

NATURAL COMMUNITIES AND RARE SPECIES OF RICE COUNTY, MINNESOTA

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NATURAL COMMUNITIES

Natural communities are functional units of the natural landscape, classified and described by considering vegetation, hydrology, landform, soils, and natural disturbance regimes. The natural community types and subtypes on this map are classified primarily by vegetation and major habitat features. Areas of natural vegetation were located using air photo interpretation and confirmed by field inventories conducted during 1990 through 1992. The natural community type and subtype descriptions given below describe vegetation and habitat characteristics present in Rice County. Uncolored areas represent land where the natural communities have been seriously altered or destroyed by human activities such as farming, logging, draining, and development. Classification and inventory of natural communities is an ongoing effort of the Minnesota Natural Heritage and Nongame Research Program and the Minnesota County Biological Survey.

UPLAND FORESTS

DECIDUOUS FOREST

Oak Forest - mesic subtype - dry-mesic forests on glacial till or loess; canopy dominated by one or more oak species, including northern red oak (*Quercus macrocarpa*), white oak (*Quercus alba*), and bur oak (*Quercus macrocarpa*); northern pin oak (*Quercus ellipsoidalis*), green ash (*Fraxinus pennsylvanica*), bitternut hickory (*Carya cordiformis*), basswood (*Tilia americana*), and black cherry (*Prunus serotina*) are common canopy associates and are sometimes codominant with the major oak species.

Maple-Basswood Forest - mesic forests on glacial till or loess; canopy dominated by sugar maple (*Acer saccharum*), basswood, and sometimes northern red oak; red elm (*Ulmus rubra*), American elm (*Ulmus americana*), green ash, black ash (*Fraxinus nigra*), white ash (*Fraxinus americana*), bur oak, white oak, butternut (*Juglans cinerea*), hackberry (*Celtis occidentalis*), and black cherry are common canopy associates.

Lowland Hardwood Forest - wet-mesic forests on river terraces above normal flood levels; canopy dominated by two or more of the following: butternut, basswood, American elm, red elm, hackberry, bitternut hickory, sugar maple, black ash, and green ash; large, widely spaced cottonwoods (*Populus deltoides*) are often present; ground flora composed mostly of upland herbs.

DECIDUOUS WOODLANDS / SAVANNAS

DECIDUOUS WOODLAND

Oak Woodland-Brushland - canopy cover 50-70%; dry to dry-mesic woodlands on glacial till; canopy dominated by bur oak or white oak; northern red oak, hackberry, green ash, basswood and red elm are common canopy associates; pronounced shrub layer, scattered prairie openings.

DECIDUOUS SAVANNA

Dry Oak Savanna - barrens subtype - canopy cover 10-70%; on outwash sands along parts of the Cannon River and its tributaries; canopy of scattered bur oaks and occasionally northern pin oak, northern red oak, and black cherry; shrubs patchy to dense; ground flora dominated by grasses and forbs typical of dry prairies.

PRAIRIES

UPLAND PRAIRIE

Mesic Prairie - mesic to wet-mesic prairie on glacial till; common species include big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), prairie dropseed (*Sporobolus heterolepis*), prairie cordgrass (*Spartina pectinata*), rough blazing star (*Liatris aspera*), and stiff goldenrod (*Solidago rigida*).

Dry Prairie - bedrock bluff subtype - dry prairie on thin loess over bedrock on steep, primarily south- to west-facing bluffs; rock outcrops frequent; common species include side-oats grama (*Bouteloua curtipendula*), little bluestem (*Schizachyrium scoparium*), big bluestem, hairy grama (*Bouteloua hirsuta*), purple prairie clover (*Pedicularis purpurea*), lead-plant (*Amorpha canescens*), and prairie larkspur (*Delphinium virreans*).

Dry Prairie - hill subtype - dry prairie on glacial till on south- to west-facing slopes; common species include big bluestem, little bluestem, side-oats grama, porcupine grass (*Stipa spartea*), silky aster (*Aster sericeus*), pasque-flower (*Pulsatilla nuttalliana*), and narrow-leaved puccoon (*Lithospermum incisum*).

FORESTED WETLANDS

HARDWOOD SWAMP - wet forests on peat soils in lake basins; canopy includes black ash, green ash, and American elm.

CONIFER SWAMP

Tamarack Swamp - wet forests on mineral, muck, and peat soils in lake basins; canopy dominated by tamarack (*Larix laricina*); ground frequently with mat of sphagnum mosses (*Sphagnum* spp.).

FLOODPLAIN FOREST

Floodplain Forest - wet forests on seasonally flooded river bottoms or lake margins; canopy includes silver maple (*Acer saccharinum*), black willow (*Salix nigra*), peach-leaved willow (*Salix amygdaloides*), and/or cottonwood; American elm, hackberry, and green ash are common canopy codominants; black ash, red elm, and box elder (*Acer negundo*) are common canopy associates; ground flora composed of species tolerant of frequent flooding.

SHRUB WETLANDS

SHRUB SWAMP

Willow Swamp - wet shrub community on mineral or organic soils in shallow basins or along stream margins; standing water present most of the year; dominated by willows (*Salix* spp.) and red-osier dogwood (*Cornus stolonifera*); herbaceous species are those characteristic of emergent marshes or wet meadows.

OPEN WETLANDS

WET MEADOW / FEN

Calcareous Seepage Fen - open wetland on organic soils with groundwater discharge; water with high pH; dominated by tussock sedge (*Carex stricta*); common species include swamp loosewort (*Peltularia lanceolata*), blazing-star (*Liatris ligulistylis*), Virginia mountain-mint (*Pycnanthemum virginiana*), closed gentian (*Gentiana andrewsii*), and turtlehead (*Chelone glabra*).

Wet Meadow - open wetland on wet mineral or peat soils in shallow basins and along stream margins; standing water present seasonally; dominated by tussock sedge or lake-bank sedge (*Carex lasiocarpa*); common species include spotted Joe-pye-weed (*Eupatorium maculatum*), common boneset (*Eupatorium perfoliatum*), great water dock (*Rumex crispus*), blue-joint grass (*Calamagrostis canadensis*), and northern marsh fern (*Thelypteris palustris*).

Rich Fen - open wetland on wet shallow peat or mineral soils with seasonally flowing water at the ground surface; water with slightly acid to circumneutral pH; common species include slender sedge (*Carex lasiocarpa*), tussock sedge, narrow reed-grass (*Calamagrostis neglecta*), and linear-leaved willow-herb (*Epilobium leptophyllum*).

EMERGENT MARSH - open wetland on mineral soils (sometimes with floating mats of peat), in shallow basins or stream margins; standing water present most of the year; dominant species vary but include broad-leaved cattail (*Typha latifolia*), narrow-leaved cattail (*Typha angustifolia*), and broad-leaved arrowhead (*Sagittaria latifolia*); common species include lake-bank sedge, bull-bearing water-hemlock (*Cicuta bulbifera*), and lesser duckweed (*Lemna minor*).

PRIMARY COMMUNITIES

Moist Cliff - moist to wet community on exposed north- to east-facing cliffs and on well-shaded south- to west-facing cliffs; mosses and foliose lichens common; vascular plant species include harebell (*Campanula rotundifolia*) and bulbous fern (*Cystopteris bulbifera*).

Lake Beach - sparsely vegetated community on gravelly beaches along lakehores; sedges are common, including spike-rush (*Eleocharis acicularis*), river bulrush (*Scirpus fluviatilis*), and sedges (*Carex* spp.).

MISCELLANEOUS FEATURES¹

- City and township boundaries
- Public ownership within managed areas (WMA = State Wildlife Management Area) (SNA = State Scientific and Natural Area)
- Private ownership within managed areas
- Primary roads
- Secondary roads
- Other roads
- Railroads
- Streams
- Lakes and rivers

RARE SPECIES

The Minnesota Natural Heritage and Nongame Research Program maintains a list of plants and animals considered rare in the state. Most of these species are protected under the provisions of the Federal or Minnesota Endangered Species acts, or are being considered for protection. The following rare species have been found in Rice County. An asterisk (*) indicates that no recent (post-1970) observation of that species has been confirmed. Mapped locations were determined by ground inventory and historical records.

Plants

Green dragon
Sulphur's milkweed
White heath aster
Wild indigo
Kitten-tails
Cutleaf grapefern
Jointed sedge
Davis' sedge
Gray's sedge
Sterile sedge
Butternut
Squirrel-corn
Rattlesnake-master
Dwarf trout lily
Canada frostweed
Prairie bush clover
Lila-leaved two-leaf
Slender maid
One flowered broomrape
Cowbane
Ginseng
Rough-seeded lamelflower
Valerian

(*Arisaema dracontium*)
(*Asclepias sullivanti*)
(*Aster pilosus*)
(*Baptisia bracteata* var. *glabrescens*)
(*Besseyia bullii*)
(*Betula pumila*)
(*Carex conjuncta*)
(*Carex lasiocarpa*)
(*Carex grisea*)
(*Cephaelis occidentalis*)
(*Dicentra canadensis*)
(*Eryngium yuccifolium*)
(*Erythronium propellans*)
(*Helianthemum canadense*)
(*Lysichiton albertianus*)
(*Lysichiton albertianus*)
(*Najas gracillima*)
(*Oenothera uniflora*)
(*Oxypolis rigidior*)
(*Panax quinquefolium*)
(*Talinum rugospermum*)
(*Valeriana edulis* ssp. *ciliata*)

Animals

Birds
Upland sandpiper
Red-shouldered hawk
Audubon flycatcher
Loggerhead shrike
Louisiana waterthrush

(*Bartonia longicauda*)
(*Buteo lineatus*)
(*Empidonax virens*)
(*Lanius ludovicianus*)
(*Seiurus motacilla*)

Mammals
Prairie vole
Western harvest mouse

(*Microtus ochrogaster*)
(*Reithrodontomys megalotis*)

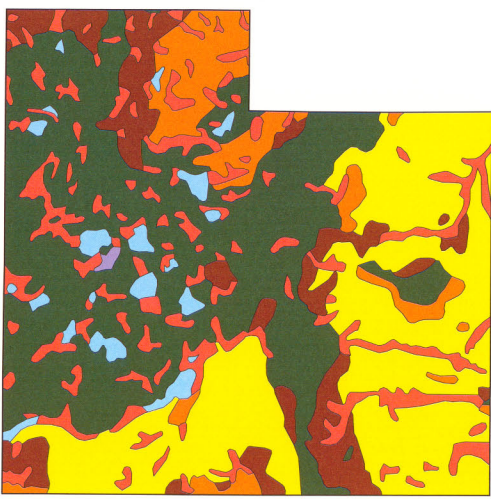
Reptiles
Wood turtle
Fox snake
Blanding's turtle

(*Chelydra insculpta*)
(*Eagle sculpin*)
(*Emydoidea blandingii*)

Mussels
Mucket mussel
Fluted-shell mussel
Black sandshell mussel
Ohio pigtoe mussel

(*Actinonaias ligamentina*)
(*Lamignon costata*)
(*Ligumia recta*)
(*Pseudodon cordatus*)

THE ORIGINAL VEGETATION OF RICE COUNTY



The original vegetation of Rice County is shown here as interpreted by Francis J. Marschner² from Public Land Survey Records, with slight modifications of Marschner's map unit descriptions as appropriate for southeast Minnesota. Current natural community names that fall within the categories described by Marschner are given in parentheses.

HARDWOOD FORESTS

Big Woods - bur oak, white oak, red oak, northern pin oak, elm, basswood, ash, maple, hornbeam, aspen, birch (Maple-Basswood Forest, Oak Forest, Floodplain Forest, Lowland Hardwood Forest, Hardwood Swamp).

BRUSHLAND

Oak Openings and Barrens - scattered trees and groves of oaks of scrubby form with some brush and thickets (Dry Oak Savanna; also includes many areas that have succeeded to Oak Woodland-Brushland or Oak Forest).

Aspen-Oak Land - aspen, generally dense, and small in most places, with scattered oaks and few elms, ash and basswood (Oak Forest, early successional stage).

GRASSLAND

Prairie - (Dry Prairie, Mesic Prairie).

Wet Prairies, Marshes and Sloughs - marsh-grasses, flags, rushes, wild rice, with willow in places (Willow Swamp, Emergent Marsh, Wet Meadow, Calcareous Seepage Fen, Rich Fen).

BOGS AND SWAMPS

Conifer Bogs and Swamps - tamarack (Tamarack Swamp).

FOOTNOTES

- Natural communities were interpreted from 1:65,000 color infrared photography taken in May, 1980 (National High-Altitude Photography Program, USGS, U.S. Department of the Interior). Natural community boundaries were digitized at a scale of 1:24,000.
- Data are available from the Minnesota Natural Heritage Information System, Department of Natural Resources, St. Paul, Minnesota. Phone (612) 296-3344.
- Minnesota Natural Heritage Program, 1993. Minnesota's native vegetation: A key to natural communities, revised 1.5. Minnesota Department of Natural Resources, St. Paul, Minnesota. 111 pp.
- Civil division, transportation, and water features data were obtained from the Department of Natural Resources, St. Paul, Minnesota. Managed area boundaries were obtained from the Minnesota Natural Heritage and Nongame Research Program and the River Bend Nature Center. Natural community boundaries and certain miscellaneous features were digitized from 1:24,000 U.S. Geological Survey topographic base maps. Land ownership within managed areas is sometimes obscured by natural community map units. Every effort was made to obtain current versions of these data; however, errors may exist on this map.
- Federal and state legislation concerning endangered species is detailed in Coffin, B. and L. Plummer, eds. 1988. *Minnesota's endangered flora and fauna*. University of Minnesota Press, Minneapolis, Minnesota. 473 pp.
- Marschner, F.J. 1974. The original vegetation of Minnesota (map, scale 1:500,000). USDA Forest Service, North Central Forest Experiment Station, St. Paul, Minnesota (redraft of the original 1930 edition).