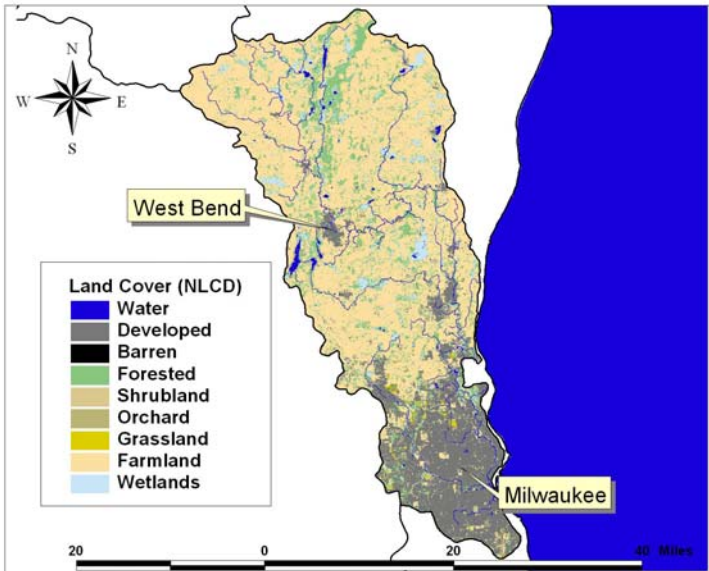
Watershed Overview

- The Milwaukee River Basin encompasses almost 870 square miles of land in portions of Dodge, Fond du Lac, Milwaukee, Ozaukee, Sheboygan, Washington, and Waukesha counties.
- The southern quarter of the basin is the most densely populated area in the state, holding 90% of the basin's population, which is approximately 1.3 million people.
- The Basin includes 6 watersheds, 3 of the watersheds (Milwaukee River North, Milwaukee River East- West, Milwaukee River South) contain the Milwaukee River from start to finish. The other three watersheds (Cedar Creek, Menomonee River and Kinnickinnic River) are named after the major rivers they contain.
- Collectively the six watersheds contain about 500 miles of perennial streams, over 400 miles of intermittent streams, 35 miles of Lake Michigan shoreline, 57 named lakes and many small lakes and ponds.
- The Natural Heritage Inventory has documented 16 endangered, 26 threatened and 65 special concern plant and animal species, and 30 rare aquatic and terrestrial communities within the Basin.
- The AOC encompasses 57.5 km² or 2.6 % of the entire basin, including lands that drain directly to the AOC via storm sewers and combined sewer systems. This relatively small drainage area contributes disproportionately large amounts of pollutants associated with urban runoff.
- Runoff from specific and diffuse sources, contaminated sediment, habitat modifications (such as channelization and dams) have degraded water quality throughout the Basin.
- Recreational highlights include wildlife watching, hiking, fishing, hunting, bicycling, horseback riding, snowmobiling, skiing, camping, picnicking, and water sports.
- The Basin includes the Southeast Glacial Plains, Southeast Lake Michigan Coastal and Northern Lake Michigan Ecological

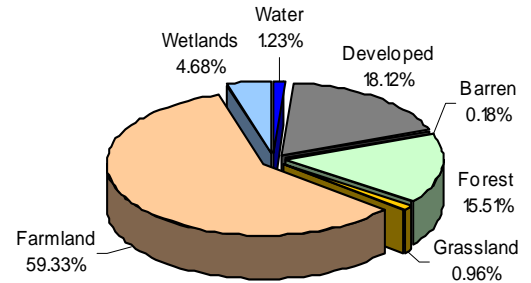


Subwatersheds of the Milwaukee River Watershed

0101 Nichols Creek	0302 Cedar Lake-Cedar Creek
0102 Mink Creek	0303 Jackson Marsh State Wildlife Area-Cedar Creek
0103 Batavia Creek-North Branch Milwaukee River	0304 Cedar Creek
0104 Silver Creek	0401 Village of Menomonee Falls-Menomonee River
0105 Stony Creek	0402 Little Menomonee River
0106 Lizard Mound State Park	0403 City of Butler-Menomonee River
0107 North Branch Milwaukee River	0404 Underwood Creek
0201 Headwaters West Branch Milwaukee River	0405 Menomonee River
0202 Kettle Moraine Lake-Milwaukee River	0501 Kinnickinnic River
0203 West Branch Milwaukee River	0601 Fox Point-Frontal Lake Michigan
0204 Auburn Lake Creek-Milwaukee River	0602 Town of Freedonia-Milwaukee River
0205 Long Lake-East Branch Milwaukee River	0603 Village of Grafton-Milwaukee River
0206 East Branch Milwaukee River	0604 Pigeon Creek-Milwaukee River
0207 Village of Kewaskum-Milwaukee River	0605 Lincoln Creek
0208 Silver Creek-Milwaukee River	0606 Milwaukee River
0209 Village of Newburg-Milwaukee River	
0301 Town of Richfield	



Land Cover: Milwaukee River Watershed



Watershed size: 865 sq. miles

Between 1996 and 2001, there has been a slight increase in developed land, farmland, forest, and bare land and a slight decrease in grassland and wetland.

Landscapes.

- Some streams have the ability to support some trout populations. Others have spring and fall runs of stocked trout and salmon. Fishing opportunities also exist in the rivers and harbors for Northern Pike, Small Mouth Bass, and Walleye.
- Wildlife include White- tailed Deer, Ring- necked Pheasant, Waterfowl, Geese, Gray and Flying Squirrels, Raccoons, Woodchucks, Great Horned Owls, a variety of hawks, songbirds, and shorebirds.
- Grasslands are promoted through prescribed burns & mowing.
- Maple- basswood is the most common forest type and the tree species with the greatest volume in the Basin is Ash followed by Hard Maple, Basswood, Soft Maple and Red Oak.
- The Nature Conservancy identified the East Branch of the Milwaukee River and the Kettle Moraine Lakes as having important groundwater/wetland fed headwater streams in ice contact and end moraine and critical kettle moraine lakes.
- The Milwaukee River Mainstem has critical moderate groundwater mainstems on till/lake plain; headwaters in ice contact/end moraine as identified by the Nature Conservancy.
- Cladophora algae is becoming a problem at the shoreline.

Watershed Activities

- Water quality problems are from in- place pollutants, runoff in urban areas, floodplain development, and agricultural practices. As people move to the more rural areas of the basin, groundwater quantity and quality issues will become very important.
- Preserve biodiversity and protect endangered and threatened species by preserving their habitat.
- The Milwaukee Metropolitan Sewerage District is purchasing headwaters to protect it from development that would increase runoff into the system.
- MMSD is a leader in developing watershed approaches to the problems associated with managing an urbanized watershed.
- Education is a major component of watershed activities.
- There are plans to restore selected streams from concrete lined to more natural streams.
- Monitoring of wildlife populations, water quality, and ecosystem function are needed to understand the status and trends of resources.
- Milwaukee County Parks plans to stabilize and reconstruct approximately 0.25 miles of trail and vernal streambank; remove invasive exotic plant species; install erosion control geotextile; plant trees and shrubs and herbaceous plugs; and hold two single-day volunteer events per year to educate residents on the issues of erosion, invasive species and native plantings.
- The Milwaukee Metropolitan Sewerage District is leading a number of watershed-based projects to reduce the number and frequency of combined sewer overflows

Data Sources. Land cover map and percentages: National Land Cover database, 1992 (edc.usgs.gov/products/landcover/nlcd.html); Land use change: NOAA Coastal Change Analysis Program, 1996 and 2001 (www.csc.noaa.gov/crs/lca/ccap.html); Total Maximum Daily Load (TMDL) Impaired Waters: Surf Your Watershed (www.epa.gov/surf)

Milwaukee Estuary Area of Concern Activities

AOC Location

The lower 5 km of the Milwaukee River ; the lower 4.8 km of the Menominee River; the lower 4 km of the Kinnickinnic River; the inner and outer Harbor and the nearshore waters

Stressors and Primary Contaminants

- Phosphorus
- Pathogens
- PCBs
- Metals
- PAHs
- Urban and rural runoff
- Wastewater discharges
- Sediments
- Habitat loss
- Dams

Programs

- Clean Water Act
- Clean Air Act
- Superfund
- Brownfields
- Navigational dredging
- Milwaukee Estuary Fish spawning habitat improvement project
- Kinnickinnic River Remediation planned for 2008-09

Delisting Targets

- In progress

Key Activities Needed

- Key Activiti
- Dredging
- Nonpoint source pollution control
- Stream buffers
- Pathogen source research
- Coordination with RAP program for AOC delisting purposes

Challenges

- High urban density and rapid development
- Historic developed sites which could be restored to improve floodplain functions and wetland function

Next Steps

- Estabrook Impoundment remediation needed (assessment in progress)
- Watershed analysis to assess water quality impacts and options for restoration (funding needed)

Impaired (303d) Waters

Waterbody Name	Impairment
Adell Tributary	Degraded Habitat, Sediment
Beaver Creek	Aquatic Toxicity
Cedar Creek	PCB Fish Consumption Advisory
Evergreen Creek(T11n R19e Sec 36 Sw Se)	Degraded Habitat, Sediment
Forest Lake	Mercury Fish Consumption Advisory
Indian Creek	Metals, Phosphorus, Aquatic Toxicity, Degraded Habitat, Dissolved Oxygen, Sediment, Temperature
Jackson Park Pond	PCB Fish Consumption Advisory
Lehner Creek	Degraded Habitat, Sediment, Temperature
Lincoln Creek	Metals, Phosphorus, Aquatic Toxicity, Degraded Habitat, Dissolved Oxygen, PAHS, Sediment, Temperature
Little Menomonee R.	Aquatic Toxicity, Creosote
Mauthe Lake	Mercury Fish Consumption Advisory
Milwaukee R. Estuary AOC (Outer Harbor to LM)	Metals, Aquatic Toxicity, Bacteria, PCB Fish Consumption Advisory
Milwaukee R. Estuary AOC (Menomonee River)	Metals, Phosphorus, Aquatic Toxicity, Dissolved Oxygen, PCB Fish Consumption Advisory
Milwaukee R. Estuary AOC (Kinnickinnic River)	Metals, Phosphorus, Aquatic Toxicity, Bacteria, Dissolved Oxygen, PCB Fish Consumption Advisory
Milwaukee R. Estuary AOC (Milwaukee River)	Metals, Phosphorus, Aquatic Toxicity, Bacteria, Dissolved Oxygen, PCB Fish Consumption Advisory
Milwaukee River	Bacteria PCB Fish Consumption Advisory
Natural Channel Reaches	Degraded Habitat Sediment
Unnamed Trib to Cedar Cr.	Degraded Habitat Sediment
Zeunert Pond	Mercury Fish Consumption Advisory

