

User's Guide to Ecological System Summaries

The ecological system summaries provide information on the fifteen ecological systems recognized in the Minnesota Department of Natural Resources' native plant community (NPC) classification. These summaries originally appeared in three field guides to the native plant communities of Minnesota, which are organized by Minnesota's four ecological provinces (the Laurentian Mixed Forest, the Eastern Broadleaf Forest, the Prairie Parkland, and the Tallgrass Aspen Parklands provinces, with the last two provinces combined in one field guide). Although each of the three versions differs somewhat in content, there is much overlap.

Each summary typically contains a brief general description of the system, a discussion of the major ecological process or processes that influence the system, some of the characteristic plant adaptations to these processes, and information on distinctions between the floristic regions in the system (where applicable) or variation among the NPC classes in the system. The system summaries were developed to provide context and background information when using keys to the ecological systems or comparing NPC classes within a system.

In each system summary, the general description contains information on the basic structure and composition of the vegetation, on landscape setting, and on distribution of the system in the province. The major ecological processes most commonly discussed in the system summaries are nutrient cycling, moisture regime, and disturbance regime. In some system summaries, the treatment of ecological processes may include discussion of processes that span several systems (such as formation of peatlands) or successional relationships among systems. The information presented on plant adaptations includes some of the most prominent or illustrative adaptive responses of plants to the ecological processes that characterize the system.

Most of the systems are divided into floristic regions that reflect the distribution of Minnesota's plant species into characteristically northern, northwestern, central, southern, and prairie flora, or groups. Floristic region maps in the system summaries show the general ranges of floristic regions in the system. These maps were constructed by amalgamating the distribution maps of the NPC classes in the system. The boundaries between floristic regions are usually more diffuse than represented by boundary lines on the maps; floristic regions may overlap by 50 miles or more along some boundaries.

For systems that have been documented with substantial vegetation plot data, tables are provided listing species useful in differentiating the floristic regions. These tables can be used to help with decisions at dichotomies in keys to NPC classes that represent divisions between classes in different floristic regions. Some of the wooded systems also have tables with historical tree species compositions and disturbance regimes for the NPC classes in the system. The data presented in the tables come from analyses of Public Land Survey records from the late 1800s and early 1900s. Tree species followed by "(C)" in the tables are canopy trees and are present in the system at heights greater than 10 meters (33 feet) tall; trees followed by "(U)" are present in the understory and are less than 10 meters tall.

Notes:

► Measures of height, distance, and area in the system summaries are given in both English and metric units. English and metric equivalents are approximate because most original measurements were imprecise.

► For wooded systems, ages derived in analyses of historical growth stages and disturbance regimes are generally rounded to the nearest five years.

► Common names of vascular plants are used throughout the text of each summary. Scientific names are included with common names in tables. Scientific names are also included with common names at the first mention of a species in the text, with two exceptions. Trees are listed by common name only and rushes and sedges are always listed by both common and scientific name.

► Names of Ecological Classification System sections are abbreviated in the summaries. The full names are:

LAP – Lake Agassiz Aspen Parklands

MIM – Minnesota and Northeast Iowa Morainal

MOP – Northern Minnesota and Ontario Peatlands

MDL – Northern Minnesota Drift and Lake Plains

CGP – North-Central Glaciated Plains

NSU – Northern Superior Uplands

PPL – Paleozoic Plateau

RRV – Red River Valley

SSU – Southern Superior Uplands

WSU – Western Superior Uplands