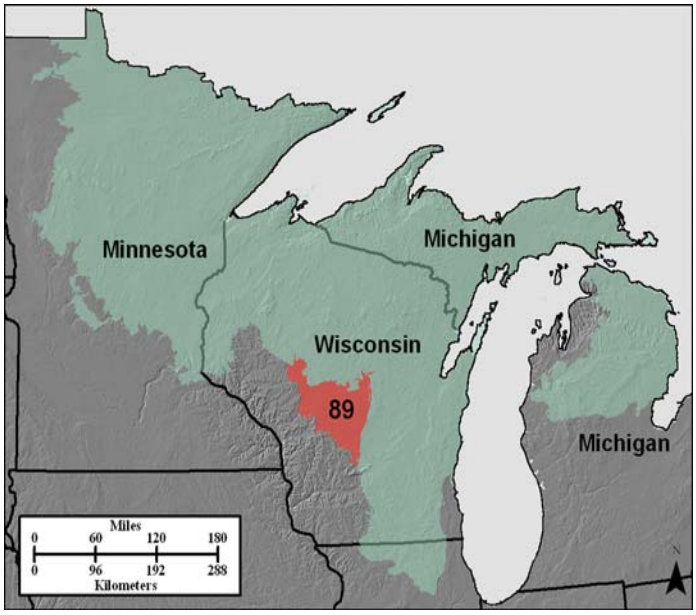

Location of MLRA 89 in Land Resource Region K.

89—Wisconsin Central Sands

This area is entirely in Wisconsin. It makes up about 3,420 square miles (8,860 square kilometers). The cities of Black River Falls, Friendship, Mauston, New Lisbon, Stevens Point, Tomah, Wisconsin Dells, and Wisconsin Rapids are in the area. Interstates 90 and 94 join in the western part of the area, and U.S. Highway 51 crosses the northeastern part. The north end of the Fort McCoy Military Reservation is in the southwest part of the area. The Meadow Valley Wildlife Area and the Necedah Wildlife Refuge are completely within this MLRA. The Ho-Chunk Nation (formerly the Wisconsin Winnebago Tribe) does not have a defined reservation, but the Nation's center of government is in Jackson County and the majority of Ho-Chunk tribal lands are within this MLRA.

Physiography

This area is in the Wisconsin Driftless Section of the Central Lowland Province of the Interior Plains. It is an area of isolated buttes and mesas, valley trains, flood plains, and extensive wetlands. The southern and eastern parts of the area are on a large glacial lake and outwash plain, and the northern and western parts are mostly on low hills and pediments. Elevation is 880 feet (270 meters) in the southern part of the area, at the village of Lyndon Station, with a gradual slope to about 1,110 feet (340 meters) in the northeastern part of the area, at the city of Stevens Point. The maximum elevation is about 1,400 feet (425 meters). It is on Saddle Mound, in Jackson County. The maximum local relief is about 400 feet (120 meters), but relief is considerably lower in most of the area. The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Wisconsin (0707), 70 percent; Upper Mississippi-Black-Root (0704), 24 percent; and Chippewa (0705), 6 percent. The Chippewa, Black, and Wisconsin Rivers, major tributaries of the Mississippi River, drain this area.

Geology

This area is underlain dominantly by weak Cambrian sandstone and interbedded sandstone and shale formations locally named Wonewoc, Eau Claire, and Mount Simon. Some areas are underlain by Precambrian metamorphic and igneous rocks. Some were most likely glaciated between 25,000 and about 2,400,000 years ago, and others probably were not glaciated. Although this part of Wisconsin is often referred to as the "Driftless Area," it still has remnants of very old glacial drift and also has outwash and glacial lacustrine sand from the more recent Wisconsin Glaciation. Glacial Lake Wisconsin covered more than 1,825 square miles (4,730 square kilometers), most of which was in this MLRA.

Climate

The average annual precipitation in this area is 30 to 33 inches (760 to 840 millimeters). Most of the rainfall occurs as convective thunderstorms during the growing season. The annual snowfall ranges from about 35 to 50 inches (90 to 125 centimeters). It generally occurs from October through April. The average annual temperature is 42 to 45 degrees F (6 to 7 degrees C). The freeze-free period averages about 150 days and ranges from 135 to 165 days.

Water

Following are the estimated withdrawals of freshwater by use in this MLRA:
Public supply—surface water, 10.4%; ground water, 12.5%
Livestock—surface water, 0.8%; ground water, 4.1%
Irrigation—surface water, 0.7%; ground water, 69.5%
Other—surface water, 2.1%; ground water, 0.0%

The total withdrawals average 145 million gallons per day (550 million liters per day). About 86 percent is from ground water sources, and 14 percent is from surface water sources. The supply of surface and ground water is abundant, but in years of normal precipitation, the moderate precipitation is inadequate for crops and pasture on sandy soils. In years of little or no precipitation, crop yields are seriously reduced. Irrigation is widely used for high-value crops. Drainage of the soils on wet lowlands is needed for good crop production. The surface water is in streams, rivers, and flowages. It is used mainly for power generation, irrigation, recreation, habitat for fish and wildlife, and disposal of effluent from sewage treatment plants.

Ground water is the major supply used to meet most domestic, agricultural, municipal, and industrial needs in this area. The water comes from aquifers in unconsolidated sand and gravel deposits overlying Cambrian sandstone or from the sandstone itself. Probable yields from wells in sand and gravel aquifers range from 100 to more than 1,000 gallons per minute (380 to more than 3,785 liters per minute). Wells in glacial till on moraines yield 50 to 1,000 gallons per minute (190 to 3,785 liters per minute). Wells in the sandstone bedrock typically yield 100 to 800 gallons per minute (380 to 3,030 liters per minute). The water is a calcium-magnesium-bicarbonate type that is moderately hard or hard and ranges from 80 to 220 parts per million (milligrams per liter) calcium carbonate. It is of good quality, containing less than 300 parts per million (milligrams per liter) total dissolved solids. The sand and gravel deposits lie over Precambrian crystalline rocks in the northern part of this area. The water from these deposits has less total dissolved solids and is less hard than the water that lies over sandstone in the southern part of the area. Minor water use problems are caused by hardness and locally by high concentrations of iron produced by reducing conditions in marshes and swamps. The regional flow of ground water is towards the Wisconsin River.

Soils

The soil orders in this MLRA are dominantly Entisols, Alfisols, Histosols, and Spodosols. Mollisols occur to a much lesser extent. The soil temperature regime is dominantly mesic, but it is frigid in the soils in low-lying depressions that are wet for long periods and in areas on the northern fringe of the MLRA. The soils in this MLRA have a udic or aquic soil moisture regime and dominantly have mixed or siliceous mineralogy. They generally are moderately deep to very deep, well drained to very poorly drained, and sandy to clayey. In much of the area, loess occurs in thin layers or does not occur at all. On some flood plains, however, silty alluvium is derived from the thicker mantles of loess on soils in the adjacent MLRAs.

Hills and pediments, which are generally in the northern and western parts of this MLRA, have Haplorthods (Ludington and Humbird series) and Epiaquods (Fairchild and Merrillan series), which formed dominantly in sandy and loamy residuum derived from interbedded sandstone and shale, and Quartzipsamments, which formed in sandy slope alluvium and sandy residuum (Boone series) and in sandy pedisediment (Tarr series). The glacial lakes, outwash plains, and valley trains in the eastern and southern parts of the area have Udipsamments (Plainfield series), Psammaquents (Newlang series), Hapludalfs (Wyeville series), and Haplosaprists (Dawsil series), all of which formed dominantly in outwash sand; lacustrine sand, silt, and clay; and organic material. The flood plains throughout the area are dominated by Udipsamments (Algansee and Scotah series) and Fluvaquents (Kalmarville series).

Biological Resources

This area is in the southern part of the conifer-hardwood forest, which includes xeric pine savannas and oak barrens. Jack pine, northern pin oak, black oak, and white oak are the dominant trees. The extensive wetlands in the area support red maple, aspen, paper birch, and speckled alder.

Some of the major wildlife species in this area are white-tailed deer, ruffed grouse, wild turkey, fox and gray squirrels, cottontail rabbits, ducks, and geese. Red fox, gray fox, coyote, muskrat, raccoon, and beaver are the main furbearers. Small populations of prairie chickens inhabit the area. Fishing is limited mostly to constructed impoundments and rivers. Local fish species include rainbow trout, brook trout, walleye pike, largemouth bass, smallmouth bass, bluegill, yellow perch, and Major Land Resource Areas northern pike. Colburn, Sandhill, Wood County, and Meadow Valley State Wildlife Areas, along

with Buena Vista Marsh, Black River State Forest, and the Necedah National Wildlife Refuge, provide wildlife habitat throughout the area.

Land Use

Following are the various kinds of land use in this MLRA:

Cropland—private, 20%
Grassland—private, 6%
Forest—private, 53%; Federal, 5%
Urban development—private, 6%
Water—private, 4%
Other—private, 6%

Most of this area is forestland. Lumber and pulp production is an active industry. The rest of the area is used mainly for cash-grain crops, dairy farms, livestock grazing, irrigated vegetables, Christmas trees, or cranberries. Most of the irrigated areas are used for potatoes, snap beans, peas, or sweet corn. Tourism, recreation, and wildlife management are important in this MLRA. Dams in two areas on the Wisconsin River have formed the Petenwell Flowage and Castle Rock Lake. Because of the abundance of water, the thousands of acres of State and county forests, and many large public hunting grounds, hunting and fishing are popular activities. The major soil resource management concern is wind erosion. Maintenance of the content of organic matter and productivity of the soils and soil moisture management are additional concerns. The important conservation practices on cropland include systems of crop residue management (especially no-till systems that eliminate the need for summer fallow tillage), cover crops, windbreaks, vegetative wind barriers, wind stripcropping, and nutrient management.