

# Surrogate Grassland

## Ecological Systems

*Not defined*

## Native Plant Community Types (NPC)

Vegetation assemblages that dominate this habitat are not native plant communities.

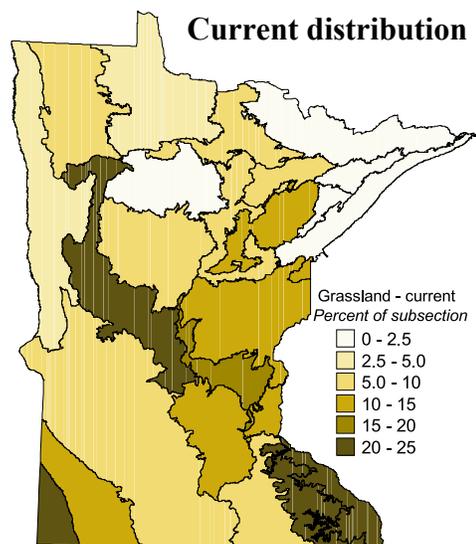
## NPC Codes

None



B. Bolduan MN DNR

Horse pasture in MN River Prairie Subsection



Source: MN GAP 1993

## General

Surrogate grasslands are grasslands that have developed as a result of human activities since settlement by people of European descent in Minnesota and are typically dominated by non-native, cool-season grasses. Surrogate grasslands include old fields, hayfields, pastures, and roadside grasslands (Sample and Mossman 1997). They occur on sites that once supported prairie or forest communities and are found across the state but are less common in the northeast. Dominant non-native grasses include smooth brome (*Bromus inermis*), quackgrass (*Agropyron repens*), redtop (*Agrostis stolonifera*), timothy (*Phleum pratense*), and Kentucky bluegrass (*Poa pratensis*). Reed canary grass (*Phalaris arundinacea*), a non-native invasive species, dominates this habitat on wetter sites. The forb component of surrogate grasslands is also dominated by non-native species, including several species of legumes such as yellow sweet clover (*Melilotus officinalis*), white sweet clover (*M. alba*), alfalfa (*Medicago sativa*), bird's-foot trefoil (*Lotus corniculatus*), and Canada thistle (*Cirsium arvense*). Native forbs may also occur in these grasslands, especially goldenrods, milkweeds, and asters.

Unmanaged surrogate grasslands are usually invaded by native and non-native trees and shrubs. Invasion by non-native species such as Siberian elm (*Ulmus pumila*) and Russian olive (*Elaeagnus angustifolia*), and by natives such as green ash (*Fraxinus pennsylvanica*), cottonwood (*Populus deltoides*), and sumacs (*Rhus* spp.), can convert grasslands to woodlands or shrublands, reducing or eliminating their habitat value for many grassland species.

## Examples of Important Features for Species in Greatest Conservation Need

Surrogate grasslands in Minnesota, such as pastures and hayfields, provide habitat for a number of grassland mammal, bird, and reptile and amphibian SGCN. Most of these species are adapted to prairie but are able to find “adequate” habitat features in surrogate grasslands. The vegetation structure of surrogate grasslands appears to be the key element for mammal and bird species that breed there. In addition, many species select larger patches, avoiding fragmented grasslands. **Plain’s pocket mice** require sparse grassland vegetation. **Prairie voles** prefer relatively dry upland prairies and pastures with a high diversity of forbs. **Grasshopper sparrows** forage exclusively on the ground and hence require more open sites in tallgrass grasslands and prairie. **Richardson’s ground squirrels** are usually found in short grass prairie or pasture where they can see over the vegetation.

**Henslow’s sparrows** require dense grasslands such as hayfields or tallgrass prairie with a certain height and density of stalks (especially standing dead vegetation) for singing perches; they rarely use fragmented grasslands (< 250 acres (100 hectares).

Some reptiles and mammals require certain soil textures for burrowing that are commonly associated with surrogate grasslands: plain’s pocket mice need exposed, sandy soil, whereas **western hognose snakes** need well-drained loose loamy or sandy soil.

## 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.