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Department of Natural Resources
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Minnesota County Biological Survey Map Series No. 7 (1994)
Anoka and Ramsey Counties, Minnesota

NATURAL COMMUNITIES AND RARE SPECIES OF ANOKA AND RAMSEY COUNTIES, MINNESOTA

by
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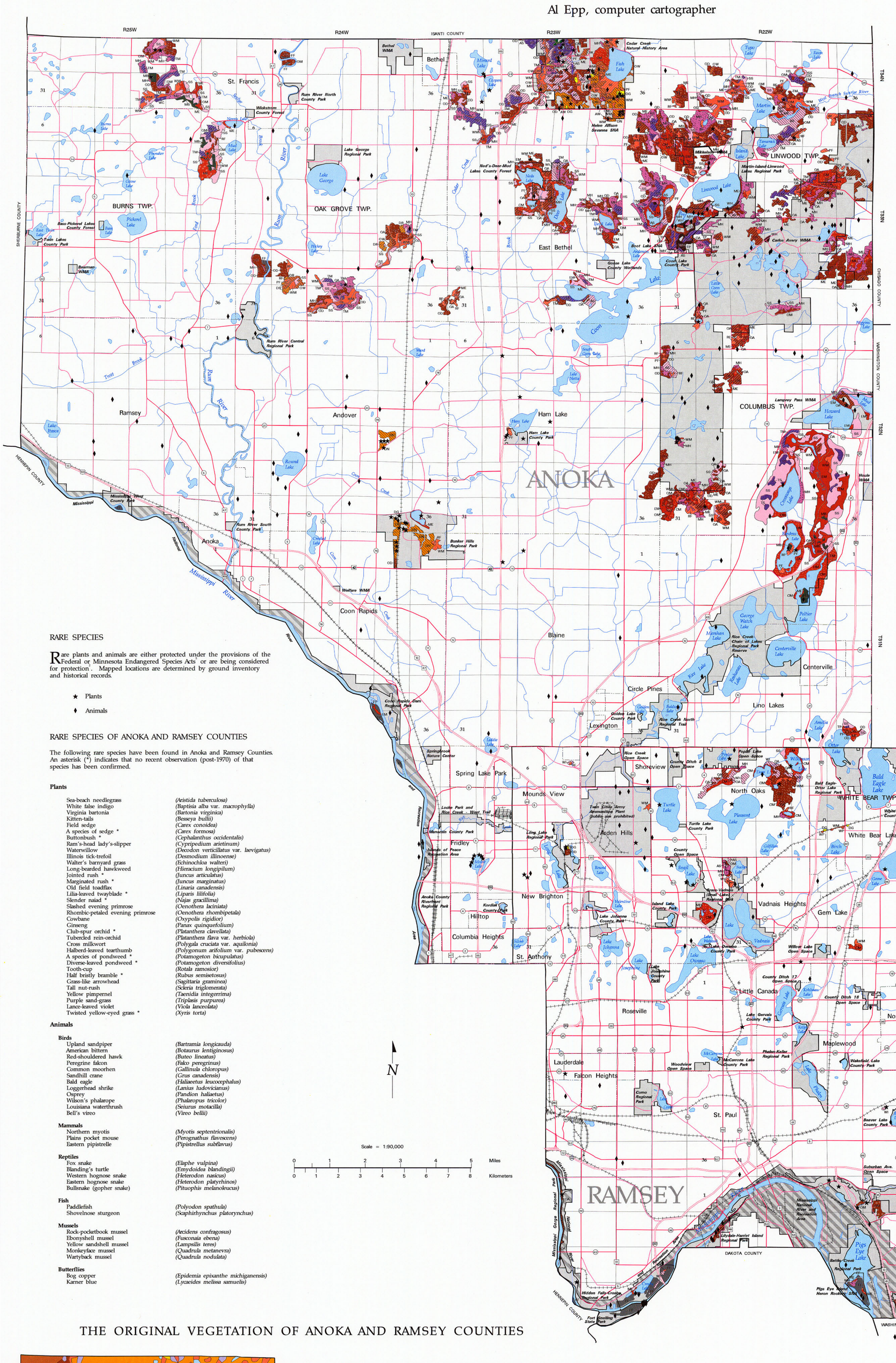


Natural communities are functional units of the natural landscape, classified and described by considering vegetation, hydrology, landform, soils, and natural disturbance regimes. The natural community types and subtypes on this map are classified primarily by vegetation and major habitat features. Areas of natural vegetation were located by air photo interpretation[1] and confirmed by field inventories conducted in 1989 through 1990[2]. The natural community type and subtype descriptions given below describe vegetation and habitat characteristics present in Anoka and Ramsey Counties[3]. 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 Natural Heritage Program and the Minnesota County Biological Survey[4].

DESCRIPTION OF MAP UNITS

UPLAND FORESTS

DECIDUOUS FOREST

Oak Forest - dry subtype - dry forests on outwash sand or well-drained slopes; canopy dominated by northern pin oak *(Quercus ellipsoidalis)*, bur oak *(Quercus macrocarpa)*, or white oak *(Quercus alba)*; quaking aspen *(Populus tremuloides)* common at wetland margins; subcanopy either absent or composed of red maple *(Acer rubrum)*.

Oak Forest - mesic subtype - mesic forests on glacial till or moist slopes; canopy dominated by a variety of species including red oak *(Quercus rubra)*, basswood *(Tilia americana)*, bur oak, white oak, and northern pin oak; ironwood *(Ostrya virginiana)* in subcanopy.

Oak Forest - subtype not determined; either dry or mesic.

Maple-Basswood Forest - mesic forests on glacial till; canopy dominated by sugar maple *(Acer saccharum)*, basswood, red oak, and green ash *(Fraxinus pennsylvanica)*.

Lowland Hardwood Forest - wet-mesic forests on moist mineral soil above normal flood levels; canopy dominated by black ash *(Fraxinus nigra)*, green ash, basswood, bur oak, slippery elm *(Ulmus rubra)*, or quaking aspen; ground layer dominated by upland forest herbs such as lady fern *(Athyrium angustum)* or wild sarsaparilla *(Aralia nudicaulis)*.

CONIFEROUS FOREST

White Pine Forest - dry-mesic forests on outwash sand; canopy dominated by white pine *(Pinus strobus)*; subcanopy cover is sparse to patchy, composed of deciduous trees such as red oak, red maple, big-toothed aspen *(Populus grandidentata)*, or ironwood.

MIXED CONIFEROUS - DECIDUOUS FOREST

White Pine-Hardwood Forest - dry to dry-mesic forests on sandy outwash; canopy dominated by white pine and deciduous trees such as red oak, northern pin oak, and red maple; understory composition is similar to oak forests.

DECIDUOUS WOODLAND / SAVANNA

DECIDUOUS WOODLAND

Aspen Woodland - mesic to wet-mesic woodlands on level, low-lying areas; patchy canopy dominated by quaking aspen; common species include gray dogwood *(Cornus foemina* ssp. *racemosa)*, common blackberry *(Rubus allegheniensis)*, and sensitive fern *(Onoclea sensibilis)*.

Oak Woodland-Brushland - dry to dry-mesic woodlands; patchy canopy dominated by bur oak or northern pin oak; pronounced shrub layer dominated by American hazelnut *(Corylus americana)*, red raspberry *(Rubus strigosus)*, or choke cherry *(Prunus virginiana)*; scattered openings with prairie species.

DECIDUOUS SAVANNA

Dry Oak Savanna - sand-gravel subtype - dry to dry-mesic savannas on outwash sand or on sandy river terraces; bur oaks or northern pin oaks scattered or in groves; ground layer dominated by grasses and forbs typical of dry sand-gravel prairies.

Dry Oak Savanna - barrens subtype - dry savannas on dune formations; bur oaks and northern pin oaks scattered or in groves; ground layer dominated by dry prairie vegetation that is especially sparse on dune crests, dry slopes, and sand blowouts; characteristic species include sand reedgrass *(Calamovilfa longifolia)*, silky prairie-clover *(Petalostemon villosum)*, and false heather *(Hudsonia tomentosa)*.

PRAIRIE

UPLAND PRAIRIE

Dry Prairie - sand-gravel subtype - dry to dry-mesic prairie on sandy outwash or alluvium; common species include little bluestem *(Schizachyrium scoparium)*, porcupine grass *(Stipa spartea)*, rough blazing-star *(Liatris aspera)*, prairie violet *(Viola pedatifida)*, and large-flowered beard-tongue *(Penstemon grandiflorus)*.

FORESTED WETLANDS

HARDWOOD SWAMP FOREST

Mixed Hardwood Swamp - wet forests on organic soil; canopy any combination of paper birch *(Betula papyrifera)*, yellow birch *(Betula alleghaniensis)*, red maple, quaking aspen, or black ash.

Black Ash Swamp - wet forests on organic soil; canopy dominated by black ash with lesser amounts of paper birch, yellow birch, or red maple.

CONIFER SWAMP FOREST

Tamarack Swamp - minerotrophic subtype - wet forests on organic soil; canopy dominated by tamarack *(Larix laricina)* with red maple, paper birch, or black ash; common shrubs are speckled alder *(Alnus incana* ssp. *rugosa)*, winterberry *(Ilex verticillata)*, and poison sumac *(Rhus vernix)*.

Tamarack Swamp - sphagnum subtype - wet forests on organic soil; canopy dominated by tamarack; shrub layer dominated by leatherleaf *(Chamaedaphne calyculata)* and Labrador tea *(Ledum groenlandicum)* with a hummocky mat of sphagnum mosses *(Sphagnum* spp.) below.

Tamarack Swamp - subtype not determined; either minerotrophic or sphagnum.

White Cedar Swamp - wet forests on organic soil; canopy dominated by northern white cedar *(Thuja occidentalis)* with lesser amounts of black ash and yellow birch; common shrub and ground layer species are poison sumac, dwarf blackberry *(Rubus pubescens)*, and naked bishop's cap *(Mitella nuda)*.

FLOODPLAIN FOREST

Floodplain Forest - forests on seasonally flooded river bottoms; canopy dominated by silver maple *(Acer saccharinum)*, sometimes with bur oak, green ash, or cottonwood *(Populus deltoides)*.

SHRUB WETLANDS

SHRUB SWAMP

Alder Swamp - wet shrub community on organic soil; dominated by speckled alder; lake sedge *(Carex lacustris)* often common below.

Willow Swamp - wet shrub community on mineral or organic soil; dominated by willows *(Salix gracilis, S. bebbiana, and S. discolor)* and often with red-osier dogwood *(Cornus stoloniifera)*.

OPEN WETLANDS

WET MEADOW / FEN

Wet Prairie - prairies on wet or seasonally-wet mineral or organic soil; common graminoids are big bluestem, prairie cordgrass *(Spartina pectinata)*, Hayden's sedge *(Carex haydenii)*, or blue-joint *(Calamagrostis canadensis)*; characteristic species include mountain-mint *(Pycnanthemum virginianum)*, yellow stargrass *(Hypoxis hirsuta)*, and Culver's root *(Veronicastrum virginicum)*.

Wet Meadow - open wetlands on mineral or organic soil in shallow basins or at lake or stream margins; dominated by tussock sedge *(Carex stricta)*, Hayden's sedge, lake sedge, or blue-joint; commonly with joe-pye-weed *(Eupatorium maculatum)*, meadowsweet *(Spiraea alba)*, and slender willow *(Salix gracilis)*.

Rich Fen - open wetlands on organic soil; dominated by wire-grass *(Carex lasiocarpa)* or tussock sedge; with marsh fern *(Thelypteris palustris)*, three-way sedge *(Dulichium arundinaceum)*, marsh cinquefoil *(Potentilla palustris)*, and little or no sphagnum moss.

Poor Fen - shallow peatlands with more or less continuous layer of sphagnum mosses; dominant vascular plants are wire-grass *(Carex lasiocarpa)* and leatherleaf; commonly with small cranberry *(Vaccinium oxycoccus)*.

EMERGENT MARSH

Cattail Marsh - open wetland of floating or rooted vegetation mats in shallow basins or at lake margins; dominated by broad-leaved cattail *(Typha latifolia)*.

Mixed Emergent Marsh - open wetland typically composed of vegetation rooted in mineral substrate at lake or stream margins; dominant species are often broad-leaved arrowhead *(Sagittaria latifolia)* or bulrushes *(Scirpus* spp.).

RARE SPECIES

Rare plants and animals are either protected under the provisions of the Federal or Minnesota Endangered Species Acts[5] or are being considered for protection[3]. Mapped locations are determined by ground inventory and historical records.

★ Plants

♦ Animals

RARE SPECIES OF ANOKA AND RAMSEY COUNTIES

The following rare species have been found in Anoka and Ramsey Counties. An asterisk (*) indicates that no recent observation (post-1970) of that species has been confirmed.

Plants

Sea-beach needlegrass	*(Aristida tuberculosa)*
White false indigo	*(Baptisia alba* var. *macrophylla)*
Virginia bartonia	*(Bartonia virginica)*
Kitten-tails	*(Besseya bullii)*
Field sedge	*(Carex conoidea)*
A species of sedge *	*(Carex formosa)*
Buttonbush *	*(Cephalanthus occidentalis)*
Ram's-head lady's-slipper	*(Cypripedium arietinum)*
Watercress willow	*(Decodon verticillatus* var. *laevigatus)*
Illinois tick-trefoil	*(Desmodium illinoense)*
Walter's barnyard grass	*(Echinochloa walteri)*
Long-bearded hawkweed	*(Hieracium longipilum)*
Jointed rush *	*(Juncus articulatus)*
Marginated rush *	*(Juncus marginatus)*
Old field toadflax	*(Linaria canadensis)*
Lilia-leaved twayblade *	*(Liparis lilifolia)*
Slender naiad *	*(Najas gracillima)*
Slashed evening primrose	*(Oenothera laciniata)*
Rhombic-petaled evening primrose	*(Oenothera rhombipetala)*
Cowbane	*(Oxypolis rigidior)*
Ginseng	*(Panax quinquefolium)*
Club-spur orchid *	*(Platanthera clavellata)*
Tubercled rein-orchid	*(Platanthera flava* var. *herbiola)*
Cross milkwort	*(Polygala cruciata* var. *aquilonia)*
Halberd-leaved tearthumb	*(Polygonum arifolium* var. *pubescens)*
A species of pondweed *	*(Potamogeton bicupulatus)*
Diverse-leaved pondweed *	*(Potamogeton diversifolius)*
Tooth-cup	*(Rotala ramosior)*
Half bristly bramble *	*(Rubus semisetosus)*
Grass-like arrowhead	*(Sagittaria graminea)*
Tall nut-rush	*(Scleria triglomerata)*
Yellow pimpernel	*(Taenidia integerrima)*
Purple sand-grass	*(Triplasis purpurea)*
Lance-leaved violet	*(Viola lanceolata)*
Twisted yellow-eyed grass *	*(Xyris torta)*

Animals

Birds

Upland sandpiper	*(Bartramia longicauda)*
American bittern	*(Botaurus lentiginosus)*
Red-shouldered hawk	*(Buteo lineatus)*
Peregrine falcon	*(Falco peregrinus)*
Common moorhen	*(Gallinula chloropus)*
Sandhill crane	*(Grus canadensis)*
Bald eagle	*(Haliaeetus leucocephalus)*
Loggerhead shrike	*(Lanius ludovicianus)*
Osprey	*(Pandion haliaetus)*
Wilson's phalarope	*(Phalaropus tricolor)*
Louisiana waterthrush	*(Seiurus motacilla)*
Bell's vireo	*(Vireo bellii)*

Mammals

Northern myotis	*(Myotis septentrionalis)*
Plains pocket mouse	*(Perognathus flavescens)*
Eastern pipistrelle	*(Pipistrellus subflavus)*

Reptiles

Fox snake	*(Elaphe vulpina)*
Blanding's turtle	*(Emydoidea blandingii)*
Western hognose snake	*(Heterodon nasicus)*
Eastern hognose snake	*(Heterodon platyrhinos)*
Bullsnake (gopher snake)	*(Pituophis melanoleucus)*

Fish

Paddlefish	*(Polyodon spathula)*
Shovelnose sturgeon	*(Scaphirhynchus platorynchus)*

Mussels

Rock-pocketbook mussel	*(Arcidens confragosus)*
Ebonyshell mussel	*(Fusconaia ebena)*
Yellow sandshell mussel	*(Lampsilis teres)*
Monkeyface mussel	*(Quadrula metanevra)*
Wartyback mussel	*(Quadrula nodulata)*

Butterflies

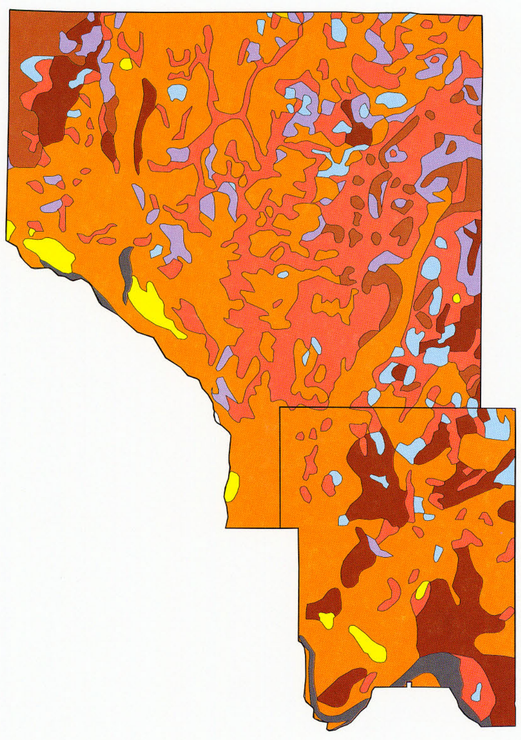
Bog copper	*(Epidemia epixanthe michiganensis)*
Karner blue	*(Lycaeides melissa samuelis)*

N

Scale = 1:90,000

0 1 2 3 4 5 Miles
0 1 2 3 4 5 6 7 8 Kilometers

THE ORIGINAL VEGETATION OF ANOKA AND RAMSEY COUNTIES



The original vegetation of Anoka and Ramsey Counties is shown here as interpreted by Frances J. Marschner[1] from Public Land Survey Records with slight modifications of Marschner's map unit descriptions as appropriate for east-central Minnesota. Current natural community names[2] are given in parentheses as well as highly specialized natural communities that were not described by Marschner or by the early land surveyors.

DESCRIPTION OF MAP UNITS

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 - mesic subtype, White Pine-Hardwood Forest, Lowland Hardwood Forest).

River Bottom Forest - Elm, ash, cottonwood, boxelder, silver maple, willow, aspen, hackberry (Floodplain Forest).

BRUSHLAND

Brush Prairie - Grass and brush of oak and aspen (Oak Woodland-Brushland, Dry Oak Savanna).

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 a 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 and alder-brush in places (Alder Swamp, Willow Swamp, Rich Fen, Wet Meadow, Emergent Marsh).

BOGS AND SWAMPS

Conifer Bogs and Swamps - Tamarack (Tamarack Swamp, White Cedar Swamp, Rich Fen, Poor Fen).

FOOTNOTES

1. 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).
2. Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation:; a key to natural communities. Version 1.5. Minnesota Department of Natural Resources, St. Paul, Minnesota. 111 pp.

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Diagram showing how sections are numbered in a township

MISCELLANEOUS FEATURES[6]

- Minor Civil Divisions
- Managed Area 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

FOOTNOTES

1. Natural communities were interpreted from color infrared photography taken in October, 1985 (1:24,000; Metropolitan Council, St. Paul, Minnesota).
2. Data are available from the Minnesota Natural Heritage Information System, Department of Natural Resources, St. Paul, Minnesota. Phone (612) 296-3344.
3. Wovcha, D.S., B.C. Delaney, and G.E. Nordquist. In press. Minnesota's St. Croix River Valley and Anoka Sandplain: a guide to native habitats. University of Minnesota Press, Minneapolis, Minnesota.
4. Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: a key to natural communities. Version 1.5. Minnesota Department of Natural Resources, St. Paul, Minnesota. 111 pp.
5. Federal and state legislation concerning endangered species is detailed in Coffin, B. and L. Pfannmuller, eds. 1988. Minnesota's endangered flora and fauna. University of Minnesota Press, Minneapolis, Minnesota. 473 pp.
6. 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 Program, Anoka County Parks, and Ramsey County Parks. 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 may not be clear where natural community map units are shown. Every effort was made to obtain current versions of these data, however, errors may exist on this map.

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