



Natural Divisions

The natural divisions of the Chicago Region are adapted from the map and delineation presented in Swink & Wilhelm (1994). The regional divisions are dominated largely by relatively young moraines, lake plains, eolian dunes, and outwash features that formed at the southern end of Lake Michigan 2-15 thousand years ago with the wasting away of the Wisconsin Glacier. See Surficial Geology Map, p. vii. The youngest division comprises the Illinois Dune Section (3D); the oldest division is the Winnebago Drift Section (1E). Owing in many respects to the influence of Lake Michigan, a remnant of glacial Lake Chicago, there is biome-level variation within the Chicago Region.

The western divisions are subject to severe winds from the southwest during the summer and cold northwest winds in the winter. Winds in the northeastern sections are likely to gather moisture as they sweep across Lake Michigan and are buffered somewhat from temperature extremes. In some years the vernal flowering times of plants can differ by as much as a month between our northern and southern sectors, although the differential is insignificant by the 15th of June. The surface of Lake Michigan has a long-term average of 579 feet above mean sea level, but varies generally 2 feet above and below that. The lake plain sections are essentially flat except for areas of beach ridges and dune formation. The moraines are rolling, varying as much as 500 feet over the whole of the region, the higher and more dramatically dissected portions situated in the Kettle Moraine Section (1C). Native plants of the region obviously established themselves in different eras at different stages of the glacial retreat and adapted to a range of climates, microclimates, and physiographic variation. It is believed that human cultures and their anthropogenic influences were a factor from the beginning of plant community ontogeny.

MORAINAL NATURAL DIVISION

The moraines are rolling and conform to the shape of the southern end of Lake Michigan. The outer boundary follows the edge of the Valparaiso Moraine.

- 1A. Western Morainal Section.** Mostly end moraines, the soils high in clay and silt and often lying over a perched water table. Vegetated primarily with prairies, savannas, and woodlands and interspersed with marshes, sedge meadows, and seeps.
- 1B. Eastern Morainal Section.** Similar geologically to Section 1A but more regularly timbered and with forests likely to include American Beech.
- 1C. Kettle Moraine Section.** Prevalingly truncated end moraines, outwash features, and kettle and kame topography, an unconsolidated aquifer, and glacial lakes. Vegetated primarily with savannas interspersed with prairies, sedge meadows, marshes, fens, and seeps.
- 1D. Racine Till Plain Section.** Mostly end and ground moraines that form high bluffs along Lake Michigan and characterized by deep dissections, which form ravines populated by numerous plants of boreal affinity.
- 1E. Winnebago Drift Section.** An older substage of the Wisconsin Glacier, the topography is somewhat more level than the other morainal sections and with much less wetland development and more entrenched streams. Vegetated prevalingly by prairies interspersed with savannas and woodlands.

GLACIAL LAKES NATURAL DIVISION

Much more extensive east of the Chicago Region, the Glacial Lakes Division represents a complex of uneven ice-contact terrain deposited by a stagnation of the glacial retreat.

- 2A. Glacial Lakes Section.** Mostly moraines, kames, and outwash plains, characterized by kettle ponds, lakes, and swamps. Vegetated by extensive tracts of forest and savanna on steep slopes, replete with bogs, fens, and marshes.

LAKE PLAIN NATURAL DIVISION

Characterized by lacustrine deposits, beach ridges, and eolian dunes.

- 3A. Chicago Lake Plain Section.** Once covered by glacial Lake Chicago, characterized by nearly level lacustrine silt and clay. Vegetated primarily with marsh and wet to mesic prairie.
- 3B. Gary Lake Plain Section.** Characterized largely by beach ridges from Tolleston, Calumet, and Glenwood stages of glacial Lake Chicago, with intervening flats with high water tables. Vegetated by Black Oak savanna, sand prairie, swamp, and marsh. Denoted as a portion of the beach-ridge plain.
- 3C. Benton Harbor Lake Plain Section.** Similar topographically to 3B, but more heavily wooded with northeastern-sector flatwoods and forests.
- 3D. Illinois Dune Section.** This section is a complex of beach ridges that developed as sand and gravel deposits carried by net littoral transport from the north. Vegetated primarily by calcareous sand prairie, Black Oak savanna, and marsh, this section is exceptionally diverse floristically and provides the habitat for an array of plants and animals rare in Illinois and Wisconsin. Chiwaukee Prairie and Illinois Beach State Park are two excellent examples.
- 3E. Gary Beach Ridge Plain Section.** Formed within the last 6,000 years and characterized by alternating parallel low ridges and intervening swales. Vegetated by calcareous sand prairie, Black Oak savanna, marsh, and shallow ponds.
- 3F. High Dune Section.** Narrow band of sand dunes, under the influence of direct western winds off of Lake Michigan, which rise to elevations as high as 100 feet above the lakeshore. The winds bring new, calcareous sand, higher than normal snowfall amounts, and moderate temperatures. Prevalingly vegetated by savannas of Black Oak and White Pine. The blowouts, extensive areas of open sand on windward slopes are mostly of post-settlement origin.

GRAND PRAIRIE NATURAL DIVISION

Characterized by moraines and lake plains traversed by significant river valleys and their associated marshes and dolomitic outcrops.

- 4A. Grand Prairie Section.** Mostly end and ground moraines, gently rolling to level. Vegetated prevalingly by fine-textured soil prairies, with wooded plant communities confined largely to river bluffs and floodplains.
- 4B. Kankakee Sand Section.** Level lacustrine deposits with significant tracts of eolian dunes, mostly confined to the district south of the Kankakee River. Vegetated by sand prairie, sand flatwoods, Black Oak savanna, Black Oak barrens, marsh, and sedge meadow.
- 4C. Kankakee Marsh Section.** Extensive wetlands that once bordered the Kankakee River east of Kankakee. Vegetated by wet prairie and marsh, with areas of wooded swamp and riparian woodland and savanna.
- 4D. Bedrock Valley Section.** Areas of dolomitic outcrops, pavements, and shallow soils over bedrock exposed along the lower Des Plaines and Kankakee rivers by scouring from the outflow of glacial Lake Chicago at various times or from the Kankakee Torrent. In the Illinois River Valley, in Grundy County, shale and sandstone exposures are more prevalent. Vegetated largely by dolomite prairie, sedge meadow, and marsh, with significant occurrences of cliffs and canyons.
- 4E. Fox River Bluff Section.** Perhaps sufficiently distinct to warrant a division in and of itself, this section is characterized by high bluffs along the lower Fox River Valley and its associated outwash features. Seepage areas and fens are common and outcrops of dolomite are occasional. The vegetation of the left bluff is largely wooded, the right bluff much less so, but the reach in Kendall County is quite different from the reach in Kane County.