

Suitability of Trees in Native Habitats

New Tools for Making Silvicultural Decisions

John C. Almendinger
Ecological Land Classification Program
Division of Forestry
Minnesota Department of Natural Resources



So you own a woodland? ... Me too!



Managing Family Woodlands

⦿ Multiple objectives

- Can your objectives can be realized?
- Do you know what's possible? All opportunities?

⦿ Family heritage

- Can you ruin your land for some objectives?
- What would increase your land's value?
- How long will it take to realize your objectives?

⦿ Profitable or low-cost management activities

- What are the up-front costs?
- What are the follow-up costs? Money pit?

Who ya' gonna' call?



A little education – Today's talk



- Why trees grow where they do
- How to see the world like a tree – Native Plant Communities
- Using suitability tables to make silvicultural decisions on your land

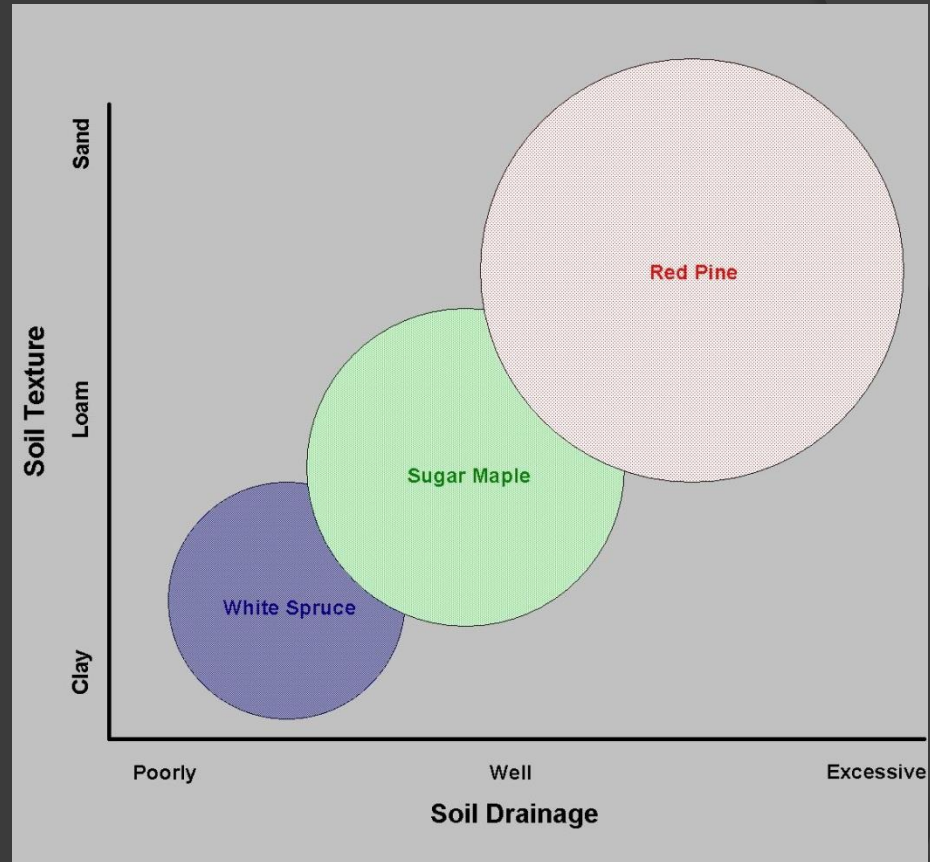
Native Habitats – NPC Systems

Why do trees grow where they do?



The Environmental Niche

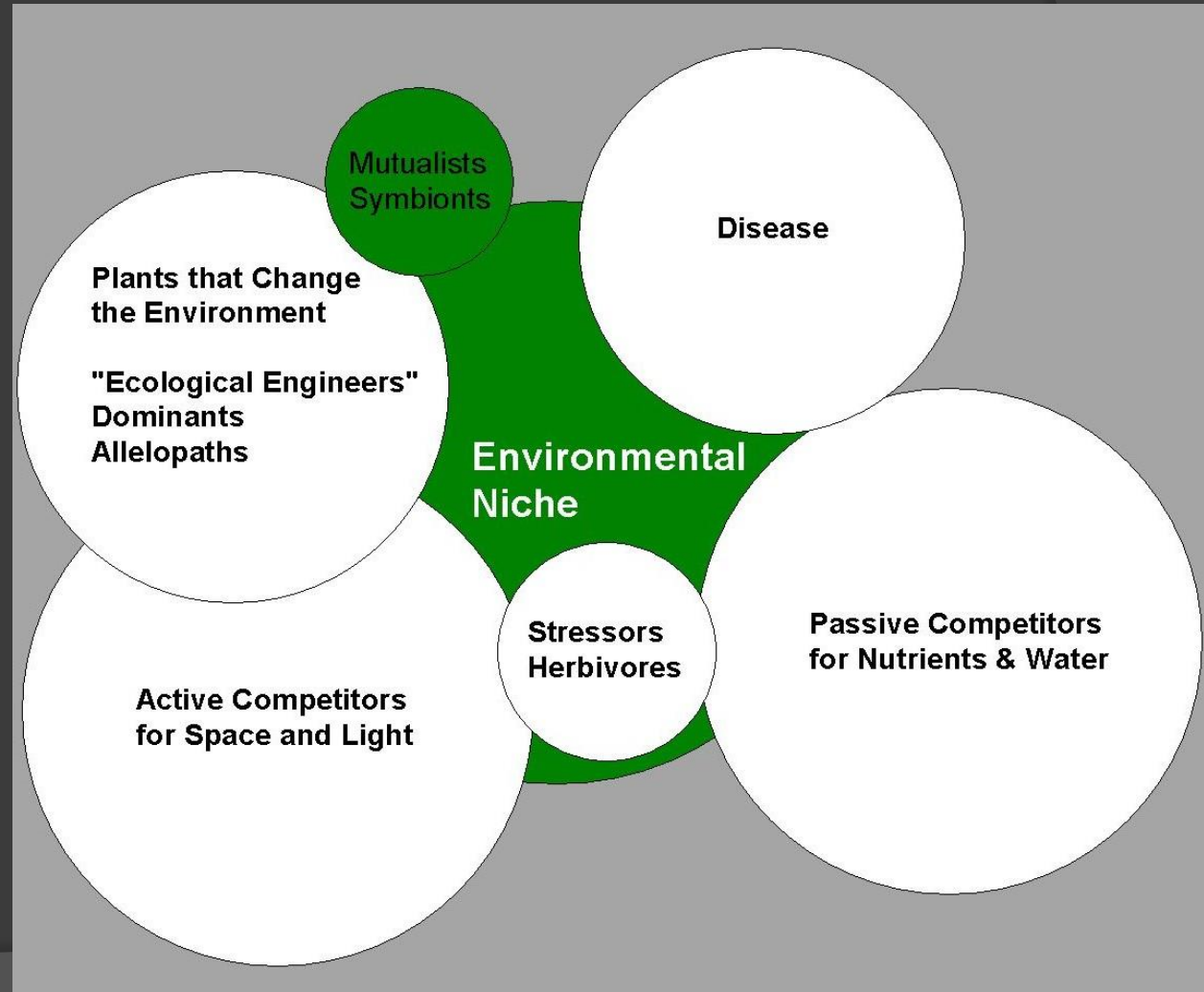
- Climate
- Disturbance regime
- Soil texture
- Soil drainage
- Soil nutrients
- Nitrogen mineralization
- Light



Anything that isn't alive affecting the delivery of light, water, heat, or nutrients to a plant.

The Realized Niche – a neighborhood gone to heck!

Living things that interrupt the delivery of light, water, heat, or nutrients to another plant.



Why do we want to grow trees in their realized niche?

- Superior quality
- Disease resistant
- Resistant to insect pests & herbivory
- Withstand climatic fluctuations
- Enables natural regeneration

**There is less risk and
it is much cheaper!**

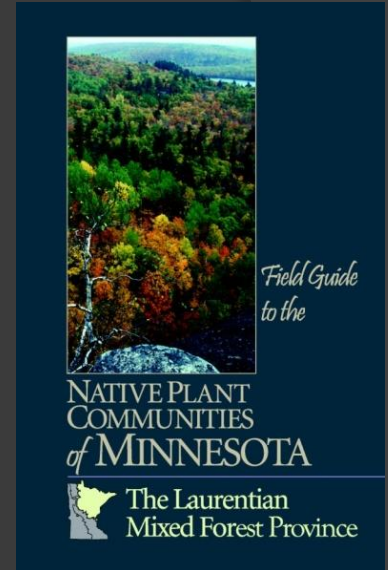
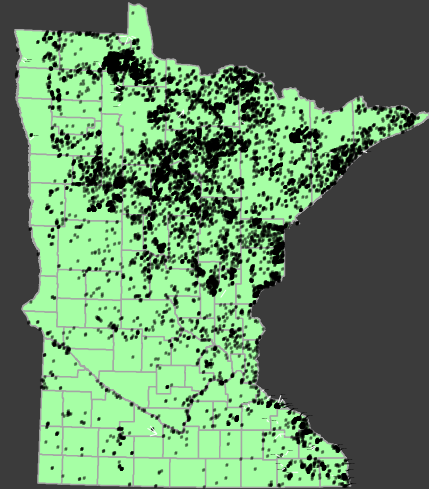
Not being able to see the world like a tree, how can you recognize the realized niches on your land?

By the company they keep – Minnesota's Native Plant Community Classification.



Understanding your land's potential: Ecological Land Classification

- Collected about 10,000 vegetation plots starting in the 1970's
- Dug about 1,200 soil pits and linked all plots to county soil survey
- Analyzed data for about 5 years
- Published 3 field guides on the natural ecosystems and their management potential 2003-2005.
- Trained over 1,000 professional land managers



What you need to know

- ⦿ Your forest is one of 52 distinctively different forest classes
- ⦿ Interpretations link all management advice to these classes
 - Recommended trees to grow or avoid
 - When will you have opportunities to change the forest composition
 - Risk of rutting and soil compaction
 - Hydrologic concerns
 - Invasive species concerns
 - Rare and endangered species
- ⦿ **Cover-type tells you none of this!**

How can I find out my forest's class?

- Get help from a trained forester

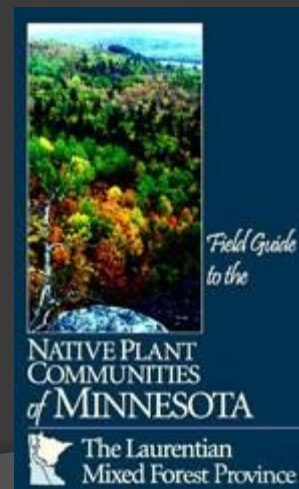
- A county, state, or federal forester near you has been trained
- Stewardship foresters are being trained



<http://na.fs.fed.us/stewardship/index.shtm>

- Do it yourself!

- Learn plants
- Learn to texture soils
- Learn about water and soil drainage



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SUCH A
DEAL!
DEAL!

The “suitability” index

Plants are “suited” to a site when they can live with their neighbors ... with little or no help from us!

- We have 7,597 vegetation plots, each belonging to a NPC class.
- From these plots we can measure 2 things that tell us how well trees are reproducing and growing:
 - Its good to be frequent
 - Its good to be abundant
- The index is the product of percent frequency and percent cover (abundance)

**MHn35
Example**

**Statewide
Suitability
Table**

Summary

- Selecting the right sites for crop trees is an effort to produce trees that are of superior quality, resistant to disease and environmental stress, and able to regenerate naturally.
- The Native Plant Community Field Guides are a tool for identifying the kind of site(s) you own.
- The ECS Suitability tables link tree performance to the Native Plant Communities.
- When trees are grown on the right sites, there is less risk and expense in managing them.

Getting Help: John Almendinger 218-322-2503

Forest Stewardship Plans

<http://www.dnr.state.mn.us/grants/forestmgmt/stewardship.html>

<http://sfec.cfans.umn.edu/StewardshipPlan/index.htm>

Field Guides

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

Training & Interpretive Materials

Harvey.tjader@state.mn.us Bemidji

Paul.dubuque@state.mn.us Grand Rapids

Michelle.martin@state.mn.us St. Paul