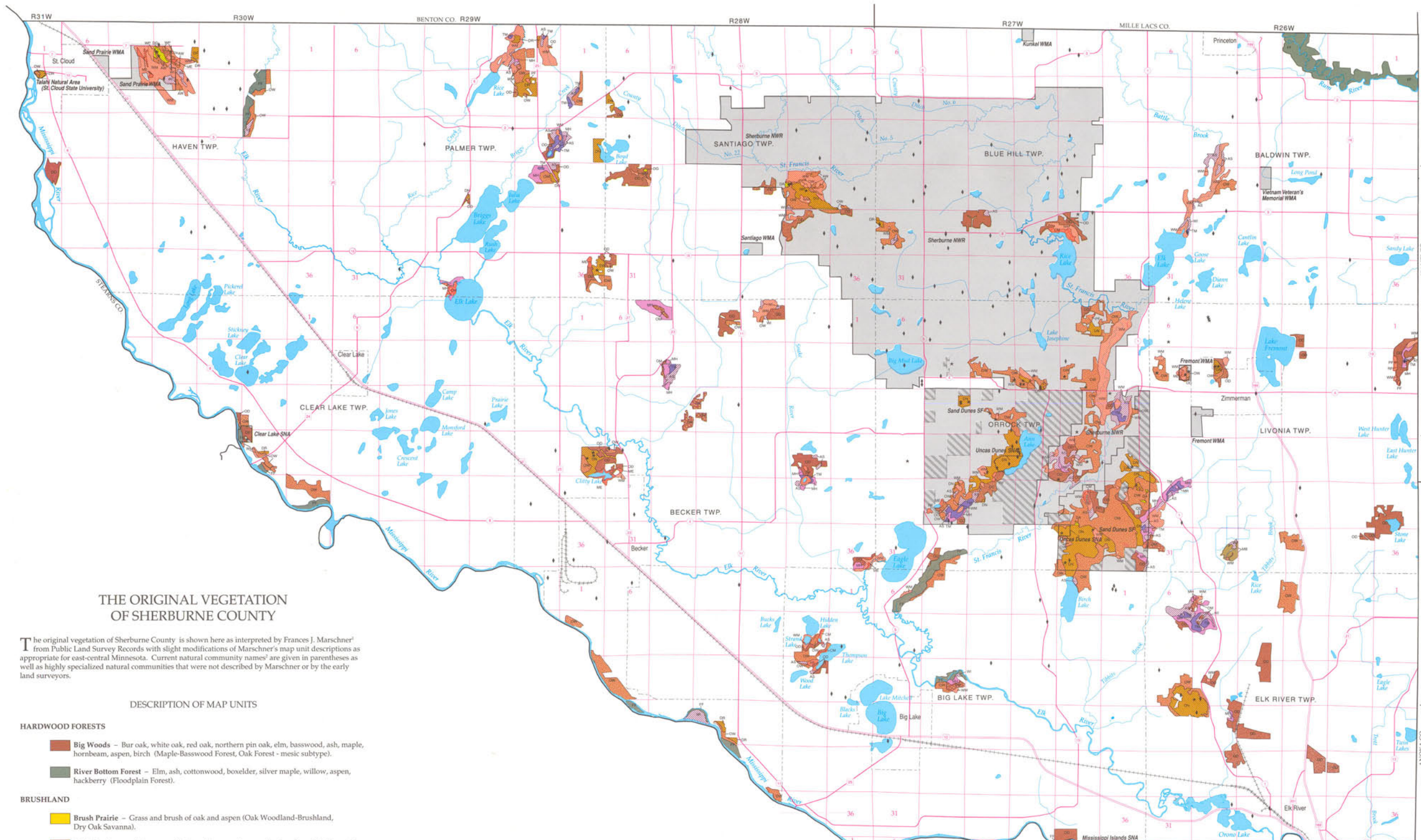


# NATURAL COMMUNITIES AND RARE SPECIES OF SHERBURNE COUNTY, MINNESOTA

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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 and confirmed by field inventories conducted in 1989 and 1990. The natural community type and subtype descriptions given below describe vegetation and habitat characteristics present in Sherburne 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 Natural Heritage Program and the Minnesota County Biological Survey.



## THE ORIGINAL VEGETATION OF SHERBURNE COUNTY

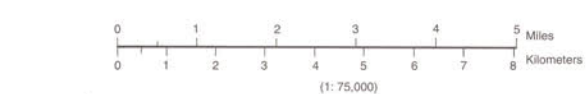
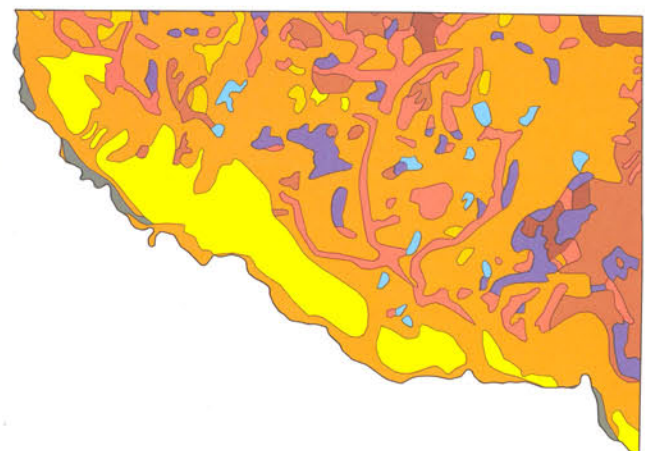
The original vegetation of Sherburne County is shown here as interpreted by Frances J. Marschner<sup>1</sup> from Public Land Survey Records with slight modifications of Marschner's map unit descriptions as appropriate for east-central Minnesota. Current natural community names are given in parentheses 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).
  - 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, Cattail Marsh).
- BOGS AND SWAMPS**
- Conifer Bogs and Swamps** - Tamarack (Tamarack Swamp, Rich Fen, Poor Fen).

**FOOTNOTES**

- 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).
- Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: a key to natural communities. Unpublished version 1.5. Minnesota Department of Natural Resources, St. Paul, Minnesota.



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

### DECIDUOUS WOODLAND / SAVANNA

- DECIDUOUS WOODLAND**
  - Aspen Woodland** - mesic to wet-mesic woodlands on level, low-lying areas; sparse canopy dominated by trembling aspen with dogwoods (*Cornus* spp.), willows (*Salix* spp.), blackberries (*Rubus* spp.), and sedges (*Carex* spp.) in the understorey.
  - Oak Woodland - Brushland** - dry to dry-mesic woodlands; patchy canopy dominated by bur oak or northern pin oak; pronounced shrub layer dominated by American hazel (*Corylus americana*), red raspberry (*Rubus strigosus*), blackberry (*Rubus alleghaniensis*), smooth sumac (*Rhus glabra*), prickly ash (*Zanthoxylum americanum*), or red cedar (*Juniperus virginiana*).
- DECIDUOUS SAVANNA**
  - Dry Oak Savanna - sand-gravel subtype** - dry to mesic savannas on well-drained river terraces and on glacial outwash; composed of scattered, open-grown bur oak or northern pin oaks; ground layer dominated by grasses and forbs typical of Dry Prairie - sand-gravel subtype.
  - Dry Oak Savanna - barrens subtype** - dry savannas on dune formations; bur oaks or northern pin oaks scattered or in groves; dune crests, south- or southwest-facing slopes, and sand blowouts generally open and sparsely vegetated by grasses and forbs characteristic of Dry Prairie - barrens subtype.

### PRAIRIE

- UPLAND PRAIRIE**
  - Dry Prairie - sand-gravel subtype** - dry to mesic prairies on the Mississippi River Terrace and on glacial outwash sand; common species include big bluestem (*Andropogon gerardii*), porcupine grass (*Stipa spartea*), purple prairie-clover (*Petalostemon purpureum*), rough blazing star (*Liatris aspera*), prairie violet (*Viola pedatifida*), and Muhlenberg's sedge (*Carex multisetigera*).
  - Dry Prairie - barrens subtype** - dry prairies on well-drained, low-fertility sand, typically on dune crests, southwest-facing dune slopes, or local areas of wind-blown sand; characteristic species include sand reedgrass (*Calamovilfa longifolia*), sea-beach needlegrass (*Aristida tuberculosa*), silky prairie clover (*Petalostemon villosus*), false heather (*Hudsonia tomentosa*), and stiff sunflower (*Helianthus rigidus*).

### RARE SPECIES

Rare plants and animals are either protected under the provisions of the Federal or Minnesota Endangered Species Acts<sup>2</sup> or are being considered for protection. Mapped locations are determined by ground inventory and historical records.

- Plants
- Animals

### RARE SPECIES OF SHERBURNE COUNTY

The following rare species have been found in Sherburne County. A dagger (†) indicates that no recent observation (post-1970) of that species has been confirmed.

- Plants**
- |                           |                                                  |
|---------------------------|--------------------------------------------------|
| Small-leaved pussytoes    | <i>Antennaria parvifolia</i>                     |
| Sea-beach needlegrass     | <i>Aristida tuberculosa</i>                      |
| Field sedge               | <i>Carex canadensis</i>                          |
| Hill's thistle            | <i>Cirsium hillii</i>                            |
| Long-bearded hawkweed     | <i>Hieracium longipalmis</i>                     |
| Old field toadflax        | <i>Linaria arvensis</i>                          |
| Cowbane                   | <i>Oxypetalum rigidum</i>                        |
| Halberd-leaved leathernut | <i>Polygonum arifolium</i> var. <i>pubescens</i> |
| Tall nut-rush             | <i>Scirpus rigiformis</i>                        |
| Lance-leaved violet       | <i>Viola lanceolata</i>                          |
- Animals**
- |                     |                                      |
|---------------------|--------------------------------------|
| American bittern    | <i>(Botaurus lentiginosus)</i>       |
| Red-shouldered hawk | <i>(Buteo lineatus)</i>              |
| Yellow rail †       | <i>(Cataractopus namobrancensis)</i> |
| Common moorhen      | <i>(Gallinula chloropus)</i>         |
| Sandhill crane      | <i>(Grus canadensis)</i>             |
| Bald eagle          | <i>(Haliaeetus leucocapillus)</i>    |
| Loggerhead shrike   | <i>(Lanius ludovicianus)</i>         |
- Mammals**
- |                         |                                 |
|-------------------------|---------------------------------|
| Prairie vole †          | <i>(Microtus ochrogaster)</i>   |
| Northern myotis †       | <i>(Myotis septentrionalis)</i> |
| Plains pocket mouse     | <i>(Perognathus flavescens)</i> |
| Eastern spotted skunk † | <i>(Spilogale putorius)</i>     |
- Reptiles**
- |                          |                                 |
|--------------------------|---------------------------------|
| Hooded turtle            | <i>(Emydoidea blandingii)</i>   |
| Western hognose snake    | <i>(Heterodon nasicus)</i>      |
| Bullsnake (gopher snake) | <i>(Pituophis melanoleucus)</i> |
- Butterflies**
- |               |                                        |
|---------------|----------------------------------------|
| Bog copper †  | <i>(Epidemia grisea michiganensis)</i> |
| Uncas skipper | <i>(Iophris unca)</i>                  |

### FORESTED WETLANDS

- HARDWOOD SWAMP FOREST**
  - Mixed Hardwood Swamp** - wet forests on organic soil; canopy any combination of paper birch (*Betula papyrifera*), red maple, trembling aspen, or black ash (*Fraxinus nigra*).
- 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.
- FLOODPLAIN FOREST**
  - Floodplain Forest** - forests on seasonally flooded river bottoms; canopy generally dominated by silver maple (*Acer saccharinum*) with bur oak and green ash.

### SHRUB WETLANDS

- SHRUB SWAMP**
  - Alder Swamp** - wet shrub community on organic soil; dominated by speckled alder (*Alnus incana* ssp. *rigosa*).
  - 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 stolonifera*).

### 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*), and sedges (*Carex* spp.); characteristic species include mountain-mint (*Pycnanthemum virginianum*), great blazing star (*Liatris pycnostachya*), yellow stargrass (*Hypoxis hirsuta*), and Culver's root (*Veronicastrum virginicum*).
  - Wet Meadow** - open wetland on mineral or organic soil in shallow basins or at lake or stream margins; dominated by tussock-forming sedges (*Carex stricta*, *Carex lasiocarpa*) or the coarse sedge (*Carex lasiocarpa*); commonly with blue-joint grass (*Calamagrostis canadensis*), joe-pye weed (*Eupatorium maculatum*), giant goldenrod (*Solidago gigantea*), meadow-sweet (*Spiraea alba*), and slender willow (*Salix gracilis*).
  - Rich Fen** - open wetland on organic soil or on floating mat at lake margins; dominated by wire-grass (*Carex lasiocarpa*) with marsh fern (*Thelypteris palustris*), three-way sedge (*Chalcidium arundinaceum*), rushes (*Juncus* spp.), and marsh cinquefoil (*Potentilla palustris*); little or no sphagnum moss (*Sphagnum* spp.); influenced by water that is more mineral-rich than in poor fens.
  - Poor Fen** - shallow peatlands with more or less continuous layer of sphagnum moss; dominant vascular plants are wire-grass (*Carex lasiocarpa*) and leatherleaf (*Chamaedaphne calyculata*).
- EMERGENT MARSH**
  - Cattail Marsh** - open wetland of floating or rooted vegetation mats in lakes and ponds; dominated by broad-leaved cattail (*Typha latifolia*).
  - Mixed Emergent Marsh** - open wetland typically composed of vegetation rooted in mineral substrate at the edges of lakes and rivers; dominant species often are arrow-leaf (*Sagittaria latifolia*) and bulrushes (*Scirpus* spp.).

### MISCELLANEOUS FEATURES<sup>3</sup>

- Minor Civil Divisions
- Managed Area Boundaries
- Public Ownership within managed areas
- Private Ownership within managed areas
- Primary Roads
- Secondary Roads
- Railroads
- Streams
- Lakes and Rivers

### FOOTNOTES

- Natural communities were interpreted from 145,000 color infrared photography taken in May, 1980 and May, 1982 (National Aeronautics and Space Administration).
- Data are available from the Minnesota Natural Heritage Information System, Department of Natural Resources, St. Paul, Minnesota. Phone (612) 296-3344.
- Minnesota County Biological Survey, 1994. A guide to Minnesota's native habitats: the Anoka Sand Plain and St. Croix River Valley. Minnesota Department of Natural Resources, St. Paul, Minnesota.
- Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: a key to natural communities. Unpublished version 1.5. Minnesota Department of Natural Resources, St. Paul, Minnesota.
- 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.
- 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 Bureau of Engineering and other sources at the Department of Natural Resources. 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 communities are shown. Every effort was made to obtain current versions of these data, however, errors may exist on this map.