

Prairie

Ecological Systems

Upland Prairie (UP)

Wetland Prairie (WP)

Native Plant Community Types (NPC)

Dry Barrens Prairie (Northern)
 Dry Sand-Gravel Prairie (Northern)
 Dry Sand-Gravel Brush-Prairie (Northern)
 Dry Hill Prairie (Northern)
 Mesic Prairie (Northern)
 Dry Barrens Prairie (Southern)
 Dry Sand-Gravel Prairie (Southern)
 Dry Bedrock Bluff Prairie (Southern)
 Dry Hill Prairie (Southern)
 Mesic Prairie (Southern)

Wet Seepage Prairie (Northern)
 Wet Prairie (Northern)
 Wet Saline Prairie (Northern)
 Wet Seepage Prairie (Southern)
 Wet Prairie (Southern)
 Wet Saline Prairie (Southern)

NPC Codes

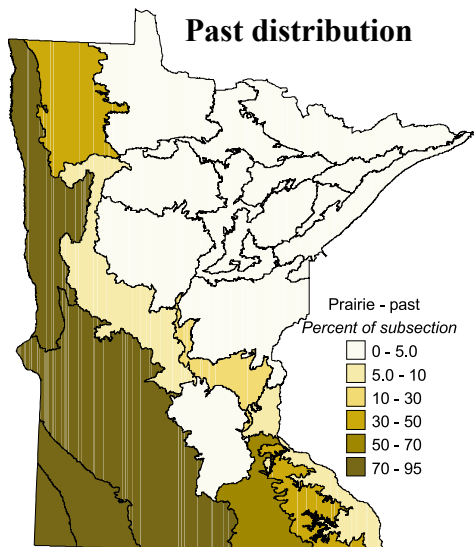
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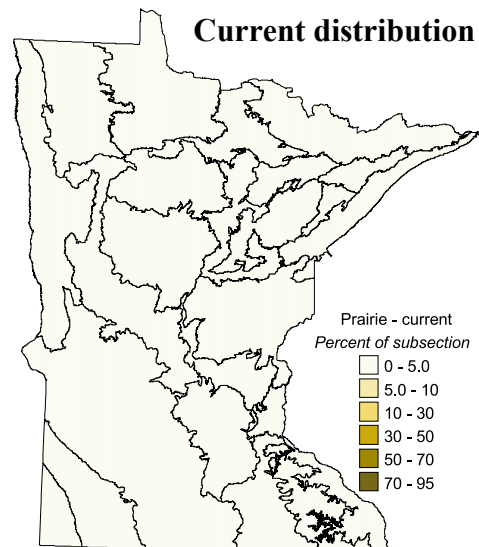


T.J. Whitfield, MN DNR

Dry Sand-Gravel Prairie (Southern) (Ups13b)



Source: Marschner 1930



Source: MN GAP 1993

General Description

Prairie habitat is dominated by native grasses with a species-rich component of forbs (herbaceous plants other than grasses or sedges). The major grasses on upland sites are big bluestem (*Andropogon gerardii*), prairie dropseed (*Sporobolus heterolepis*), and little bluestem (*Schizachyrium scoparium*). Big bluestem and prairie cordgrass (*Spartina pectinata*) are the major species on wetter sites, which also support a variety of sedge (*Carex*) species. The most common forbs in terms of species number are in the families Asteraceae and Fabaceae. On upland sites woody species are limited to dwarf shrubs such as leadplant (*Amorpha canescens*) and prairie rose (*Rosa arkansana*), whereas lowland sites support both dwarf shrubs (e.g., prairie rose) and true shrubs such as red-osier dogwood (*Cornus sericea*) and willows (*Salix* spp.)

Frequent fire is essential to maintaining prairie in Minnesota. Without fire, trees and shrubs invade prairie areas throughout the state. Fire at intervals of 10 years or less, on average, prevents trees and shrubs from becoming large enough to survive fire, thus maintaining the dominance of herbaceous species. Grazing by bison and elk was an important ecological process on pre-European settlement prairies, but the role of grazing and browsing in maintaining prairie is unclear. Grasses, which grow from lateral meristems at the base of the plant, are well adapted to grazing, which generally removes only the upper portion of the plant.

Prior to settlement by people of European descent, prairie was the dominant habitat throughout the Prairie Parkland Province and in most of the southernmost portions of the Eastern Broadleaf Forest Province, with the exception of the deeply dissected eastern portion of the Paleozoic Plateau. Prairie also occurred in much of the Anoka Sand Plain Subsection of the Eastern Broadleaf Forest Province. The distribution of prairie was generally limited to landscapes with relatively gentle topography, with the exception of “goat” prairies on dry, steep south-facing slopes in southeastern Minnesota. Hilly topography, abundant lakes and rivers, and higher rainfall impeded the spread of fire in the woodlands and forests to the north and east. Today less than one percent of the pre-European settlement prairie habitat remains in the state.

Prairie native plant communities span the soil moisture spectrum from dry sand-gravel prairies on coarse, droughty soils to wet prairies on poorly drained sites with a variety of soil textures. Prairie soils, with the exception of sandy substrates on dry sites, are generally classified as mollisols, which are very dark, base-rich mineral soils.

Examples of Important Features for Species in Greatest Conservation Need

Prairie provides habitat features for a variety of insect SGCN that are not found in other grassland habitats. These insects, which include seven species of butterflies and a leafhopper, require a specific host plant or microhabitat structure limited to prairie. Insects that lay eggs on a specific host plant include the **regal fritillary** (bearded birdfoot violet [*Viola pedatifida*]); the **arogos skipper** (big bluestem [*Andropogon gerardii*]); the **uncas skipper** (hairy grama [*Bouteloua hirsuta*]); and the **red-tailed leafhopper** (prairie dropseed [*Sporobolus heterolepis*]). In addition, several of these butterflies may require a particular microhabitat structure. For example, several skippers (including the **Dakota skipper**) seem to require bunchgrasses characteristic of the prairie habitat as opposed to sod-forming grasses, which characterize other grasslands. All of the butterflies require a variety of flowering forbs as nectar sources on which adults feed.

Three bird SGCN, **chestnut-collared longspur**, **Sprague’s pipit**, and **Baird’s sparrow**, are native prairie specialists that were common in portions of western Minnesota prior to settlement by people of European descent and are now extremely rare as the result of the conversion of prairie to cropland. Chestnut-collared longspurs and Sprague’s pipits prefer dry prairie sites with short grasses, which are maintained by fire or grazing. In North Dakota, pipit abundance is significantly correlated with native grasses; non-native plant mixes such as those sometimes used on lands enrolled in easements under the federal farm program provide very poor pipit (and Baird’s sparrow) habitat. Baird’s sparrows are sensitive to habitat fragmentation and prefer native prairie.

Management Options to Support Species in Greatest Conservation Need

- Support incentives that avoid conversion of grasslands into row crops where SGCN occur.
- Use mowing, cutting woody vegetation, prescribed fire, or careful use of herbicides to prevent the invasion of grasslands by trees and shrubs.
- Lengthen the cutting rotations for hay; avoid early-season mowing.
- Use light to moderate, rotational grazing programs to benefit SGCN
- Prevent fragmentation of grassland habitat.
- Avoid soil compaction in areas occupied by mammal SGCN.
- Increase native plant species components
- Control spread of invasive species to adjacent native-dominated sites.