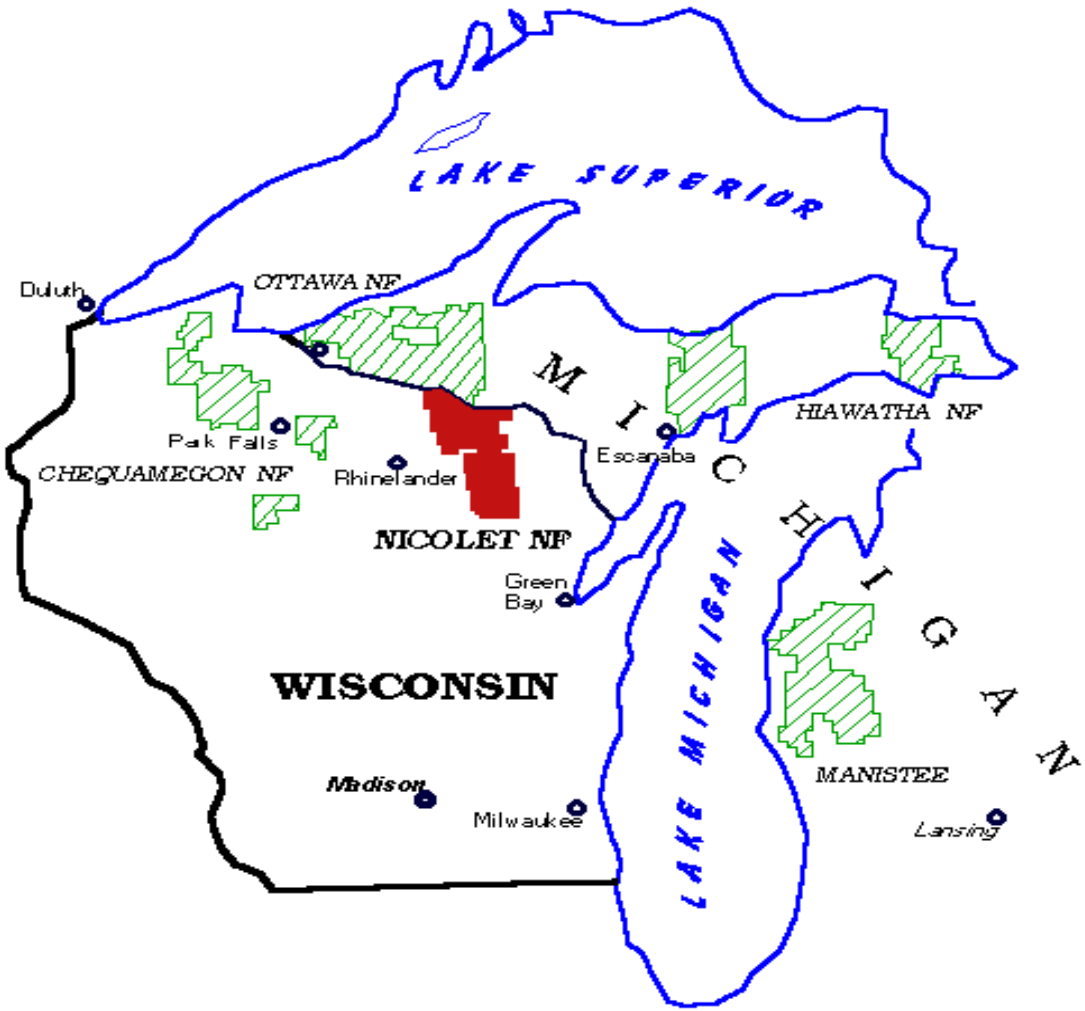
Chequamegon-Nicolet National Forest

Terrestrial Ecological Unit Inventory

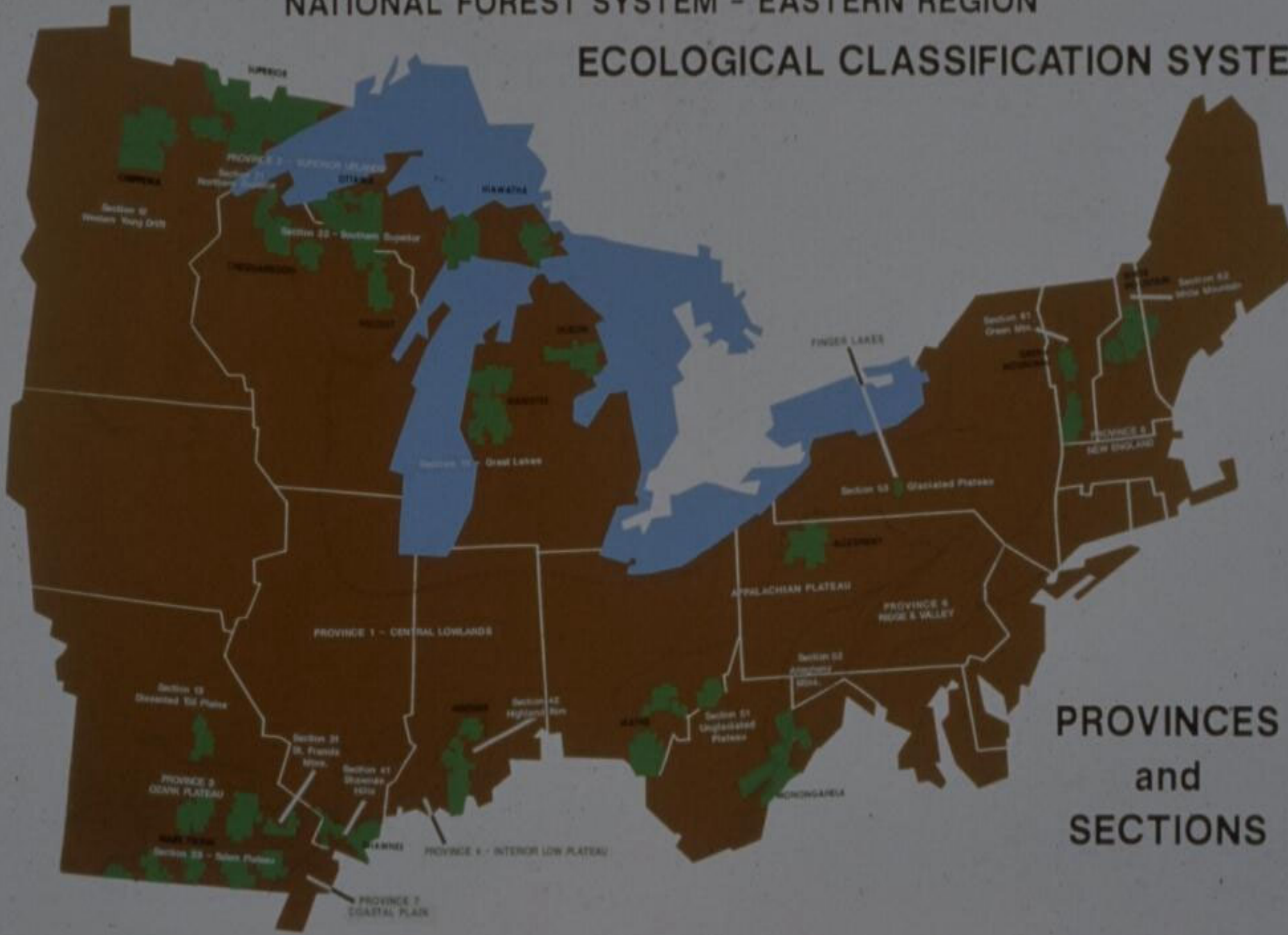
Nicolet National Forest



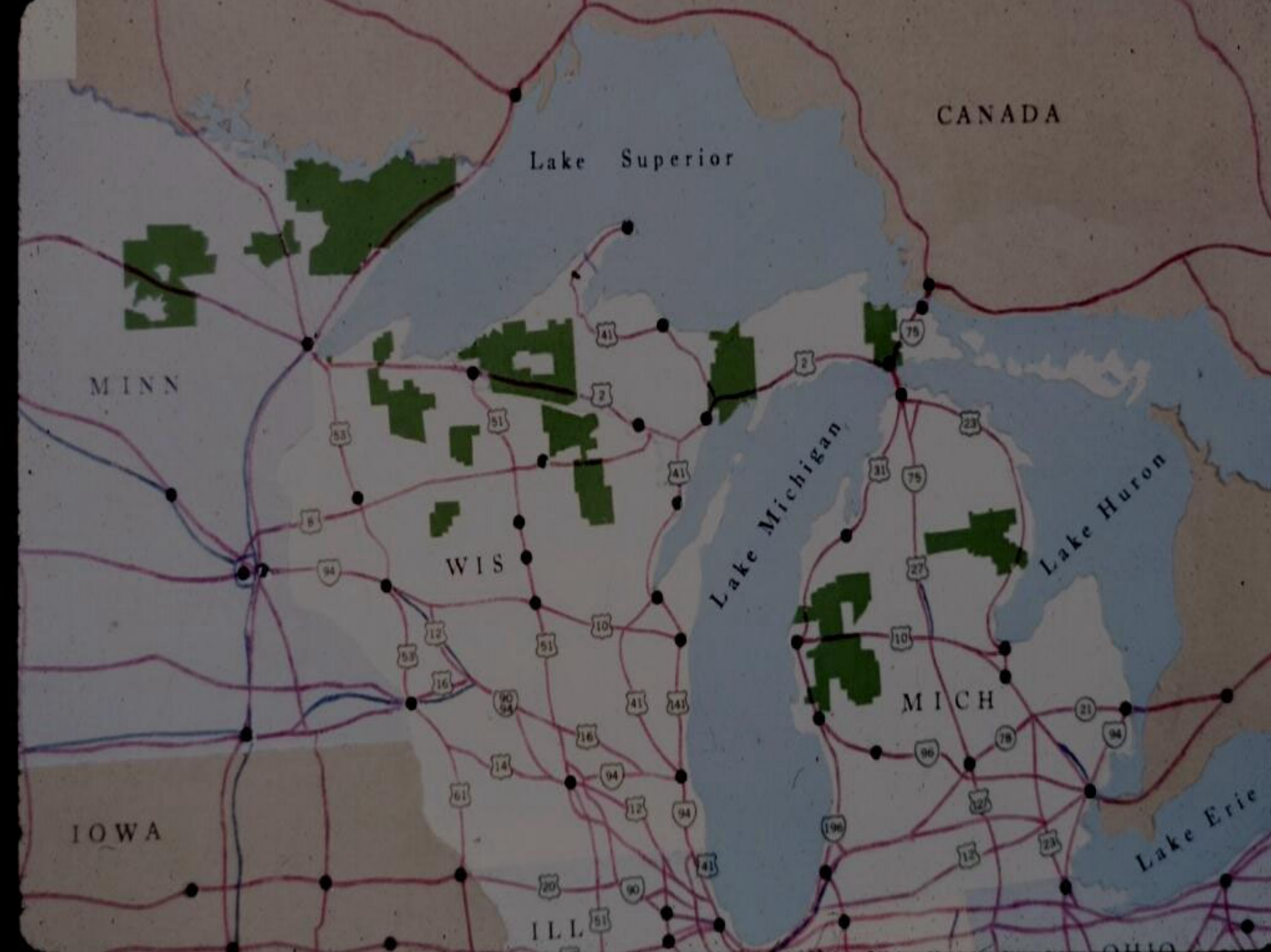
Chequamegón-Nicolet
National Forest

NATIONAL FOREST SYSTEM - EASTERN REGION

ECOLOGICAL CLASSIFICATION SYSTE



PROVINCES and SECTIONS


CANADA
Lake Superior
MINN
WIS
Lake Michigan
Lake Huron
MICH
Lake Erie
IOWA
ILL
41
2
75
51
53
8
94
10
12
16
90
14
61
20
23
27
31
21
96
78
127
196
13


Douglas
Bayfield
Ashland
Iron
Vilas
Florence
Burnett
Washburn
Sawyer
Price
Oneida
Forest
Marinette
Polk
Barron
Rusk
Taylor
Lincoln
Langlade
Oconto
St. Croix
Dunn
Chippewa
Menominee
Marathon
Shawano
Door
Pierce
Eau Claire
Clark
Kewaunee
Pepin
Buffalo
Wood
Portage
Waupaca
Outagamie
Brown
Jackson
Trempealeau
Waushara
Winnebago
Manitowoc
Calumet
Adams
Monroe
Juneau
La Crosse
Marquette
Green Lake
Fond du Lac
Sheboygan
Vernon
Richland
Sauk
Columbia
Dodge
Ozaukee
Washington
Crawford

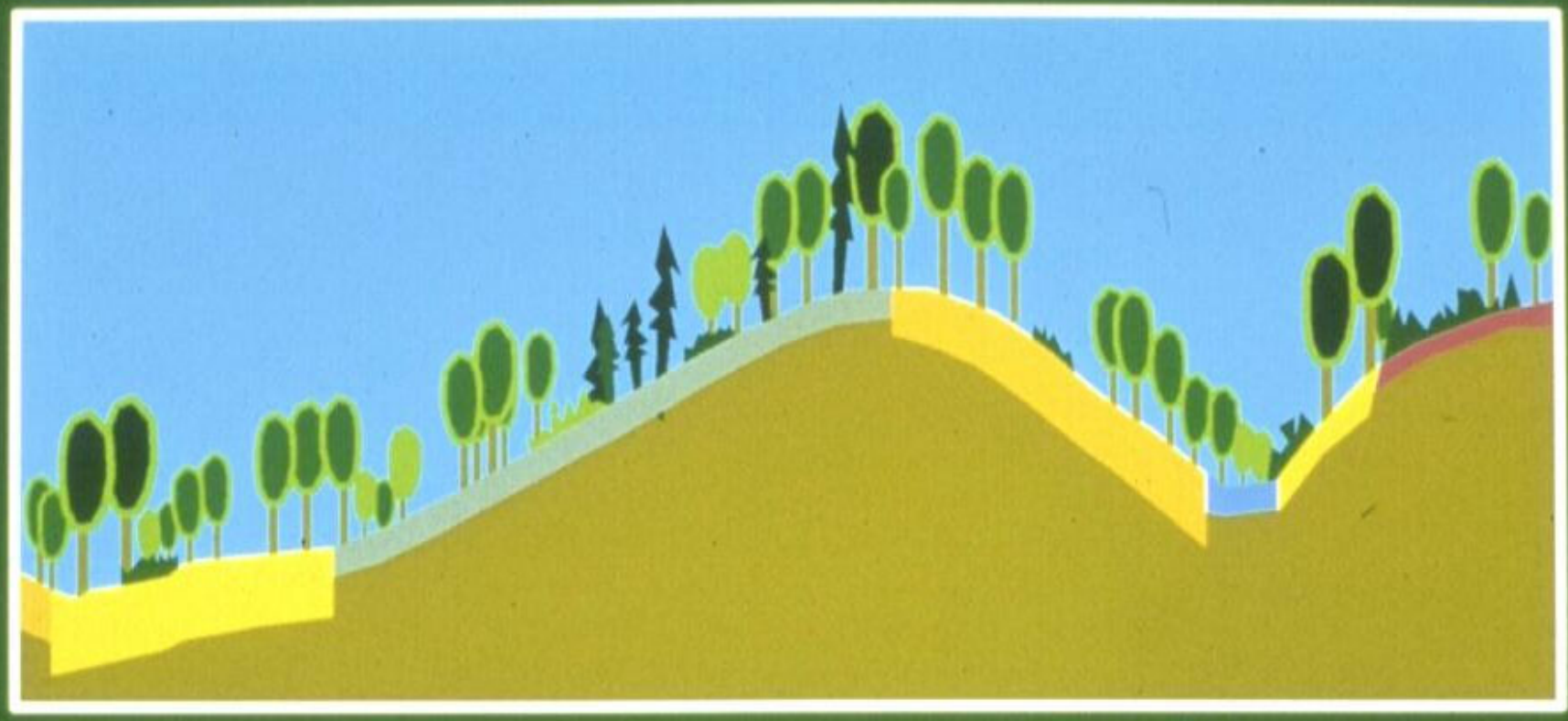

CHEQUAMEGON
National Forest
CAMPGROUND
CHIPPEWA →
U.S. DEPARTMENT OF AGRICULTURE


RAINBOW
LAKE
WILDERNESS
CHEQUAMEGON
National Forest
FOREST SERVICE
U.S.

REGULATION 6

SECRETARY OF AGRICULTURE'S REGULATIONS

"National forest are ecosystems, and their management for goods and services requires an awareness of the interrelationship among plants, animals, soil, water, air and other environmental factors within the ecosystems."



Ecological Classification System

An integrated system which delineates finite areas of land having ecological integrity and significance for management. It is a hierarchical system which integrates geology, landform, soils and vegetation.

National hierarchy of ecological units

Planning and analysis scale	*Ecological Units*	*Purpose, objectives, and general use*
Ecoregion Global Continental Regional	Domain Division Province	Broad applicability for modeling and sampling. Strategic planning and assessment. International planning.
Subregion	Section Subsection	Strategic, multiforest, statewide, and multiagency analysis and assessment.
Landscape	Landtype association	Forest or areawide planning, and watershed analysis.
Land unit	Landtype Landtype phase	Project and management area planning and analysis.
Hierarchy can be expanded by user to smaller geographical areas and more detailed ecological units if needed.		Very detailed project planning.

Table 2. Principal map unit design criteria of ecological units.

Ecological unit	*Principal map unit design criteria*
Domain	Broad climatic zones or groups (e.g., dry, humid, tropical)
Division	Regional climatic types (Koppen 1931, Trewatha 1968) Vegetational affinities (e.g., prairie or forest) Soil order
Province	Dominant potential natural vegetation (Kuchler 1964) Highlands or mountains with complex vertical climate-vegetation-soil zonation
Section	Geomorphic province, geologic age, stratigaphy, lithology Regional climatic data Phases of soil orders, suborders, or great groups Potential natural vegetation Potential natural communities (PNC) (FSH 2090)
Subsection	Geomorphic process, surficial geology, lithology Phases of soil orders, suborders, or great groups Subregional climatic data PNC—formation or series


BASIS OF MAP UNITS
DEVELOPMENT OF THE MAP
EXPLANATION
FOREST SERVICE REGIONS

Landtype association	Geomorphic process, geologic formation, surficial geology, and elevation Phases of soil subgroups, families, or series Local climate PNC—series, subseries, plant associations
Landtype	Landform and topography (elevation, aspect, slope gradient, and position) Phases of soil subgroups, families, or series Rock type, geomorphic process PNC—plant associations
Landtype phase	Phases of soil subfamilies or series Landform and slope position PNC—plant associations or phases

The Ecological Approach

Integrates relevant factors about

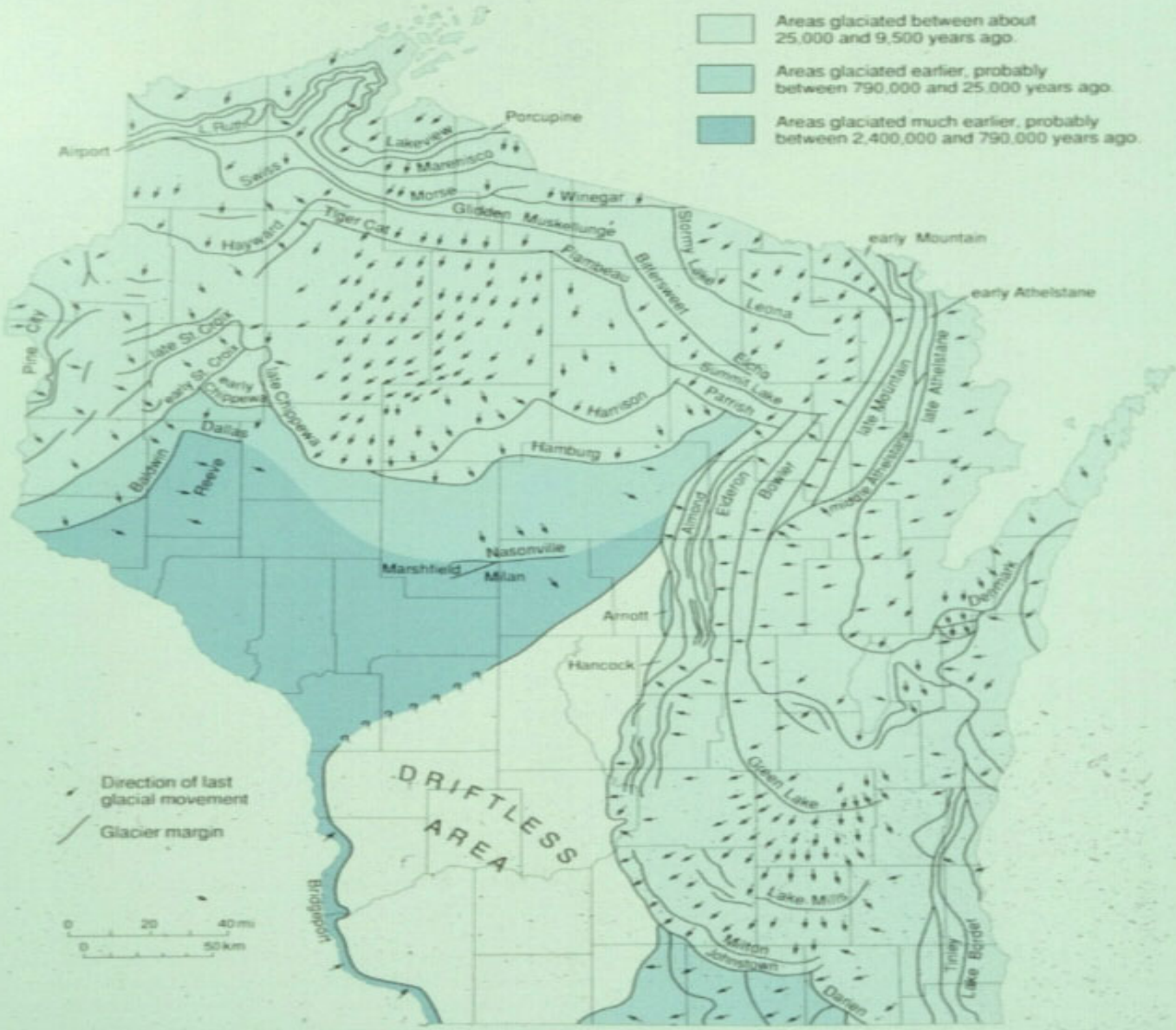
- Climate
- Landform/geomorphology
- Soil
- Vegetation
- Water

To form landscape units of homogeneous resource capability

Glaciation of Wisconsin

Lee Clayton, John W. Attig, David M. Mickelson, and Mark D. Johnson

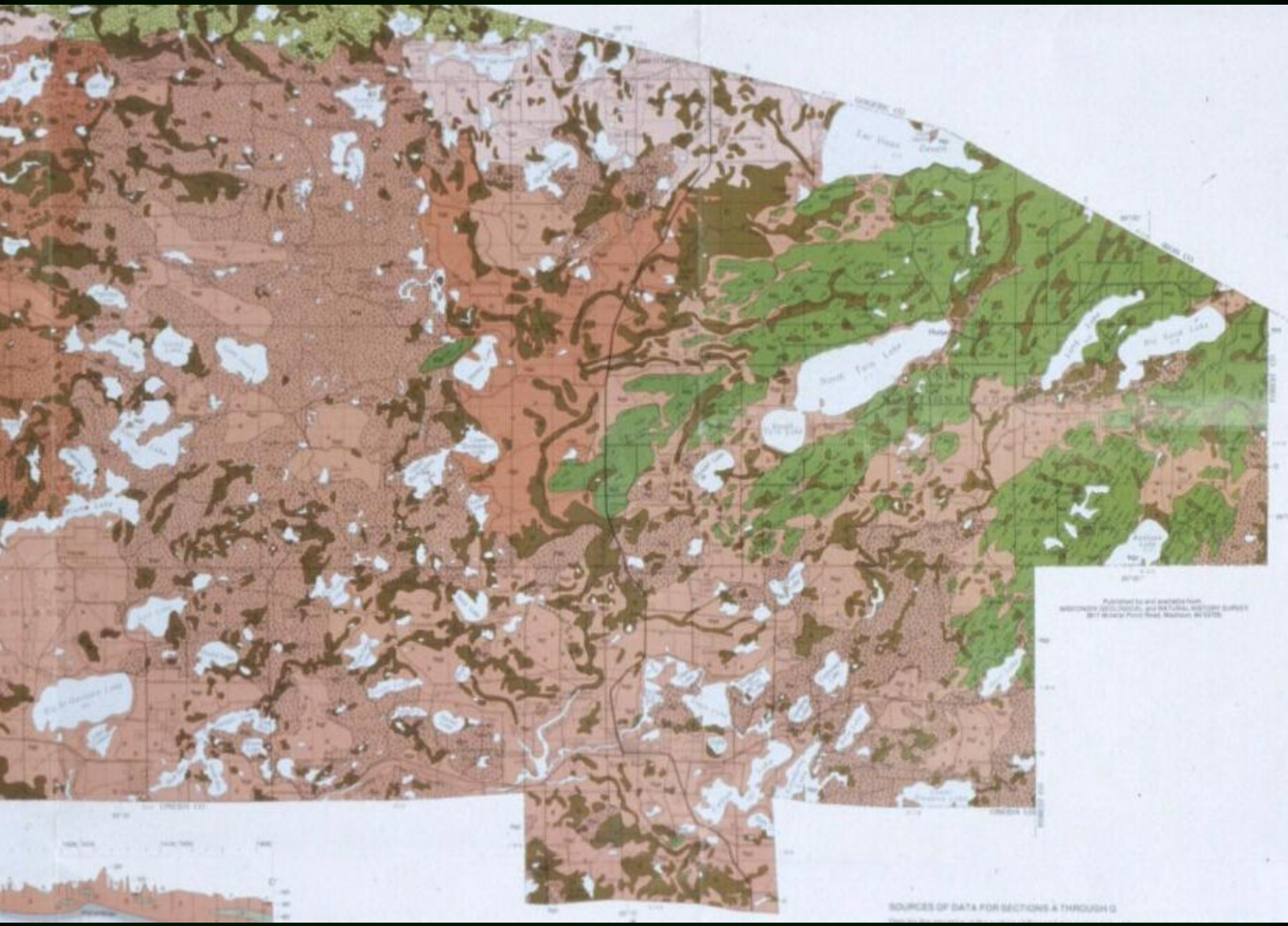
Educational Series 36
1991



Pleistocene Geology of Vilas County, Wisconsin

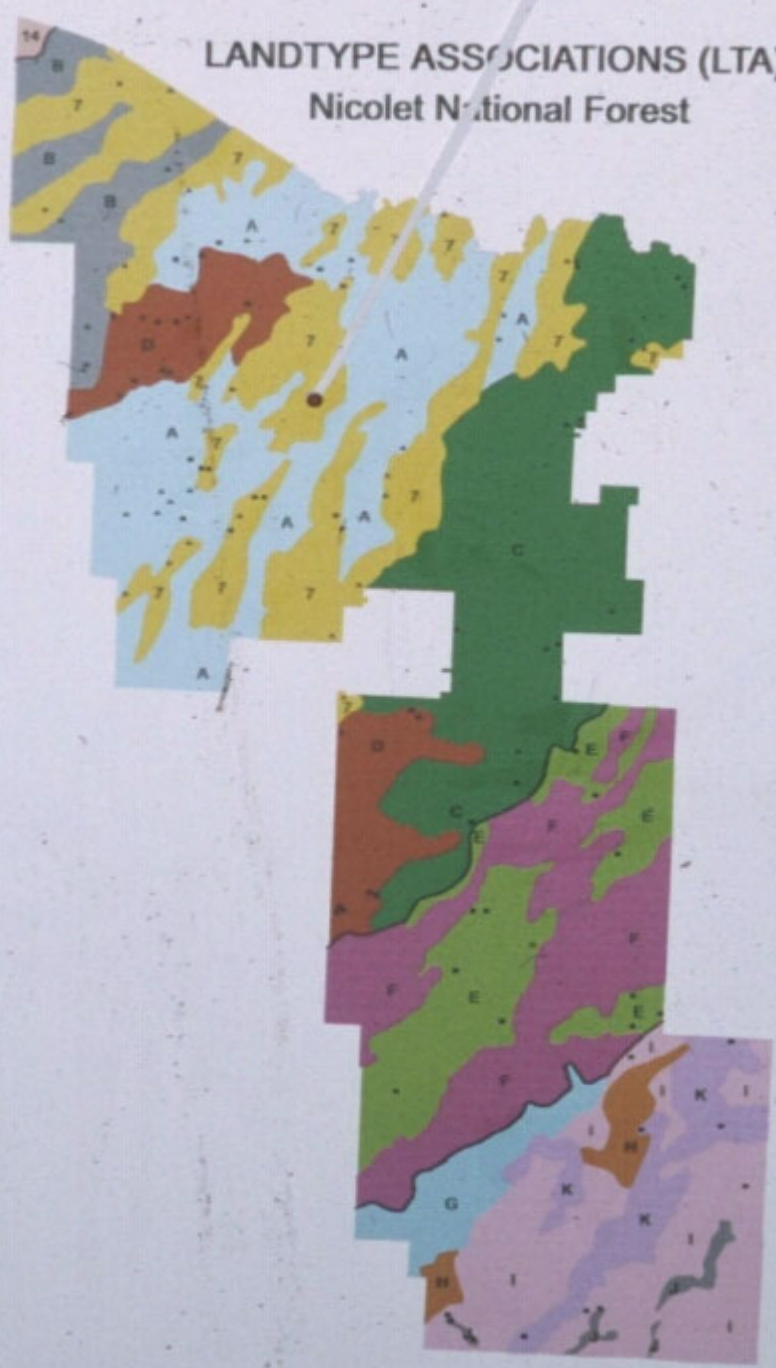
John W. Attig

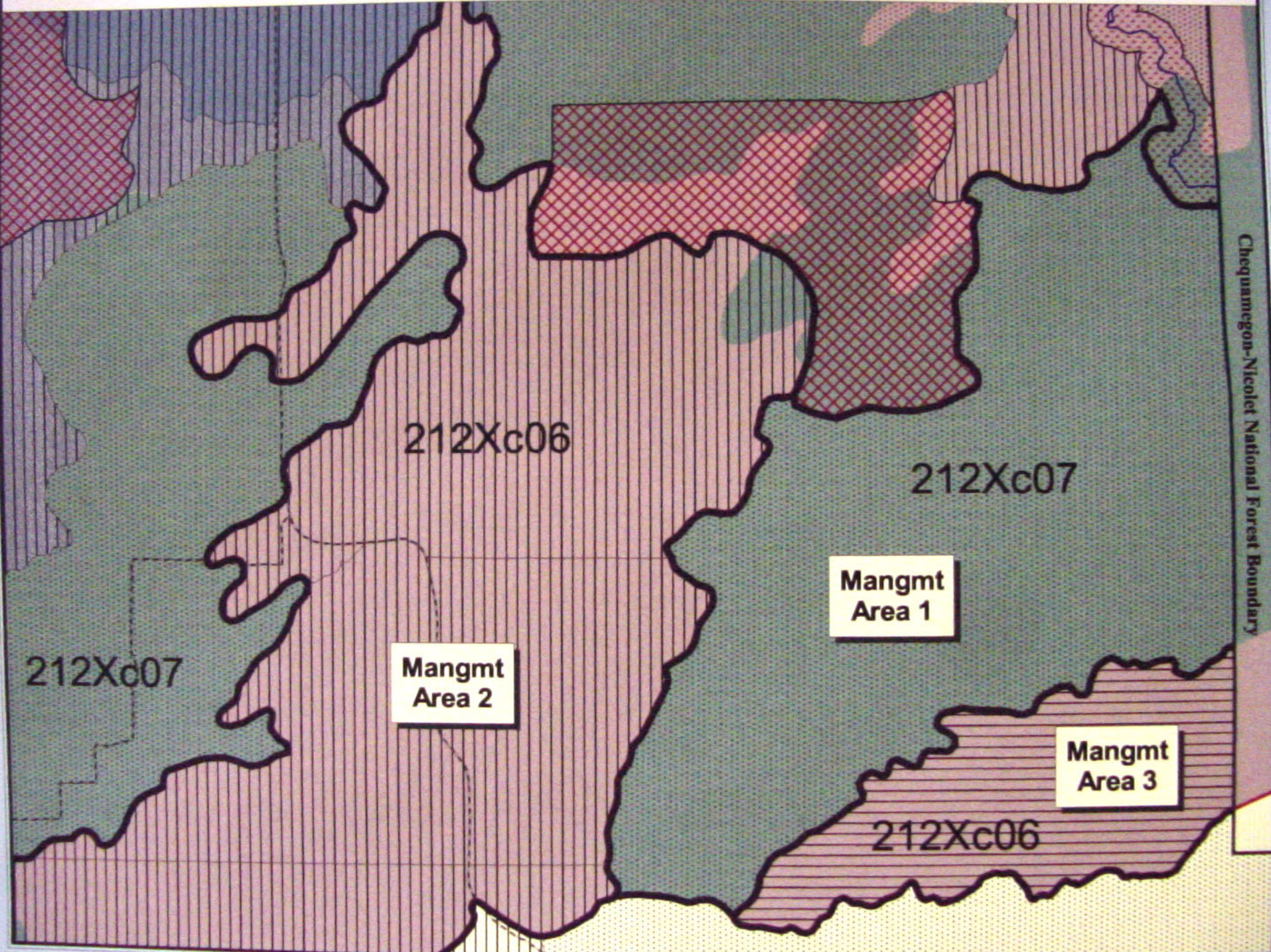
WISCONSIN GEOLOGICAL and NATURAL HISTORY SURVEY
INFORMATION CIRCULAR 50
1985


SOURCES OF DATA FOR SECTIONS A THROUGH G

LANDTYPE ASSOCIATIONS (LTA)

Nicolet National Forest




212Xc06
212Xc07
Mangmt Area 1
212Xc07
Mangmt Area 2
Mangmt Area 3
212Xc06
Chequamegon-Nicolet National Forest Boundary

The Wisconsin Forest Accord

Preamble:

The Wisconsin Forest Accord constitutes a memorandum of understanding designed to focus future communication for statewide forest resource management. The parties to this memorandum agree that the Forest Habitat Classification System and The National Hierarchy of Ecological Units can work together to achieve better resource communication.

The Forest Habitat Classification System, an ecological tool, promotes a common language for interpreting site capability based on potential natural vegetation. It has been developed for Wisconsin, and is applicable across all ownerships.

The National Hierarchy of Ecological Units divides landscapes into ecologically significant regions at multiple scales. In Wisconsin the Forest Habitat Classification System will be the vegetative component for the National Hierarchy of Ecological Units.

We the Undersigned Believe:

- Healthy, diverse forest ecosystems are desirable for the long-term welfare of the State and its citizens.
- The future health of Wisconsin Forests for present and future generations will benefit from the participation of all landowners, the talents of all land managers, and the knowledge provided by the scientific community.
- All landowners have the responsibility to promote wise stewardship of the forest for the environmental, economic, social, and cultural well-being of the people of Wisconsin.
- Forests span geographic, political, and ownership boundaries and their wise management necessitates communication and information exchange.
- Forest resource managers depend on an understanding of the relationships among lifeforms and their environments, to sustain healthy forest ecosystems at various scales.
- Adoption and use of the Forest Habitat Classification System facilitates consistent assessment of ecological potential.

AND

The use of the National Hierarchy of Ecological Units in multi-scaled ecosystem analyses improves inter-State communication and coordination in natural resource management.

AND

The two systems share objectives and complement one another.

Therefore, Be It Resolved:

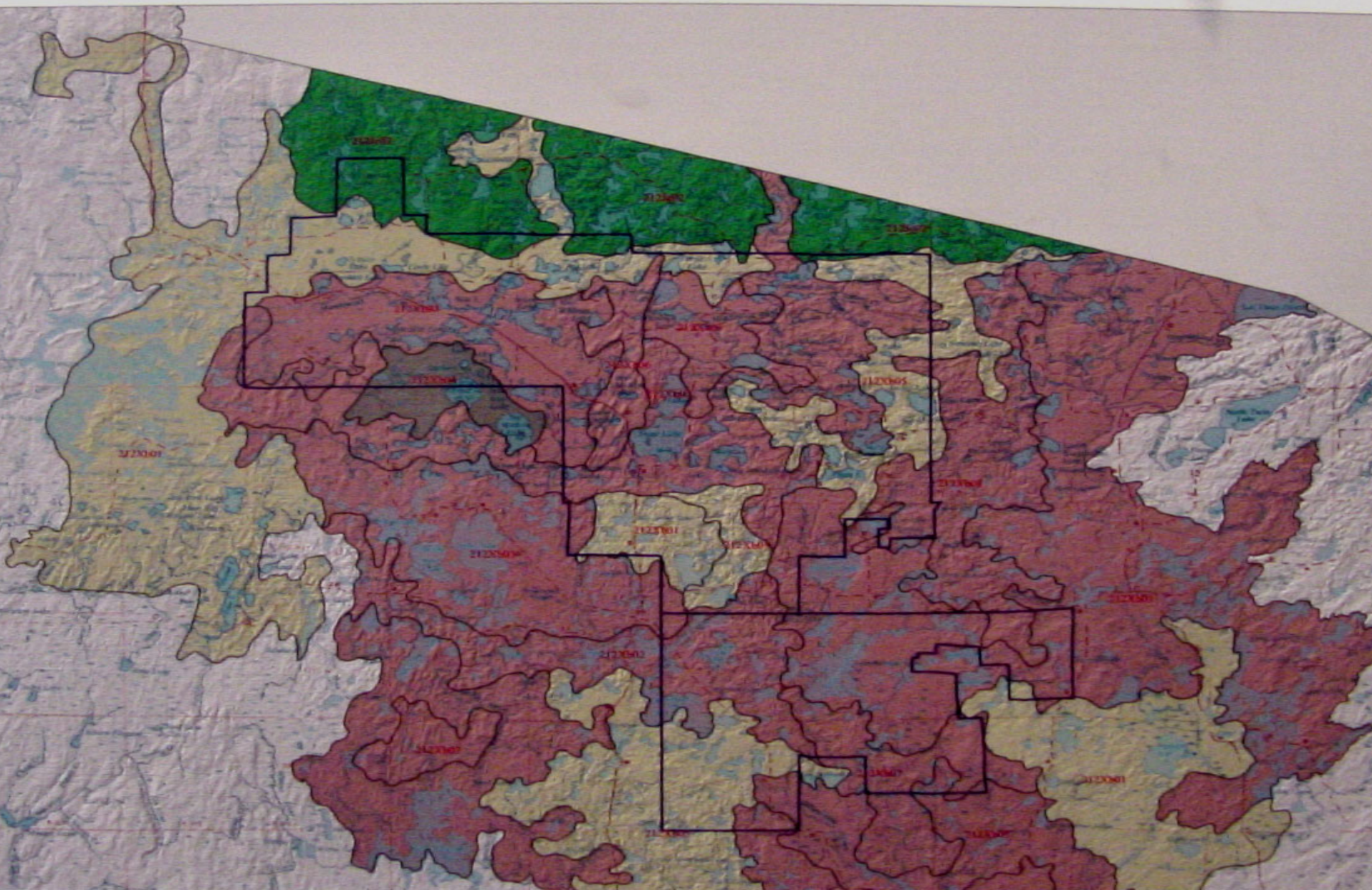
All parties mutually support the continued development, evolution, and application of these ecological classification technologies.

July 26, 1994

Landtype Associations of Wisconsin

Northern Highland - American Legion State Forest

Management Opportunities by LTA

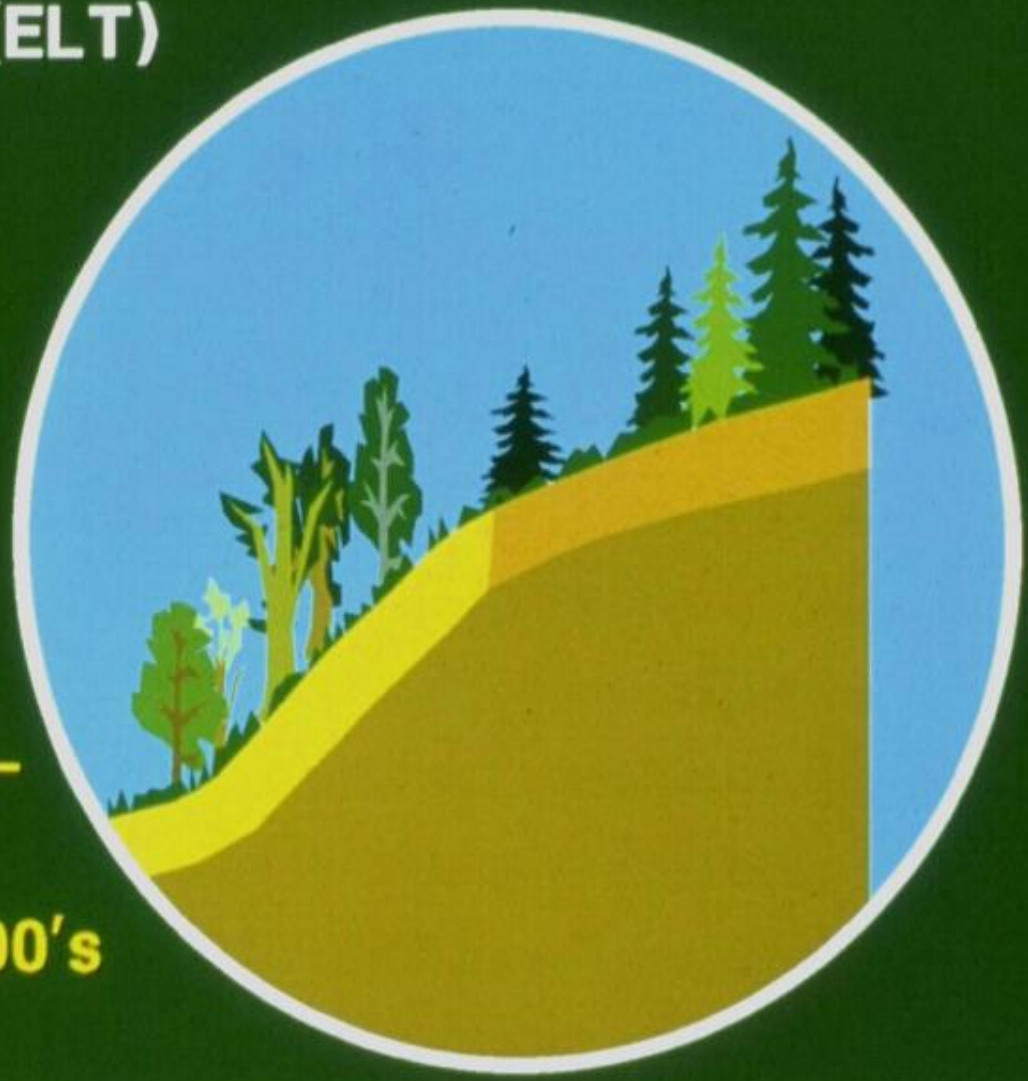


NHFEU Hierarchical Levels

- Province
- Section
- Subsection
- Landtype Association (LTA)
- Landtype (LT)
- Landtype Phase (LTP)

Ecological Land Type (ELT)

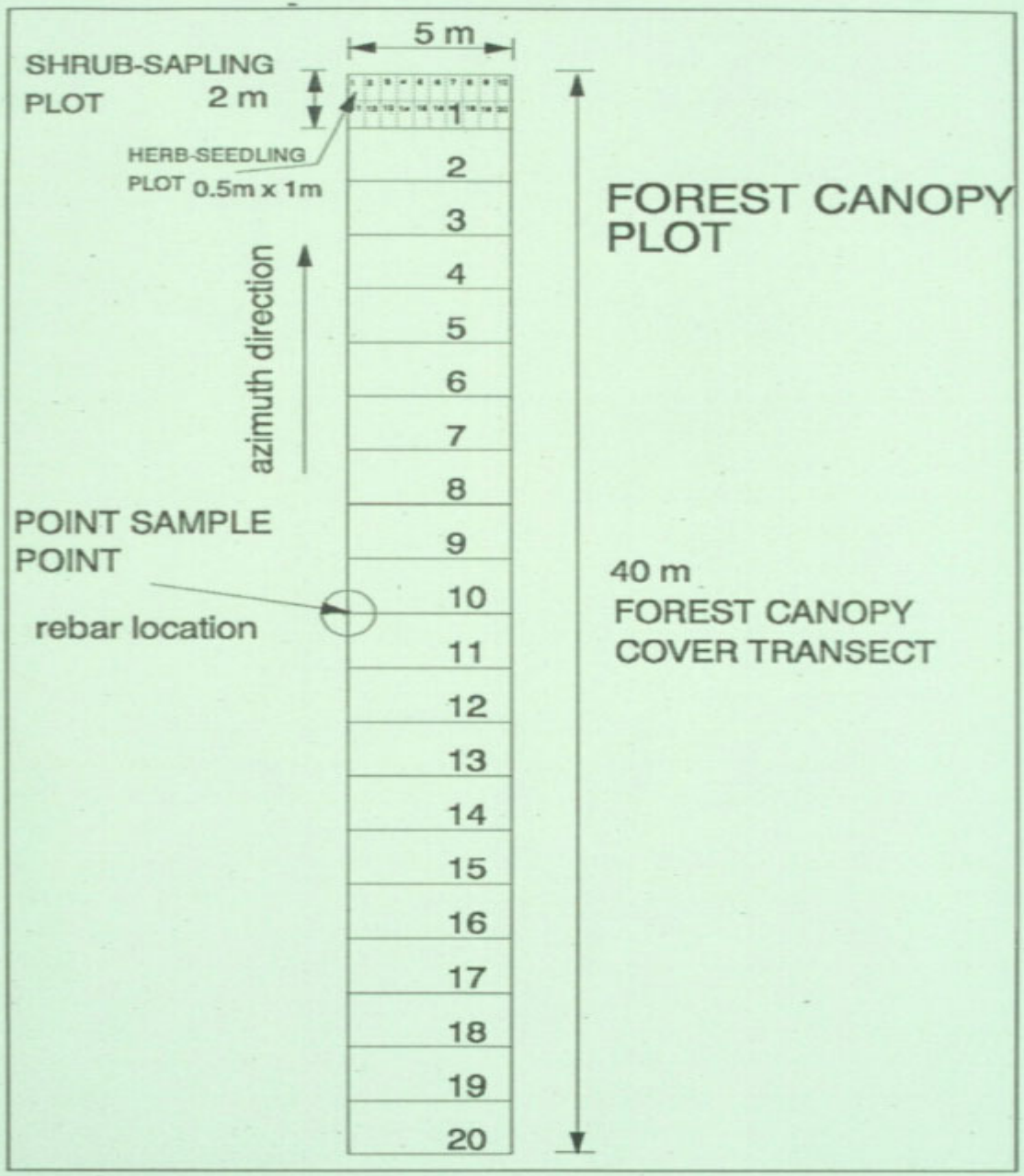
A recognizable unit of land with similar landform, soil and potential natural vegetation and having ecological similarities from which resource capabilities can be predicted. Areas range in size from 10's to 100's of acres.



Ecological Land Type Phase (ELTP)

Subdivision of an ELT, used for more site-specific identification of land capacity. Areas range from 1's to 10's of acres.

FIELD PLOT LAYOUT AND NUMBERING



Forest Habitat Types Of Northern Wisconsin

By: John Kotar, Joe Kovach

And Craig Locey

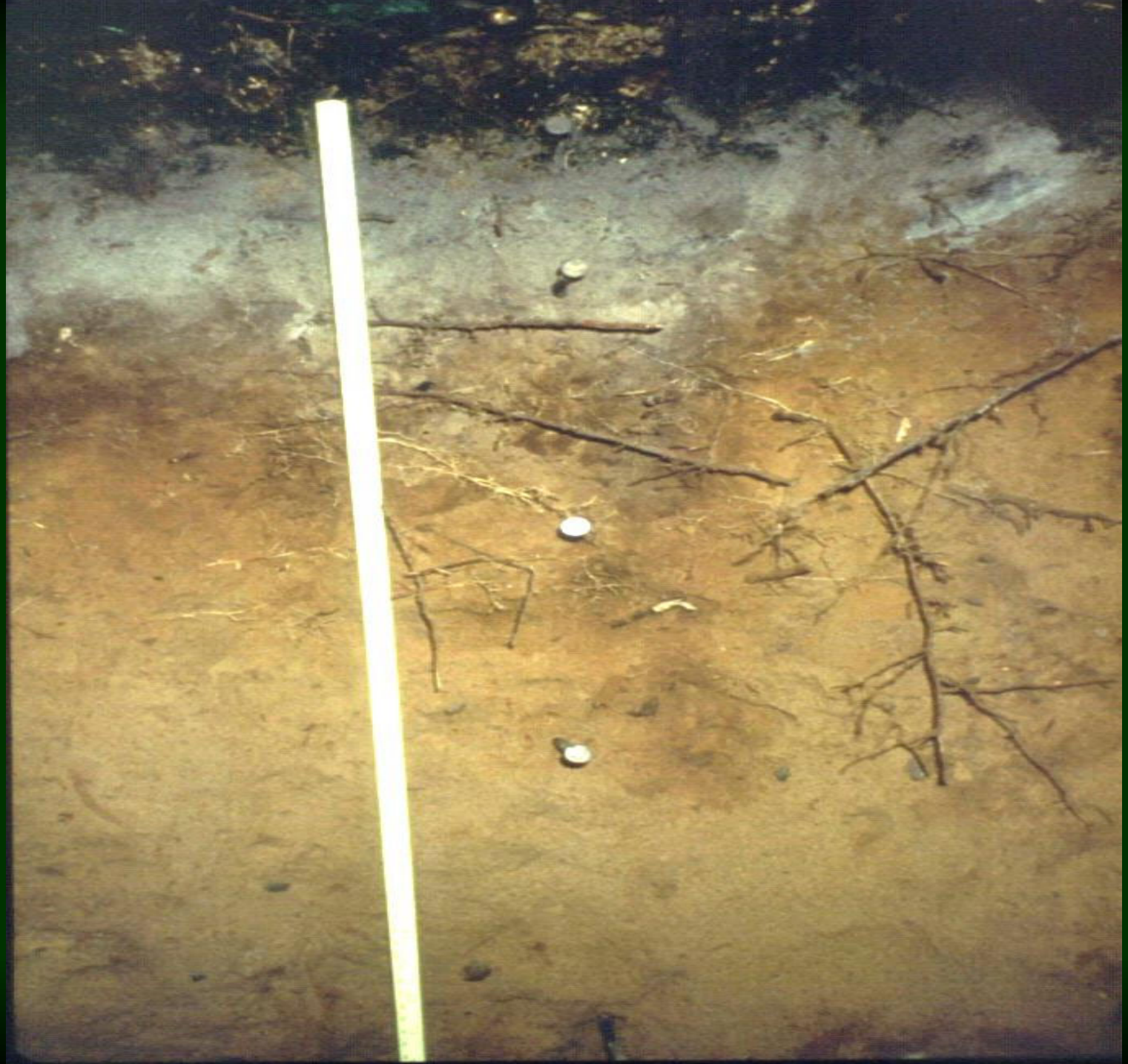
The Habitat Type Concept

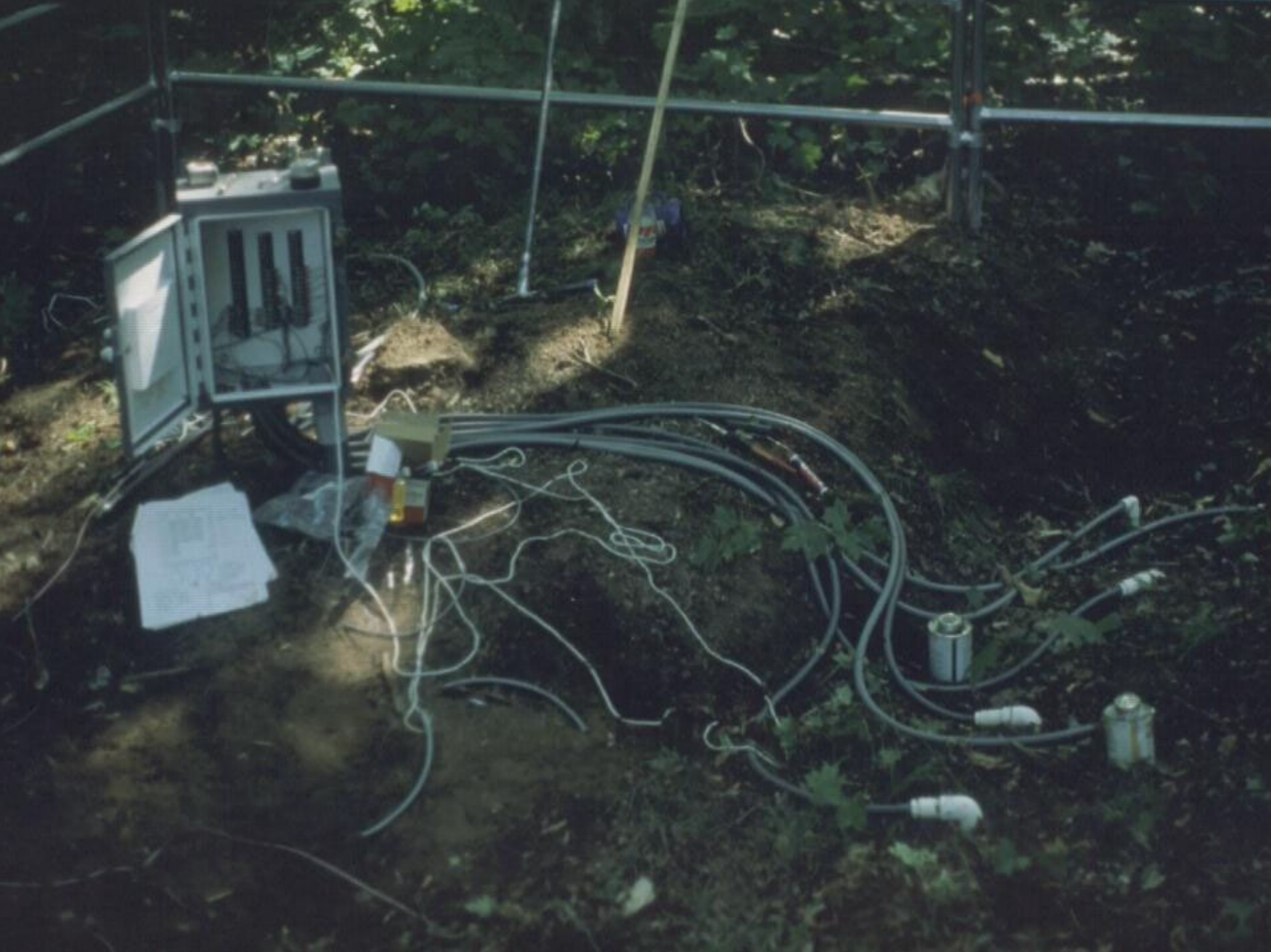
Plants normally are found in recognizable patterns or associations.

Climax plant associations are most meaningful as indicators of site.

A Habitat Type includes all the land capable of supporting a particular plant association at “climax”.

The H.T. system is a method of site classification that uses the plant community as an integrated indicator of environmental conditions.





Past Cooperative Efforts

- Cooperative Soil Survey area MOUs 1958-present (NRCS, FS, GNHS, Universities)
- Correlation of FS soil resource inventory and ecological unit mapping to NCSS phases of soil series
- Typical pedon sampling for lab analysis done on FS lands
- FS mapped private lands <320 acres in size within the Forest Boundary
- NRCS updated and correlated FS SRI mapping
- Cooperative long-term monitoring on FS lands

Studies and Publications

- Classification and Properties of Soils an Drumlin Uplands of NE Wisconsin. 1988, Kopecky, UW-Madison
- Influence of Treethrow on Soil Properties in N. Wisconsin. 1995. Meyers and McSweeney
- Effects of Pine Plantations and Adjacent Deciduous Forests on Soil Calcium. 1995. Wilson and Grigal. UMN
- Soils in a hemlock-hardwood ecosystem mosaic in the Southern Lake Superior Uplands. 1997. Beckheim
- Spatial Patterns of Soil Attributes on Drumlins in the Nicolet NF, Wisconsin. 1995. Kabrick.

Studies and Publications cont.

- Pattern and Diversity of Soils on Drumlins. Meyers, Kabrick, McSweeney.
- Characterization of Aquic Conditions in Soils of the Drumlin Uplands Within the Nicolet NF. Brewbaker
- Ecological Classification of Forested Wetlands in the Nicolet NF. Krupinski M.S. Thesis
- Quaternary Geology of Northern Oconto County, Wisconsin. 1999. Attig and Ham. WGNHS Bulletin 97
- Northern Wisconsin Dense Till Project. 1990-present. NRCS -Ron Yeck, Deb Harms.
- Soil Moisture/Soil Temperature Pilot Project. 1990-present. NRCS- Garry Schaefer

Current Cooperative Efforts

- FS lands mapped, correlated and 40% digitized, NRCS to complete digitizing the NF by 12/02
- NRCS mapping private lands within NF, FS soil scientist to map 10,000 acres in 2002
- Correlation updates and NASIS entry needed for FS ecological map units
- Continued monitoring of Soil Moisture and Soil Temperature Pilot Project sites on the Che-Nic NF

Future Projects

- Link/migrate NASIS data to Forest Service corporate database TERRA

- Implement Region 9 Soil Quality Standards

- Implement Forest Plan revision Standards and Guidelines to maintain inherent soil quality

- Monitor project impacts to the soil resource

- Incorporate findings of the Long-term Site Productivity Study to minimize project related soil disturbance effects