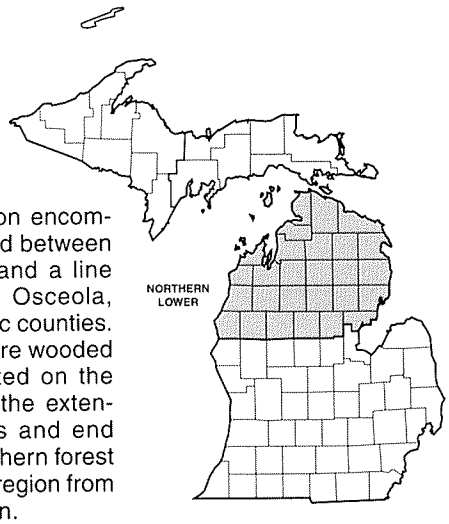
NORTHERN LOWER REGION



Extent, topography, geology and soils

The Northern Lower region encompasses all counties located between the Straits of Mackinac and a line formed by Mason, Lake, Osceola, Claire, Gladwin and Arenac counties. Vast areas of this region are wooded with cropland concentrated on the relatively level areas on the extensive system of till plains and end moraines. The lack of southern forest species differentiates this region from the Southern Lower region.

The terrain of the region is generally level to gently rolling. Numerous glacial advances and retreats created a variety of landform features throughout the region. Most notable are the lacustrine sand and gravel deposits in the northeast and extensive areas of coarse textured till plains dissected by areas of glacial outwash found in the central and western counties. End moraines of medium to coarse texture border an expansive, nearly level, sandy outwash plain centered in Grayling. Areas of wet land, swamps and bogs are found throughout the region. A map of landform features (Quaternary Geology of Michigan) can be found in the appendix section of this guide.

Although most soils of the region are considered sandy, there is commonly variation in the depth, development and texture of subsurface layers. Perched water tables and clayey, gravelly, rocky, and cemented layers were the most common subsurface features described in the soils descriptions on our study sites. This pedologic variation is reflected in the large array of soil map units that have been previously described for the region.

Forest vegetation

Eighteen relatively common tree species make up a wide range of upland forest types. In broadest terms we can group forest types into those of very dry, very dry to dry, dry to dry-mesic, mesic and mesic to wet-mesic habitat types (wet lowland sites have not been classified into habitat types). The stands on the very dry habitat type are commonly dominated by jack pine, red pine and associated scrub oak. The very dry to dry habitat types are characterized by mixtures

of pines, oaks, aspen and red maple. The stands of the dry to dry-mesic habitat type typically are dominated by mixtures of red maple, red oak, white oak and bigtooth aspen. White and red pine are important associates. Stands on mesic habitat types are dominated by sugar maple, American beech, basswood and white ash. Important associates include hemlock, ironwood, red maple and yellow birch. The mesic to wet-mesic habitat type is characterized by mixtures of red maple, white pine, bigtooth aspen, red oak, red pine and paper birch.

The earliest known surveys of the region described vegetation of the region in four broad groups. The hardwood forest, the mixed coniferous and deciduous forest, the coniferous forest and scattered areas of lowland forests (Veach 1927). Virtually the entire region was impacted during the logging era (1870-1920) either directly from logging or from the series of fires that followed (Whitney 1987). The coniferous forests were composed of species best adapted to the fire environment, as these forests were prone to fire prior to the logging era. Nevertheless, the increase in fire frequency after logging disturbance enhanced the shift in tree coverage toward jack pine and scrub oak and away from red and white pine. The mixed coniferous-deciduous forests were greatly impacted as the repeated fires favored rapid sprouting species such as the oaks and red maple while eliminating white pine, red pine and hemlock regeneration. In addition, this fire pattern often killed the few mature pine and hemlock seed trees that remained after logging operations. This loss of seed source altered forest composition for decades to follow. The hardwood forest type was least impacted by fire due to its relative infrequency and low intensity; however, disturbance favored the establishment of paper birch and aspen on these sites. Selective logging of hardwoods in these stands, in the years that followed, favored sugar maple reproduction due to its competitive advantage over the other less shade tolerant species.