Vegetation of Voyageurs National Park
Minnesota

Vegetation Map Units by Ecological Groups

Bogs

Treed Bogs
Black Spruce Bog

Shrub Bogs
Black Spruce/Leatherleaf Semi-treed Bog
Leatherleaf Bog
Beaver Basin Break-up Mosaic

Northern Shrub and Graminoid Fens

Shrub Fens
Bog Birch-Willow Shore Fen
Leatherleaf-Sweet Gale Shore Fen
Tamarack Scrub Poor Fen

Graminoid Fens
Northern Sedge Poor Fen

Wet Meadows

Wet Meadows
Canada Bluejoint Eastern Meadow
Wet Meadow/Fen Mosaic/Complex

Marshes

Emergent Marshes
Eastern Reed Marsh
Freshwater Bulrush Marsh
Midwest Cattail Deep Marsh
Wild Rice Marsh
Deep Marsh Mosaic/Complex

Rooted and Floating Aquatic Marshes
Midwest Pondweed Submerged Aquatic Wetland
Northern Water Lily Aquatic Wetland

Northern Conifer and Hardwood Swamps

Rich Hardwood Swamps
Black Ash-Mixed Hardwood Swamp
White Cedar-Black Ash Swamp

Rich Conifer Swamps
Black Spruce/Alder Rich Swamp
Northern Tamarack Rich Swamp
White Cedar-(Mixed Conifer)/Alder Swamp (rich soil phase)
White Cedar-(Mixed Conifer)/Alder Swamp (peatland phase)

Poor Conifer Swamps
Black Spruce/Labrador Tea Poor Swamp (evergreen phase)
Black Spruce/Labrador Tea Poor Swamp (mixed phase)

Northern Shrub Swamps

Northern Shrub Swamps
Dogwood-Pussy Willow Swamp
Speckled Alder Swamp

Rock Barrens

Treed Rock Barrens
Boreal Pine Rocky Woodland (jack pine phase)
Boreal Pine Rocky Woodland (mixed pine phase)
Jack Pine/Lichen Rocky Barrens
Mixed Aspen Rocky Woodland
Northern Pin Oak-Bur Oak-(Jack Pine) Rocky Woodland (deciduous phase)
Northern Pin Oak-Bur Oak-(Jack Pine) Rocky Woodland (jack pine-oak phase)
Northern Pin Oak-Bur Oak-(Jack Pine) Rocky Woodland (mixed pine-oak phase)

Shrub and Herb Rock Barrens
Boreal Hazelnut-Serviceberry Rocky Shrubland
Poverty Grass Granite Barrens

Northern White Cedar-(Hardwood) Forests

Northern White Cedar-(Hardwood) Forests
White Cedar-Boreal Conifer Mesic Forest
White Cedar-Yellow Birch Forest

Northern Pine-(Hardwood) Forests

Northern Pine-(Hardwood) Forests
Jack Pine-Aspen Forest Mosaic
Jack Pine/Balsam Fir Forest
White Pine-Red Pine-Quaking Aspen-Paper Birch Forest
Red Pine/Blueberry Dry Forest
White Pine/Mountain Maple Mesic Forest

Northern Spruce-Fir-(Hardwood) Forests

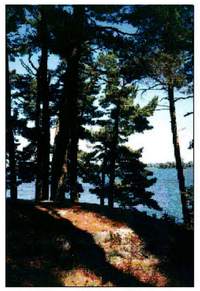
Northern Spruce-Fir-(Hardwood) Forests
Spruce-Fir-Aspen Forest
Black Spruce/Feathermoss Forest
Spruce-Fir/Mountain Maple Forest

Boreal Hardwood Forests

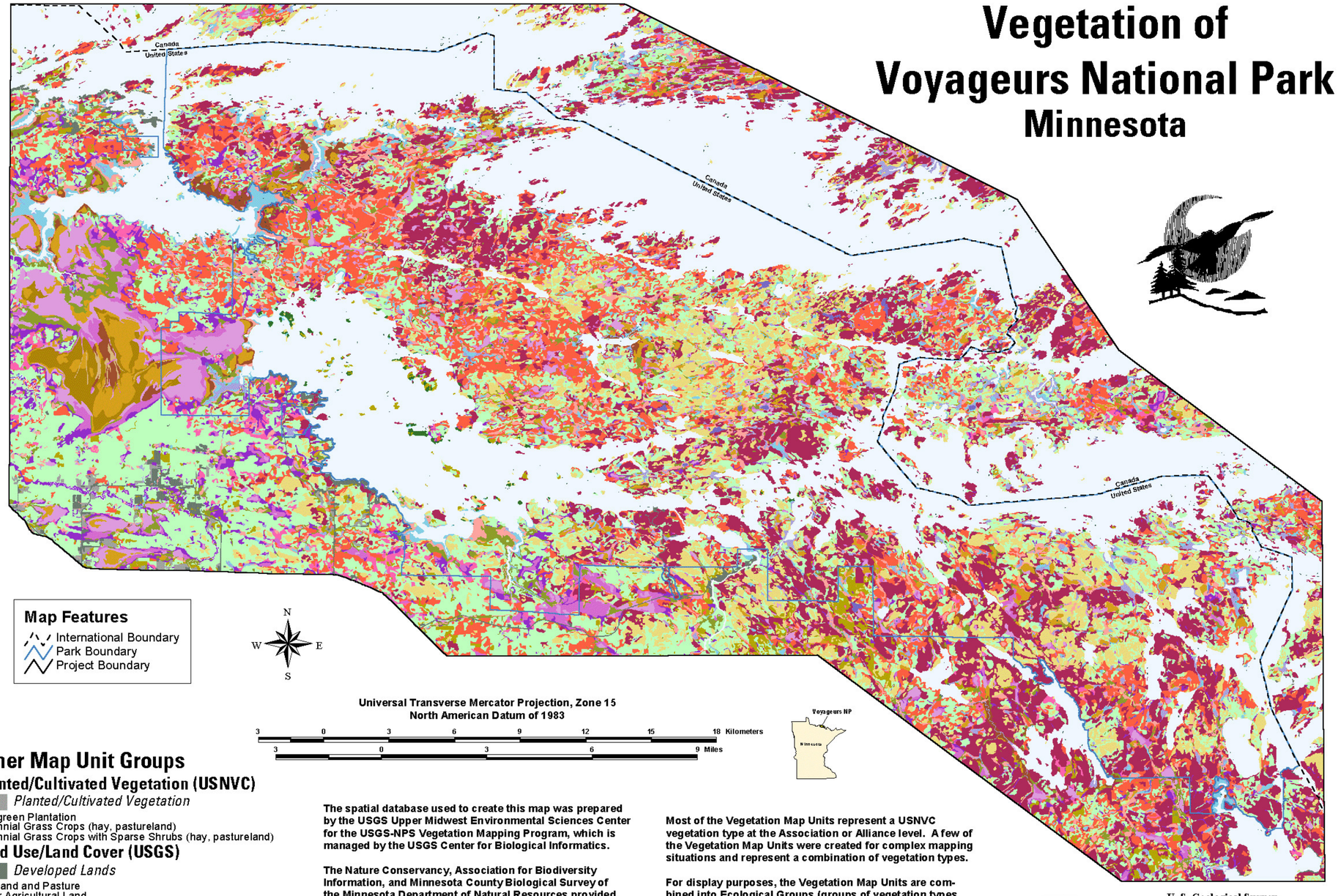
Boreal Hardwood Forests
Quaking Aspen-Paper Birch Forest
Paper Birch/Fir Forest
Trembling Aspen-Balsam Poplar Lowland Forest

Northern Hardwood Forests

Northern Hardwood Forests
Northern Bur Oak Mesic Forest



Red Pine at Blind Ash Bay



Map Features
- International Boundary
- Park Boundary
- Project Boundary

N
W E
S

Universal Transverse Mercator Projection, Zone 15
North American Datum of 1983

3 0 3 6 9 12 15 18 Kilometers
3 0 3 6 9 Miles

Other Map Unit Groups

Planted/Cultivated Vegetation (USNVC)

Planted/Cultivated Vegetation
Evergreen Plantation
Perennial Grass Crops (hay, pastureland)
Perennial Grass Crops with Sparse Shrubs (hay, pastureland)

Land Use/Land Cover (USGS)

Developed Lands
Cropland and Pasture
Other Agricultural Land
Strip Mines, Quarries, and Gravel Pits
Commercial and Services
Residential
Transportation, Communications, and Utilities

Lakes and Streams
Lakes (> 16 ha)
Streams and Canals

Small Islands and Natural Ponds

Small Islands (.1 - .5 hectares)
Small Island with Grass
Small Island with Shrubs
Small Island with Trees
Small Island with Rock

Small Natural Ponds (< 10% vegetated)
Water-Beaver Pond
Water-Natural Pond (< 16 ha)

The spatial database used to create this map was prepared by the USGS Upper Midwest Environmental Sciences Center for the USGS-NPS Vegetation Mapping Program, which is managed by the USGS Center for Biological Informatics.

The Nature Conservancy, Association for Biodiversity Information, and Minnesota County Biological Survey of the Minnesota Department of Natural Resources provided vegetation field sampling, analysis, and classification development based on the U.S. National Vegetation Classification (USNVC).

The spatial database was produced by the stereo interpretation of fall 1995 and 1996 color infrared aerial photographs (1:15,840-scale). Prior to delineating polygons, field reconnaissance was performed to learn photographic appearances of vegetation types and to link map units to vegetation communities. The interpreted data were transferred to base maps plotted from USGS 3.75-minute digital orthophoto quadrangles (DOQ's) or, for portions of Canada not covered by DOQ's, to Ontario Basic Mapping Series topographic maps (1:20,000-scale). The referenced data were digitized and a database for geographic information systems was generated. Standard minimum mapping unit is .5 hectares.

Most of the Vegetation Map Units represent a USNVC vegetation type at the Association or Alliance level. A few of the Vegetation Map Units were created for complex mapping situations and represent a combination of vegetation types.

For display purposes, the Vegetation Map Units are combined into Ecological Groups (groups of vegetation types that share similar ecological processes). The Other Map Units are combined into general catagories. The spatial database offers finer details of the map units (relationship to vegetation communities, physiognomic features of vegetation, crosswalk to other classification systems).

The spatial database reflects conditions that existed at the time of aerial photograph collection. A margin of error is inherent with interpreting aerial photographs. Based on results of a thematic accuracy assessment, the estimated overall accuracy for the Vegetation Map Units is 82.4%. Those using the database should determine for themselves the fitness of the data prior to use.

The spatial database, along with supporting information, is located on the Internet at http://biology.usgs.gov/npsveg.

Minnesota County Biological Survey

The Nature Conservancy

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USGS-NPS Vegetation Mapping Program

USGS science for a changing world

CBI Center for Biological Informatics