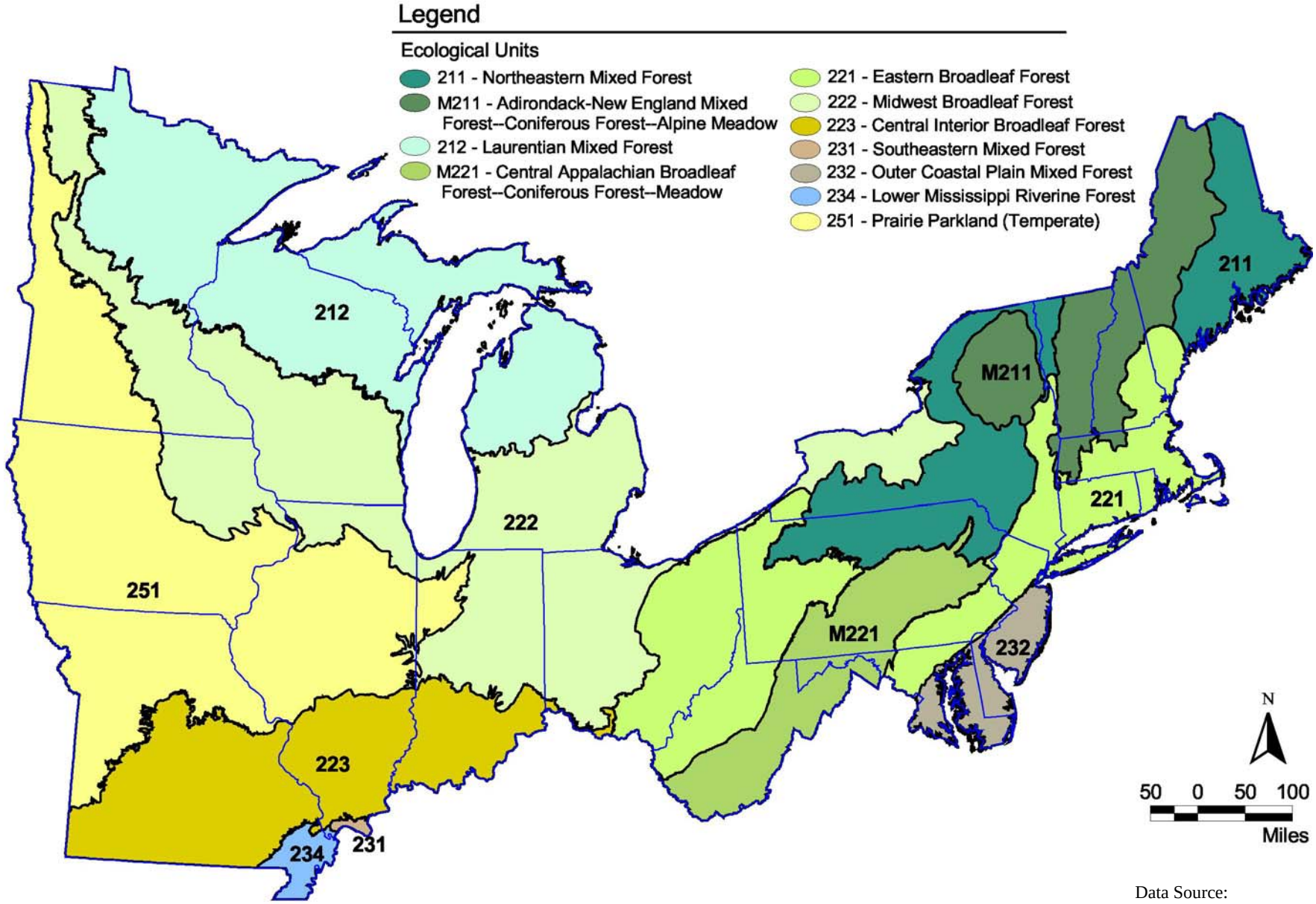
Ecological Provinces

Ecological provinces are geographic units that span multiple States. Each province contains a unique mosaic of physical features, vegetation, and community structure that affects ecosystem processes influenced by both nature and people.



Map produced by USDA Forest Service, Information Management and Analysis Group, Durham, NH

Data Source:
Cleland and others 2005

Description of Ecological Provinces in the Northern United States

211 Northeastern Mixed Forest. This is a landscape of flatlands and rolling low and high hills. It includes glacially scoured and dissected peneplains and the Allegheny Plateau. The predominant lithology is thin stony glacial till and stratified drift over bedrock. Marine, lacustrine, and glacial outwash deposits contribute to low relief closer to the Atlantic and in the St. Lawrence and Champlain valleys. The warm continental climate provides abundant rainfall and a frost-free period as long as 120 to 140 days per year. Most soils have a frigid temperature regime though some areas are colder. Forest cover type groups include maple-beech-birch, aspen-birch, spruce-fir, oak-hickory, white-red-jack pine, and elm-ash-red maple. Wind disturbances commonly affect single trees or groups of trees, though severe winds and hurricanes can have more drastic effects. Ice and heavy snow can cause crown damage. European settlement progressed from the coast and seaway inland. Fires and large-scale disturbance are rare; however, the area did experience slash fires following historical land clearing.

M211 Adirondack-New England Mixed Forest-Coniferous Forest-Alpine Meadow. This mountainous province is underlain by granite and metamorphic rocks and is thinly mantled by glacial till. The relief is between 1,000 and 3,000 feet. Many glacially broadened valleys have glacial outwash deposits and contain swamps and lakes. Soil temperatures are frigid and cryic. Precipitation is evenly distributed throughout the year. The growing season is short. Vertical vegetation zonation is present. Maple-beech-birch is the dominant cover type group. Spruce-fir, aspen-birch, and white-red-jack pine also occur. Oak-hickory and oak-pine are minor components of the province.

212 Laurentian Mixed Forest. This landscape has low relief, rolling hills, and many streams, lakes, and wetlands. The warm continental climate includes fairly long winters and a moderate growing season (100–140 days). Proximity to the Great Lakes affects near-shore precipitation and temperature. Soils generally fall within the frigid temperature regime. The province lies between the boreal and broadleaf deciduous forest zones. Forest cover type groups include maple-beech-birch, aspen-birch, spruce-fir, white-red-jack pine, and elm-ash-red maple. Windfall is the most common disturbance throughout the province. Fire is the dominant disturbance in pine and mixed hardwood-pine forests, though catastrophic wildfires are rare. The area did experience slash fires following historical land clearing. Periodic droughts occur during the growing season. The major effects of European settlement occurred after 1800.

221 Eastern Broadleaf Forest. The geomorphology of this province is diverse. The eastern portion includes glaciated and unglaciated Atlantic coastal plain and piedmont forms; the western portion contains various glaciated and unglaciated plateaus. This province falls within the hot continental climate regime, with cold winters and warm summers. The soil temperature regime is mesic. Oak-hickory is the predominant forest cover type group; maple-beech-birch types are also present in some quantity. Other cover type groups present are white-red-jack pine, elm-ash-red maple, and oak-pine. Fire plays a role in this province. European settlers moved into parts of this province over 250 years ago and have affected the distribution and abundance of many species.

M221 Central Appalachian Broadleaf Forest-Coniferous Forest-Meadow. This province includes low mountains of crystalline rock, open low mountains with valleys underlain by folded strong and weak strata, and the dissected plateaus that form the Allegheny Mountains. The relief ranges up to 3,000 feet; elevation ranges from 300 to over 6,000 feet. Soil temperature regimes are mostly mesic with some frigid soils at high elevation. Vertical vegetation zonation prevails, with the lower limit of each forest belt rising in elevation toward the south. Common cover type groups from lowest to highest elevations would be oak-pine, oak-hickory, maple-beech-birch, and a limited amount of spruce-fir. Oak-hickory forest cover predominates. Chestnut was a significant component of the overstory before chestnut blight entered the area.

222 Midwestern Broadleaf Forest. The majority of this province has been glaciated and is covered with moderate to deep glacial till. The dominant landscape is a mixture of gently rolling till plains and flat outwash and lacustrine plains. A portion of the province, located where Wisconsin, Minnesota, and Iowa meet, was missed as the continental ice sheet moved around it. This loess-covered area consists of a maturely dissected upland plateau, bisected by the Mississippi River floodplain. The province has a hot continental climate, with a growing season that ranges from 120 to 160 days with abundant precipitation. Tornadoes can occur, though most forest disturbances are smaller in scale. Major forest cover type groups are oak-hickory and maple-beech-birch. Elm-ash-red maple, aspen-birch, and white-red-jack pine occur with noticeable regularity. Bluestem prairie, oak savanna, and floodplain forest landscapes are part of this province.

223 Central Interior Broadleaf Forest. This province is made up of various dissected plateaus and plains. Though most of the area was not glaciated, glacial loess is a common soil parent material. The growing season ranges from 180 to 200 days, though it is longer in the plains. The oak-hickory forest cover type group is dominant in the province. Maple-beech-birch, elm-ash-red maple, and oak-pine are common in some landscapes. Prairie ecosystems are historical landscape components. Fire and periodic flooding along rivers are well-known natural disturbances.

231 Southeastern Mixed Forest. The Northern United States study area includes only a small portion of this province. Overall the province is made up of piedmont and irregular gulf coastal plain. The province is characterized by gentle slopes and numerous low gradient streams, though there are plains with high hills, open low hills, and tablelands of moderate relief. The humid subtropical climate is marked by high humidity and the absence of cold winters. The oak-hickory forest cover type group is dominant.

232 Outer Coastal Plain Mixed Forest. This province is comprised of flat and irregular Atlantic and gulf coastal plains. There is little local relief. Stream, marshes, swamps, lakes, and estuaries are numerous. The area has a humid subtropical climate. The oak-hickory cover type group dominates the landscape. The loblolly-shortleaf pine cover type is an important component. Oak-gum-cypress and oak-pine are also present. Fire has been the principal historical disturbance, though summer droughts, winter ice storms, and hurricanes are natural disturbance drivers.

234 Lower Mississippi Riverine Forest. A small portion of this province falls in the Northern United States study area. This province includes the lower part of the Mississippi River from its confluence with the Ohio River. The landscape consists of a flat to gently sloping broad floodplain and low terraces made up of alluvium and loess. The area has many oxbow lakes. Swamps occur mainly outside our study area. The area has a humid subtropical climate. Cover type groups include oak-gum-cypress and oak-hickory. Periodic flooding is the principal historical disturbance. The flood regime has been altered by levees and dams.

251 Prairie Parkland (Temperate). This glaciated province is mostly gently rolling plains, though steep bluffs border a number of valleys. The surface geology consists of Pleistocene deposits, including Wisconsinan, Illinoisan, Kansan, and alluvium. Summers are hot and winters are cold. Prairie vegetation dominates the landscape. Forests fall primarily into the oak-hickory, elm-ash-red maple, and maple-beech-birch types. Other types found include aspen-birch, oak-gum-cypress, and oak-pine. Fire, floods, and tornadoes are natural disturbances in this area.

References

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