



MINNESOTA DEPARTMENT OF NATURAL RESOURCES

Minnesota's Native Plant Community Classification

A collaborative effort of:
The Ecological Land Classification Program, Division of Forestry
The Division of Ecological and Water Resources

The classification gives us a common language



"FDc23"

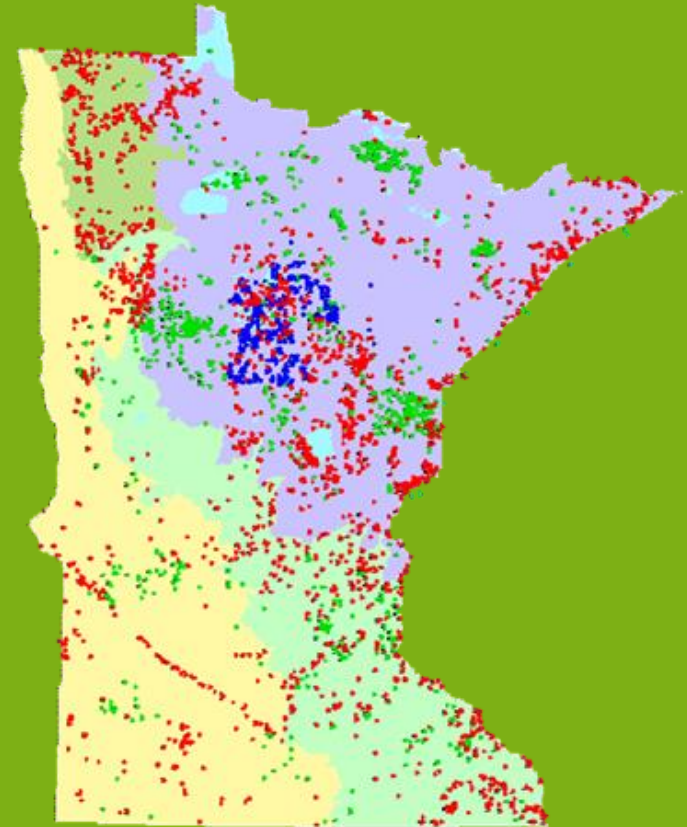
Minnesota Native Plant Communities



- A group of native plants that interact with each other and the surrounding environment in ways not greatly altered by humans or by introduced plant or animal species.
- Similar plant associations will appear in places that have similar ecological characteristics.
- Classified by vegetation, hydrology, landforms, soils, and natural disturbance regimes

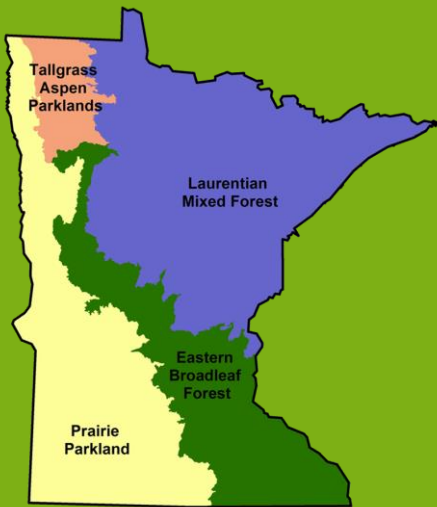
Minnesota's Native Plant Community Classification

- Based on 5,200 vegetation plots and extensive analyses
- Goal: sample the full range of environmental conditions that affect the composition, structure, and function of vegetation.
- Took 10 years to develop
- Still must be considered a working theory about how vegetation and the environment interact

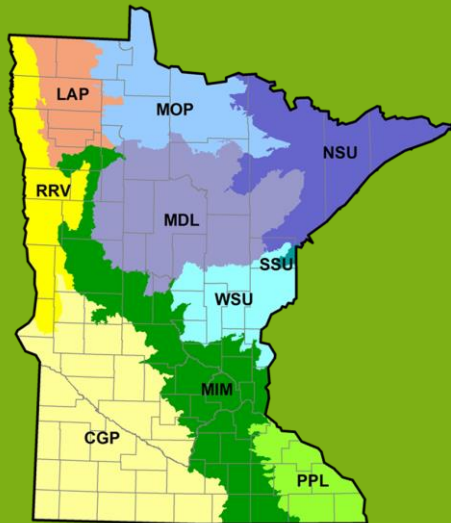


Ecological Classification System (ECS)

- Hierarchical system that describes & maps progressively smaller areas of land of increasingly uniform ecological characteristics
- Climate, geology, topography, soils, hydrology, vegetation
- 4 Provinces



10 Sections



26 Subsections



Native Plant Community Classification

Based

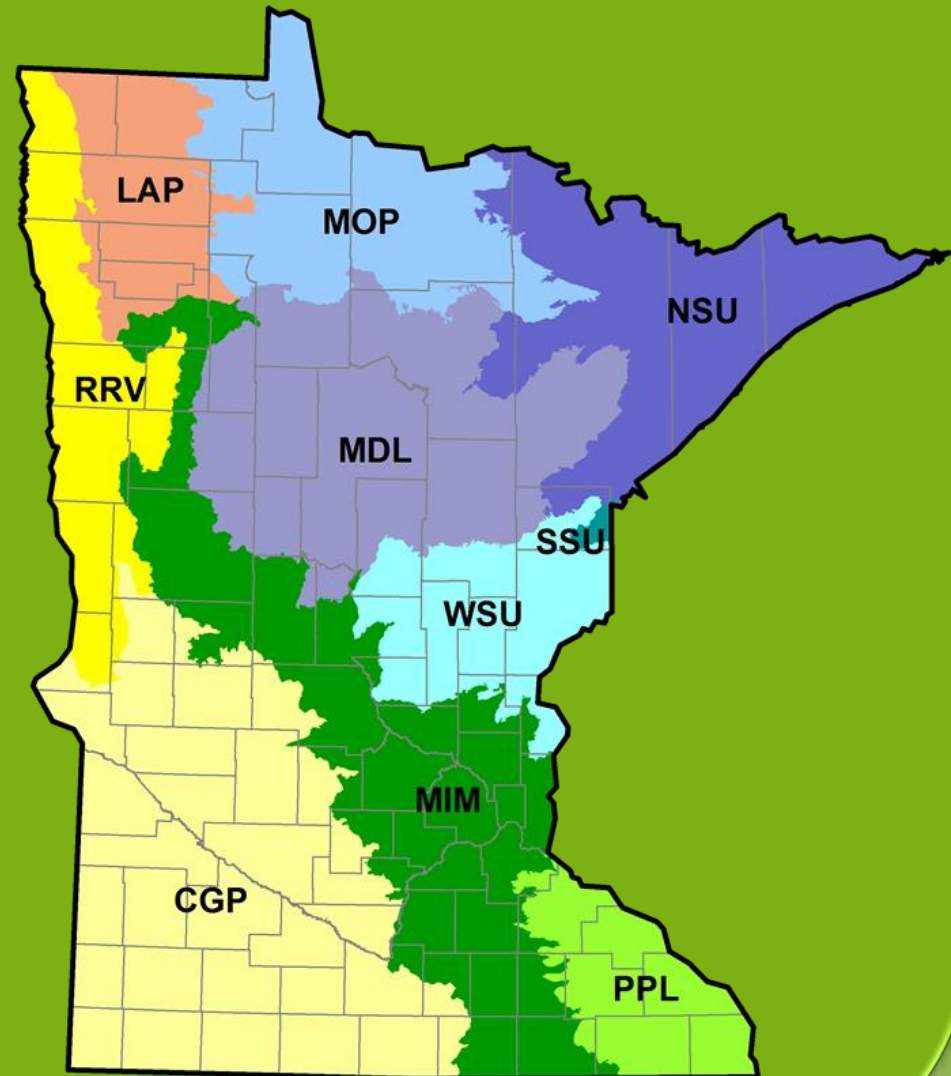
on the Ecological
Classification System

Begins

at the Section Level
of ECS

Also hierarchical

Describes vegetation units
with increasing levels of detail



Classification Hierarchy

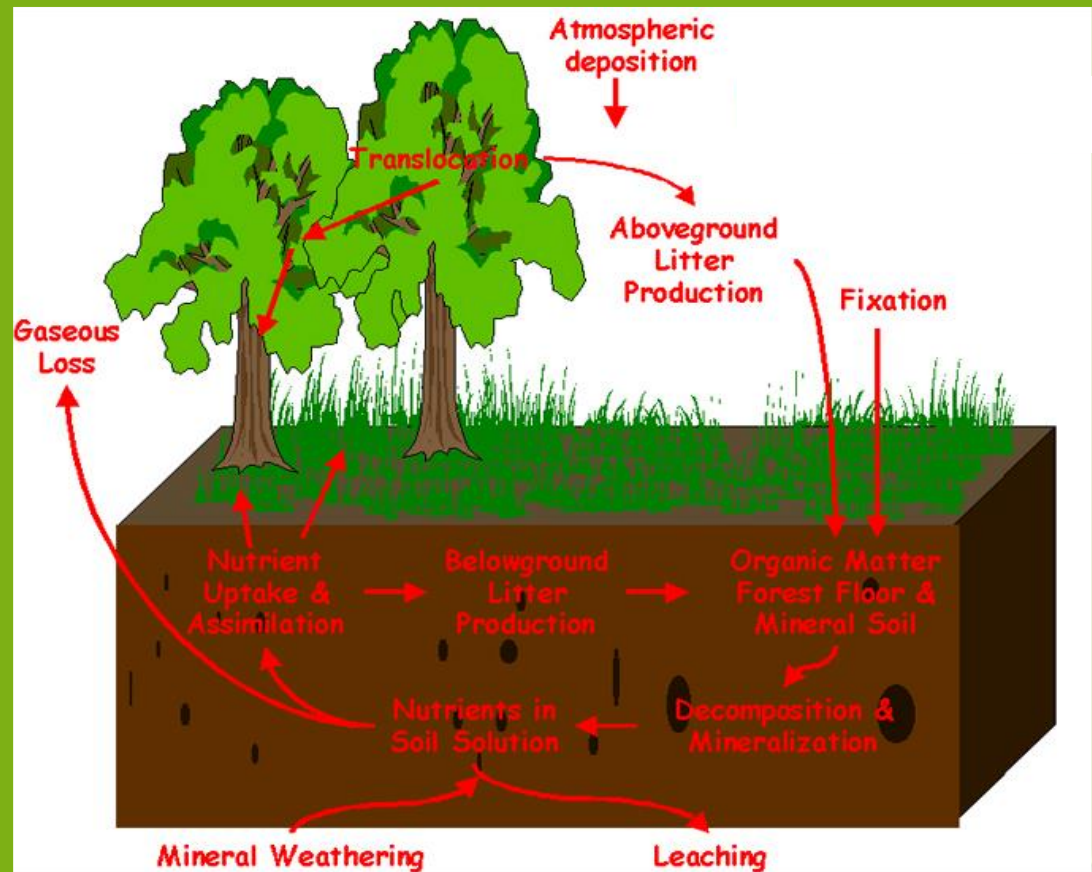
Figure 2. The NPC classification is hierarchical and has six levels.

CLASSIFICATION LEVEL	DOMINANT FACTORS	EXAMPLE
SYSTEM GROUP	Vegetation structure & hydrology	Upland Forest & Woodland Systems
ECOLOGICAL SYSTEM	Ecological processes	Fire-Dependent Forest/Woodland
FLORISTIC REGION	Climate & paleohistory	Central
NPC Class	Local environmental conditions	Central Dry Pine Woodland
NPC Type	Canopy dominants, substrate, or finer environmental conditions	Jack Pine - (Yarrow) Woodland
<i>NPC Subtype</i>	Finer distinctions in canopy dominants, substrate, or environmental conditions	Ericaceous Shrub

Classification Hierarchy

Determined by ecosystem processes:

- hydrologic regime
- soil moisture regime
- Nutrients cycles - production and decomposition
- natural disturbance regimes
- succession



Vegetation – indicator species

MHn35 Indicator Species	(freq%)	
	MHn35	MHc26
Groundpine*	36	4
White spruce (U)	18	2
Balsam fir (C,U)	51	8
Wild ginger (<i>Asarum canadense</i>)	23	4
Long-stalked sedge (<i>Carex pedunculata</i>)	38	12
Bunchberry (<i>Cornus canadensis</i>)	15	5
Sugar maple (C)	82	29
Bluebead lily (<i>Clintonia borealis</i>)	71	27

*Groundpine (*Lycopodium dendroideum* or *L. hickeyi*)



In forests - the all-important ground layer!



More immediately sensitive to and more reflective of habitat conditions than canopy trees

Why soils are so important ...



Soil orders ...

reflect vegetation processes
and cycles of nutrient
availability

Soil profiles ...

identify key structural
characters that control the
location of soil moisture

Soils have strong influences on
plants and plant assemblages

Classification Hierarchy ... System Group

Upland Forest



Classification Hierarchy ... System Group

Wet Forest System



Classification Hierarchy ... System Group

Upland Grassland and Shrubland System



Classification Hierarchy ... System Group

Wetland Grassland, Shrubland, Marsh System

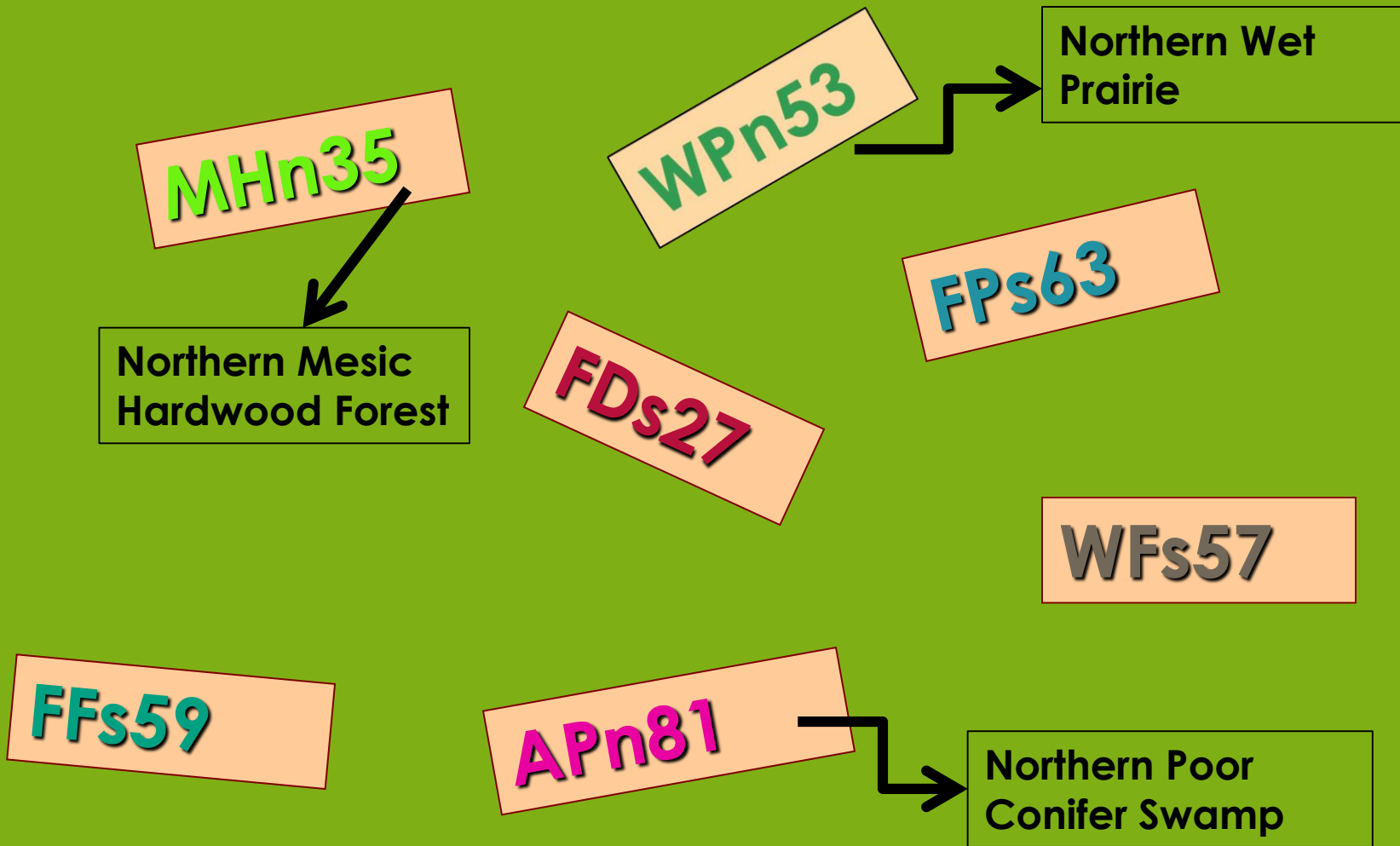


Classification Hierarchy

Figure 2. The NPC classification is hierarchical and has six levels.

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Breaking down the codes – Class level

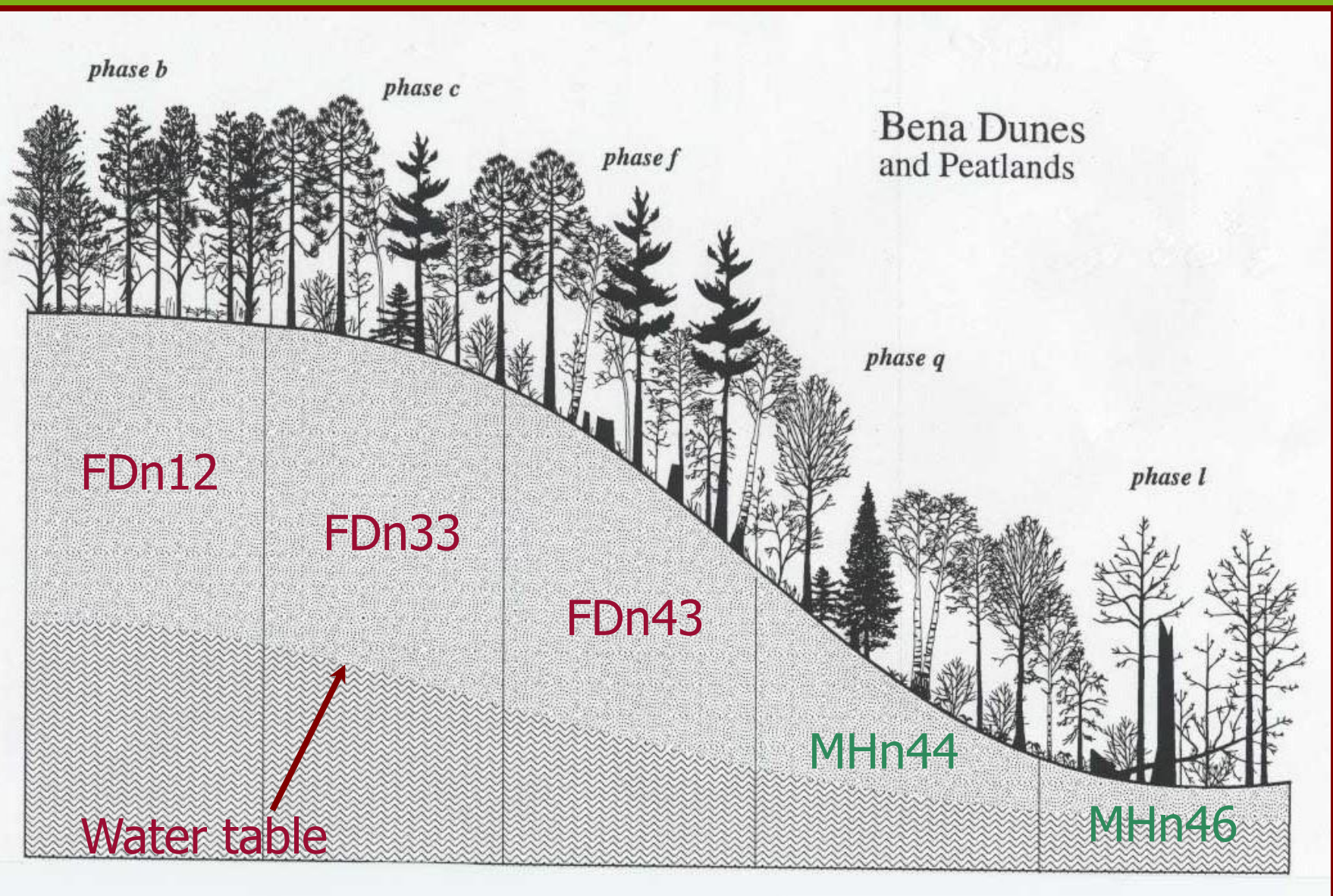


The NPC Class Code

MHn45 or FDc23 ?

- The first two letters stand for system
- the small-case letter stands for floristic region
- the two numbers stand for moisture and nutrients, respectively
- on gradients from 0 to 9
 - Moisture: 0 is driest, 9 is wettest
 - Nutrients: 0 is poorest, 9 is richest

Classification Hierarchy ... Classes

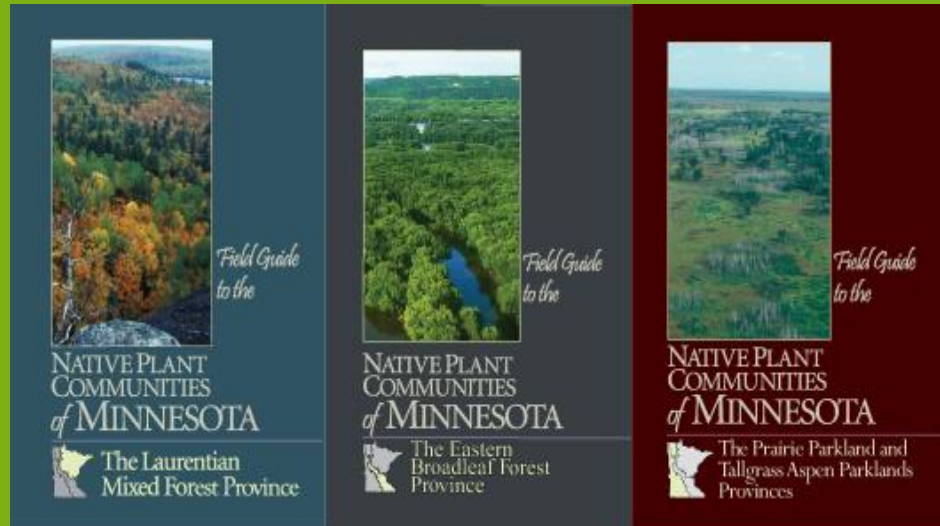


Conclusion

- The Native Plant Community Classification is a strong tool for understanding plant assemblages on the landscape
 - It helps us to learn functions and relationships in native plant systems
 - It helps us plan and manage lands based upon sound ecological processes



NPC Field Guide Series



Available from the Minnesota Bookstore

<http://www.comm.media.state.mn.us/bookstore/mnbookstore.asp>

Coming Soon ! A companion plant ID guide –

**Key Plants Appearing in the Field Guides to NPCs of Mn
– Forests & Woodlands**

Available on the DNR Website

MN DNR Native Plant Communities

<http://www.dnr.state.mn.us/npc/index.html>



The screenshot shows the Minnesota Department of Natural Resources (DNR) website. The header includes the MNDNR logo and navigation links for Recreation, Destinations, Nature, Education & Safety, Licenses, Permits & Regulations, Events Calendar, and About DNR. The main content area is titled "Minnesota's Native Plant Communities" and includes a sub-header "What is a native plant community?". Below this, there is a paragraph defining a native plant community and a photograph of a forest. A sidebar on the left lists various categories like "Definition", "Classification", "Status", "Importance", and "System Summaries & NPC Factsheets".

Ecological Classification System

<http://www.dnr.state.mn.us/ecs/index.html>



The screenshot shows the Minnesota Department of Natural Resources (DNR) website page for the Ecological Classification System. The header is identical to the previous screenshot. The main content area is titled "Ecological Classification System" and includes a sub-header "Ecological Land Classification Hierarchy". Below this, there is a paragraph explaining the system and its purpose. A sidebar on the left lists various categories like "Main page", "Prairie parkland province", "Tallgrass aspen parklands province", "Eastern broadleaf forest province", "Laurentian mixed forest province", and "Native Plant Communities".