

Shrub/Woodland-Upland

Ecological Systems

Upland Prairie (UP)

Lake Shore (LK)

Rock Outcrop (RO)

Native Plant Community Types (NPC)

Dry Barrens Jack Pine Savanna (Northern)
 Dry Barrens Oak Savanna (Northern)
 Dry Sand-Gravel Oak Savanna (Northern)
 Dry Hill Oak Savanna (Northern)
 Mesic Brush-Prairie (Northern)
 Mesic Oak Savanna (Northern)
 Aspen Openings (Northern)
 Dry Barrens Oak Savanna (Southern)
 Dry Sand-Gravel Oak Savanna (Southern)
 Dry Hill Oak Savanna (Southern)
 Mesic Oak Savanna (Southern)
 Juniper Dune Shrubland (Lake Superior)
 Beach Ridge Shrubland (Lake Superior)
 Bedrock Shrubland (Inland)
 Bedrock Shrubland (Lake Superior)

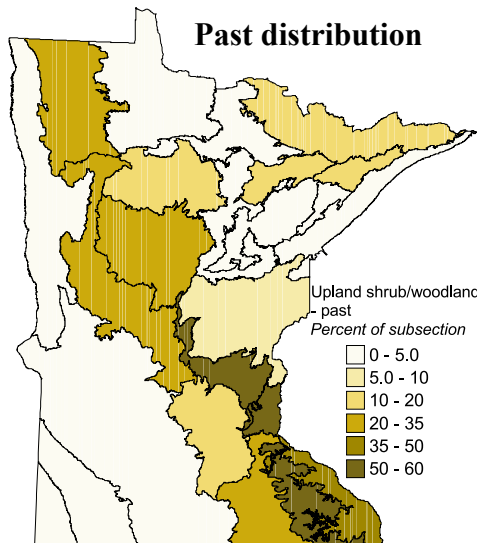
NPC Codes

UPn13a
 UPn13b
 UPn13c
 UPn13d
 UPn23a
 UPn24a
 UPn24b
 UPS14a
 UPS14b
 Ups14c
 UPS24a
 LKu32b
 Lku32d
 Ron23a
 Ron23b

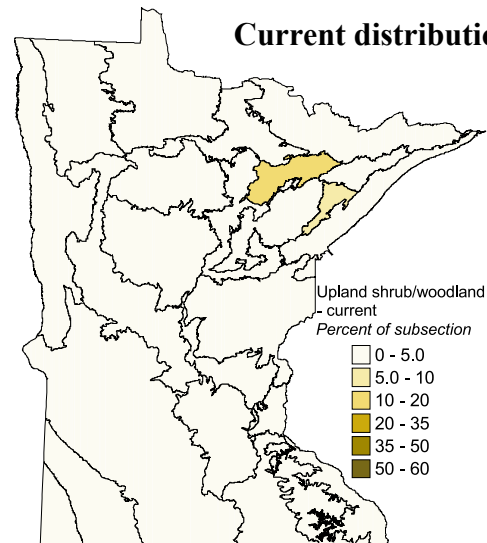


E. Fuge MN DNR

Dry Hill Oak Savanna (Southern) (UPS14c)



Source: Marschner 1930



Source: MN GAP 1993

General Description

The shrub/woodland-upland habitat is a combination of (1) savannas and brush-prairies, (2) bedrock shrublands, and (3) seral and edge upland shrub areas.

Savannas and brush-prairies typically occur where fire frequency or intensity is somewhat lower than in prairie landscapes, yet higher than in forested areas. At such sites, more fire-tolerant shrubs and trees can persist, forming brush-prairie and savanna communities. While savanna and brush-prairie communities intergrade, they are distinguished by certain characteristics. Savannas typically have scattered trees, sometimes clumps of trees, growing in a prairie matrix. Bur oak is the most common and widespread tree, but northern pin oak and, in the extreme southeastern part of the state, black oak are also typical. Small, open-grown, often gnarled bur oaks are the most distinctive savanna tree species. Savannas where jack pine is the predominant tree species occur on deep sand substrates in the northern half of the state. Brush-prairies are characterized by an abundance of taller shrubs, oak “grubs” and sprouts, and quaking aspen suckers. In brush-prairies, herbaceous prairie plants are still a major component of the vegetation, but the woody components are more prevalent than in prairie. In the absence of fire, both savannas and brush-prairies rapidly succeed to woodland; brush-prairie moves to woodland faster than does savanna. Today, most brush-prairies occur in the Tallgrass Aspen Parklands Province in northwestern Minnesota.

Bedrock shrublands are shrub-dominated plant communities on horizontal or sloping bedrock exposures. They are common in landscapes with thin soil over bedrock. This community is most common in the Border Lakes and North Shore Highlands subsections but also occurs in other locations where bedrock is at or near the surface, especially in other parts of the Laurentian Mixed Forest Province and along the Minnesota River in southwestern Minnesota. Characteristic shrub species in the Laurentian Mixed Forest Province include juneberreries (*Amelanchier* spp.), bush honeysuckle (*Diervilla lonicera*), and shrubby northern red oaks (*Quercus borealis*) or northern pin oak (*Q. ellipsoidalis*). Bedrock shrublands appear to be long-lived successional communities that develop following intense fire in woodlands or forest. These communities are generally small (< 25 acres) and seldom provide large areas of contiguous shrub/woodland-upland habitat for birds and large vertebrates.

Although seral upland shrublands are short-lived, they occur in forested landscapes where most of the trees have been killed by natural or human disturbances. Prior to settlement by people of European descent, most seral shrublands in Minnesota occurred as the result of fires and windstorms. The resulting shrublands ranged in size from those produced when one to several canopy trees died to those covering tens of thousands of acres following large stand-replacing fires. Following the advent of fire suppression in the 20th century, clear-cut logging has replaced fire in the creation of shrublands. Upland shrub edge habitats that occur widely as ecotones between forests and open habitats, such as agricultural fields, open wetlands, and water bodies, are an important component of upland shrub habitats that are more long-lived than seral shrublands.

Examples of Important Features for Species in Greatest Conservation Need

Five-lined skinks, six-lined racerunners, eastern hognose snakes, milk snakes, and lined snakes are most common in and around woodland edge habitats and savannas. Five-lined skinks use rock fissures and cracks in bedrock outcrops as hibernacula, but the suitability of this habitat is threatened by the encroachment of eastern red cedar (*Juniperus virginiana*). Several of these reptiles (six-lined racerunners, **eastern racers**, and lined snakes) prefer more open areas. Other species (five-lined skinks, eastern hognose snakes, and milk snakes) prefer edges, using openings as basking areas. Key habitat features for these species include down woody debris (for cover, nesting sites, and basking sites) and burrows or crevices as overwintering sites.

The decline of **red-headed woodpeckers** has been linked to fire suppression and the decline of oak savanna habitat, changes in farming practices (such as shifts to larger monoculture fields and the lost of hedgerows), and removal of dead trees and branches in urban areas. Large snags without bark are an important habitat feature for this woodpecker. Brushy old fields and road or railroad rights-of-way near open fields provide key habitats for **field sparrows**. **Bell's vireos** breed in dense, low shrubby areas, primarily in southeastern Minnesota. **Brown thrashers** require shrubby edge habitats and are found across the state except in dense forests. Thrashers do, however, use clear-cuts in forested regions of the state, and in western Minnesota shrubby fencerows and shelterbelts provide good habitat for this species.

Management Options to Support Species in Greatest Conservation Need

- Protect savannas and bedrock shrublands from development.
- Restore fire to overgrown savannas and brush-prairies.
- Encourage landowners to let brushy old fields develop in fallow fields.
- Encourage managers of urban and suburban parks to maintain dead trees and trees with dead branches.