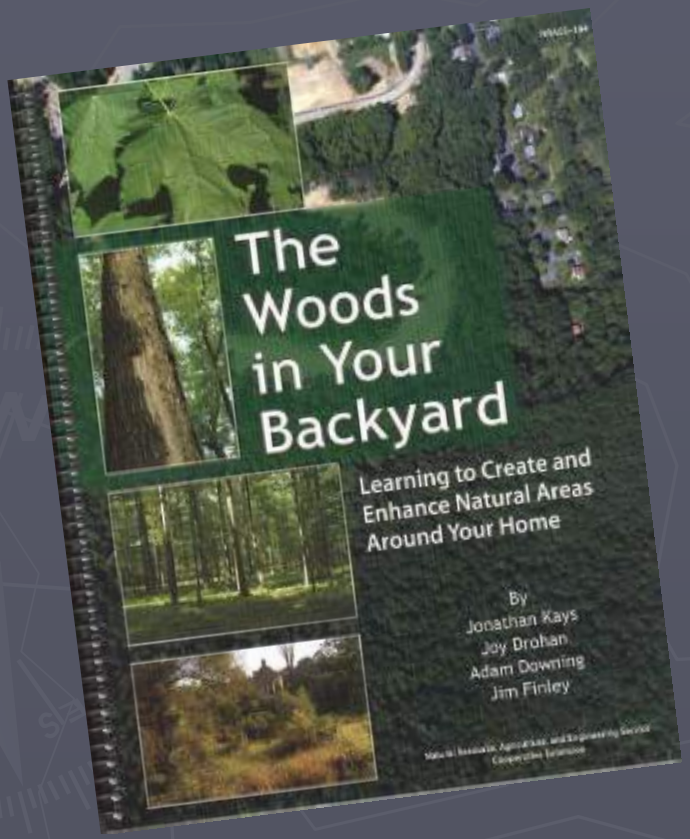
The Woods in Your Backyard: Learning to Create & Enhance Natural Areas Around Your Home



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Penn State School of Forest Resources

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College of Agricultural Sciences

Cooperative Extension

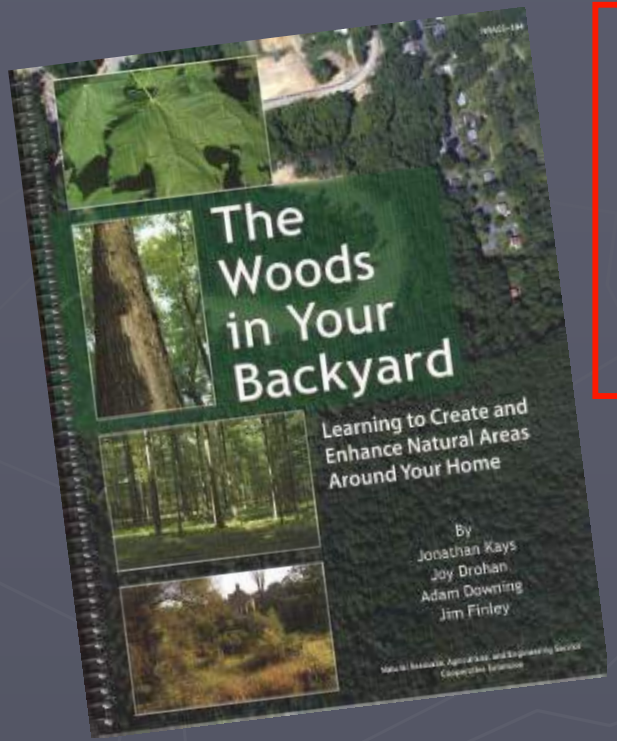
A Project of

Maryland Cooperative Extension
Virginia Cooperative Extension
Penn State Cooperative Extension

Financial support from
U.S. Fish and Wildlife Service &
Virginia Dept of Forestry

Resources

- 138 pages
- 91 color photos
- 20 activities
- 8 tables
- Workbook
- PLUS
  - Diagrams, Figures, Case Studies, Worksheets
  - Glossary, Resources, Appendices



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Forest Parcelization vs. Fragmentation

- Parcelization:

  The division of large, contiguous forest tracts into smaller properties; promotes forest fragmentation and land-use conversion.

- Fragmentation:

  The conversion of forests to non-forest uses; leads to diverse land uses on former forest land. Tends to isolate and separate forested tracts from each other.

Parcelization

The Situation in Pennsylvania

- Lose 375 – 600 forest and farm acres daily
- 71% forests privately owned
- **54%** forestland owners < 10 acres; 630,000^{+} owners
- Average forest owner < 16 acres; Tenure < 13 years
- Changing land ethic with land use change
- Benefits – Home, nature protection, privacy, recreation

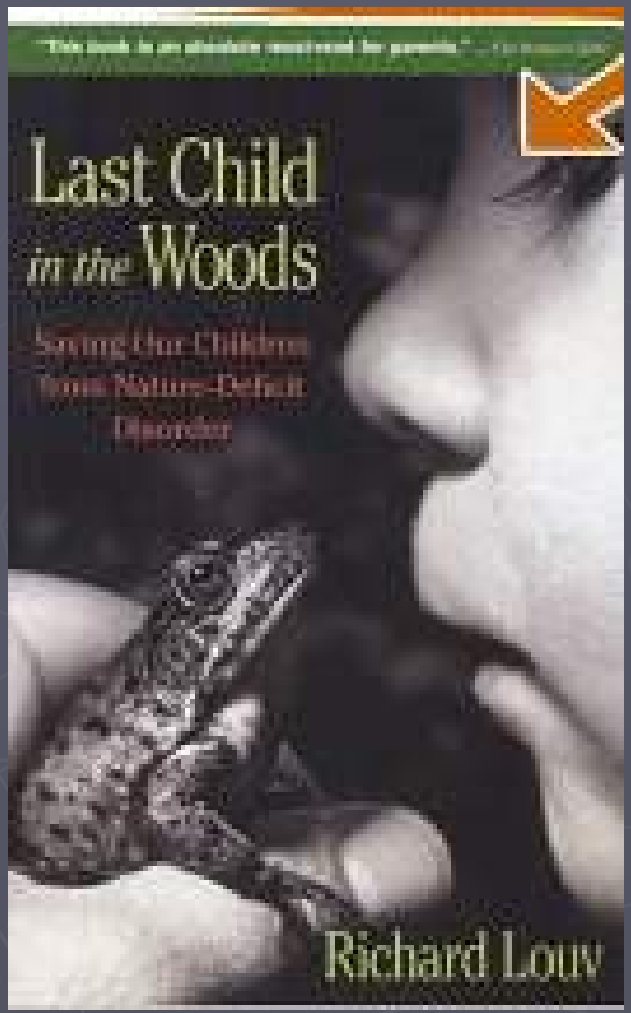
Negative Effects of Fragmentation

- Disrupts natural wildlife travel corridors
- Decreases interior habitat
- Increases adverse edge effects
- Increases human and domesticated animal disturbance
- Encourages exotic and invasive species
- Frustrates broader societal goals

Why Manage Land?

- Improve aesthetic appeal of your property
- Attract wildlife
- Provide recreational opportunities
- Improve water quality and quantity
- Improve air quality
- Good exercise
- Family activity/hobby
- Increase property value
- Restore or address forest health

Getting our kids outdoors!



- A motivation to get out on the property
- *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*

  -Richard Louv

Landowners Play an Important Role

- Especially if neighbors cooperate, they can improve wildlife habitat
- Everybody's actions influence water quality, air quality, aesthetics, etc.
- Every little bit of effort helps

What Matters to You?

- FIRST, you only care about something, IF it matters to you
- What do woods and forests provide?
- Woods and forests have diverse values
  - Economic
  - Ecological
  - Social

Backyard Woods Opportunities Must Appeal to Landowner (Your) Interests

- Amenity resources
- Forest health
- Wildlife
- Water management
- Trees, shade, diversity
- Fire risk reduction
- Income generation – last?

Amenity resources

- Scenery
- Trails
- Privacy
- Shade
- Habitat

Typically the MOST important product of personal natural areas

Scenery / Aesthetics

- Park-like woods – large trees and low ground cover
- Little or no downed woody debris(?)
- Open vistas and meadows
- Ephemeral features
- Depth of view, larger trees

Enhancing Recreation & Aesthetics

Creating a Trail or Road

- Visually interesting and variable terrain
- Follow natural contours and meander
- Use BMPs to reduce erosion potential
- Lay it out first with ribbon - then adjust before cutting or planting

Privacy and Shade

- Vegetation visual & noise buffers
- Shade reduces
  - temperature (10-15 degrees)
  - cooling costs (10-80%)
- Shade can direct/block cooling breezes

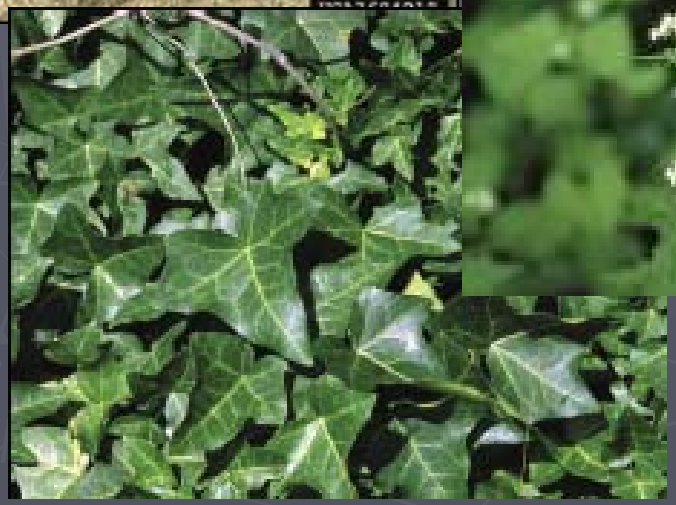
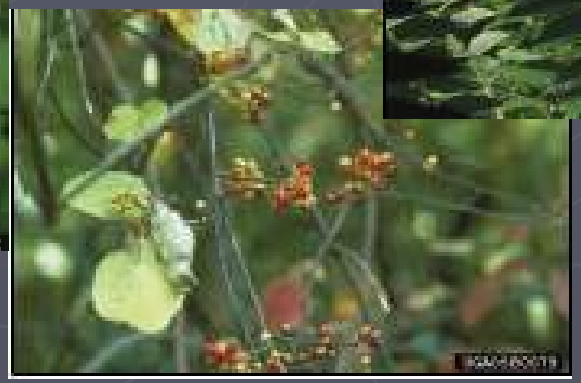
Improving Wildlife Habitat Value

- Natural areas increase food, cover, water, space
- Stop mowing - go natural
- New natural areas increase wildlife-human interactions (conflicts?)
- **‘Messy is okay’**

Habitat
Common Invasive & Exotic Species





Provide and Enhance Habitat Elements

- Mast trees (edible fruits/nuts)
- Native plants (trees, shrubs, flowers, lichens)
- Rocks (cliffs, outcroppings, piles)
- Coarse woody debris (snags, brush, cavities)
- Water (stream, pond, wetland, spring)
- Wolf trees (large, spreading, cavities)

Mast = Forest Food

Providing and Enhancing Habitat Elements

To increase wildlife amount and/or variety create:

- Brush piles
- Dense thickets
- Edge(?)
- Woods openings(?)
- Use native plant species

Some Fundamental Principles
Forestry 101

Improving Existing Natural Areas

- Woods health
- Wildlife
- Wood products
- Recreation & aesthetics

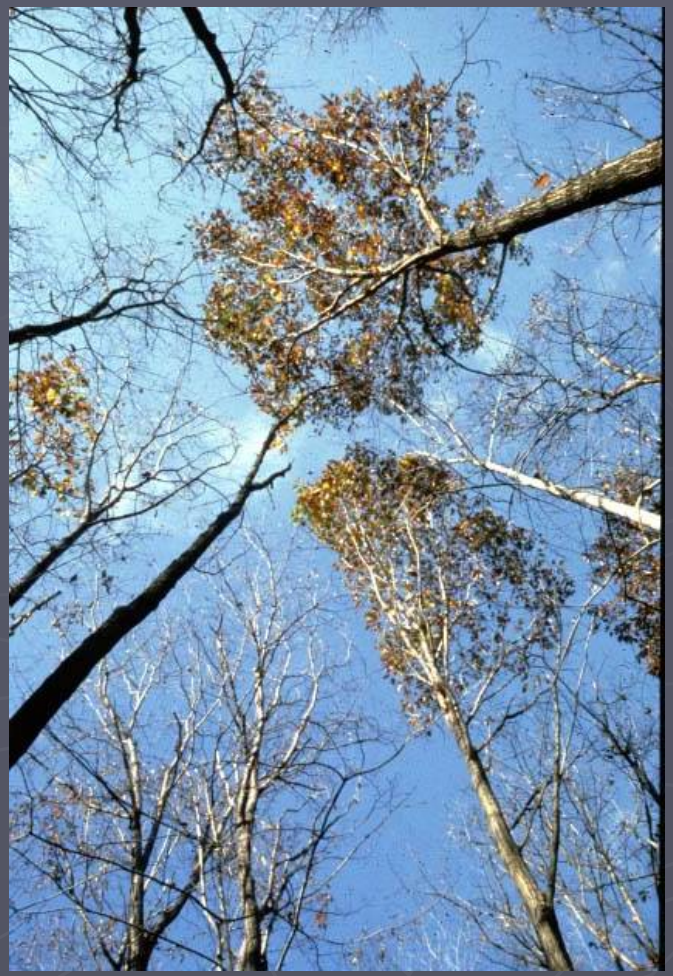
Management Techniques

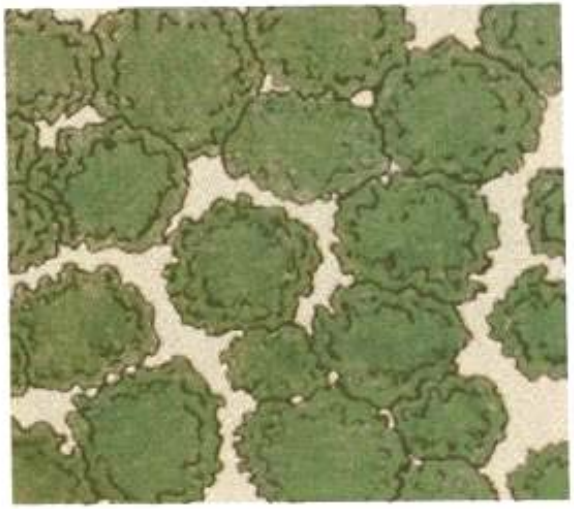
- Implement basic forestry concepts
- Encouraging succession to replace lawns
- Working with “others” to create change

Backyard Woods Management

To get firewood, lumber, aesthetics, wildlife, etc……Crown Thinning!

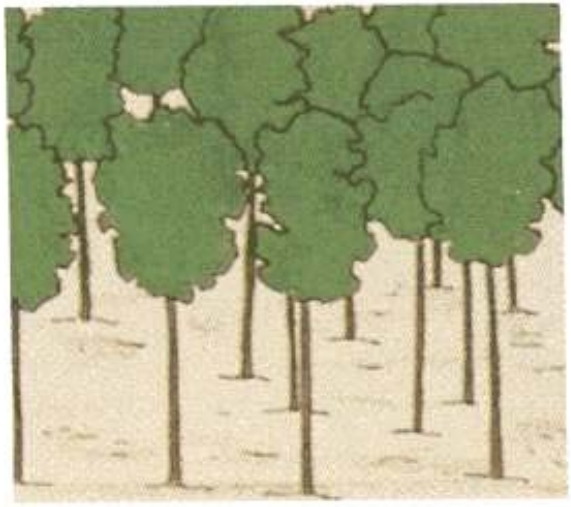
- Applied to younger stands
- Select “crop” trees, 30 - 100 per acre
- Balance the crowns
- Concentrates/accelerates growth



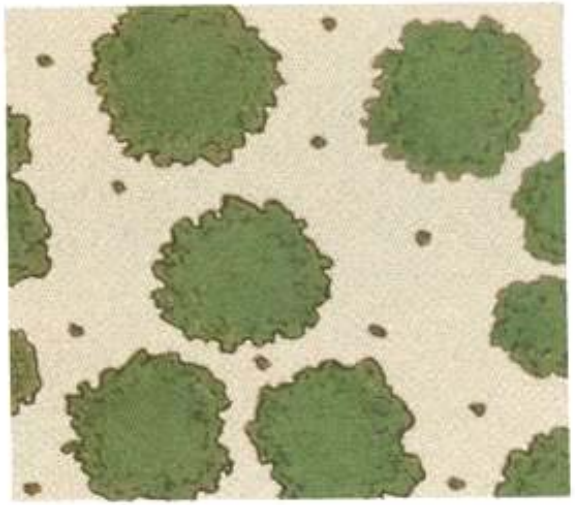


View from above

BEFORE TREATMENT

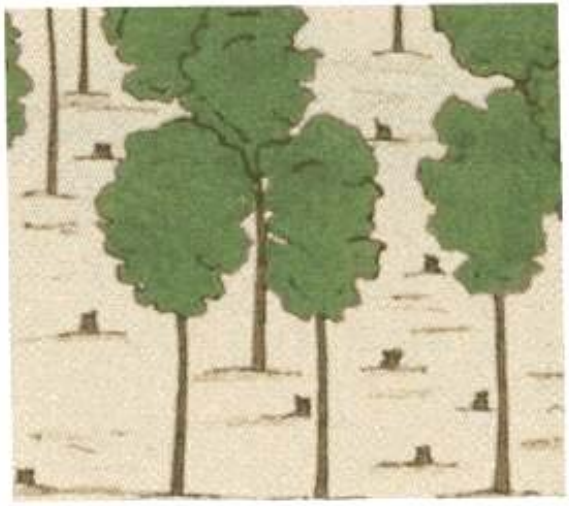


View from side



View from above

AFTER TREATMENT



View from side

Crown Touching Release

Use Smaller Low Impact Equipment

“Out with the Lawn
In with the Woods”

Changing the Landscape Paradigm: Mowed to Natural Use

Landowners Spend

- 2.2 Million (36% of the population) like to watch wildlife at home. $309/person
- Turf is third in most common land use nationwide. (PA over 2 million acres of turf)
- Every year since 1981, nursery and greenhouse crop spending increased 6.5% annually

2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

http://paimpact.cas.psu.edu/agr26.html

http://aginfo.psu.edu/Psa/ws2000/green2.html

Converting from a Mowed Lawn to an Unmowed Natural Area

- Improve wildlife habitat
- Improve water quality
- Reduce noise and air pollution
- More time for something else!

Converting Mowed Lawn to Unmowed Natural Area – How to do it?

Natural succession

Tree seedlings & shelters

Planting Establishment & Maintenance

Consider Planting Drainage Areas

Trees Grow - Crowns Close
Let It Go “wild”

Expanding existing woodland areas

- Planting area (left) expands the existing woodland buffer

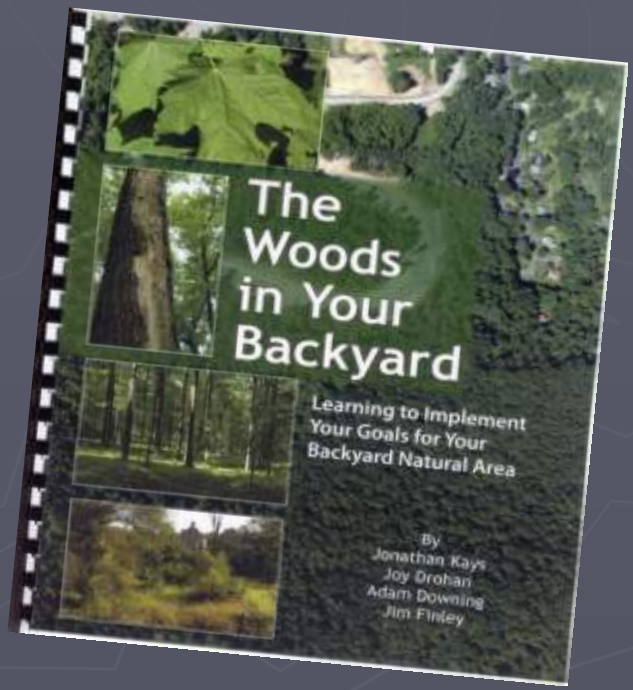
Planting Designs

Small backyard planting better suited for more random or clumped planting – more effort but “natural” as it develops

Herbicide & Mow

Objectives

- Self-assessment for 1-10 acres landowners – create & enhance natural areas
- Apply simple and conventional forestry techniques
- Encourage changed practices
- Look beyond own self-interests – across the fence and landscape

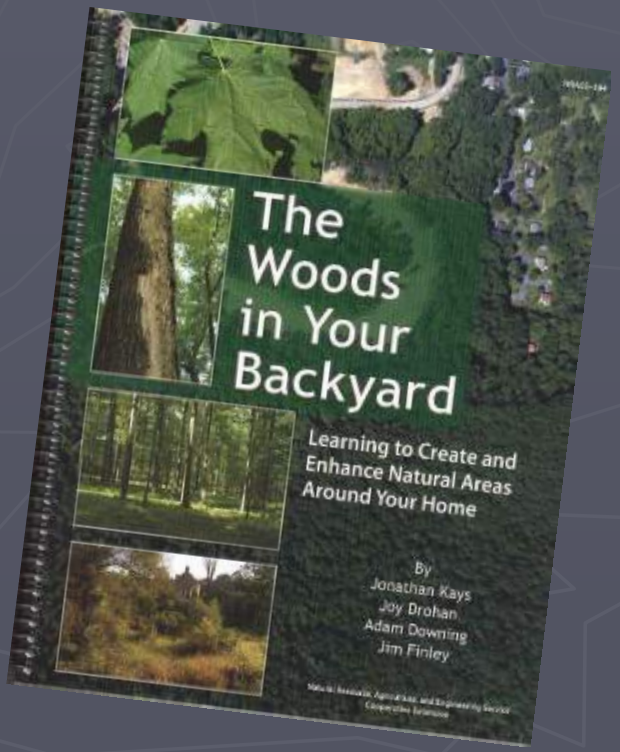


“The Woods in Your Backyard” Development Assumptions

- Use case study approach
- Focus on diverse values
- Create personal assessment
- Support materials for delivery & mentoring.
- Support and guide group education and outreach
- Internet access to resources

Manual uses a learning approach....

- A lesson...
- Hands-on activities to gather information...
- Activity sheets build on previous lessons
- Self-develop plan and approach way to implement



Paradigms Addressed

Transition from mowed to natural use

Enhance existing natural areas

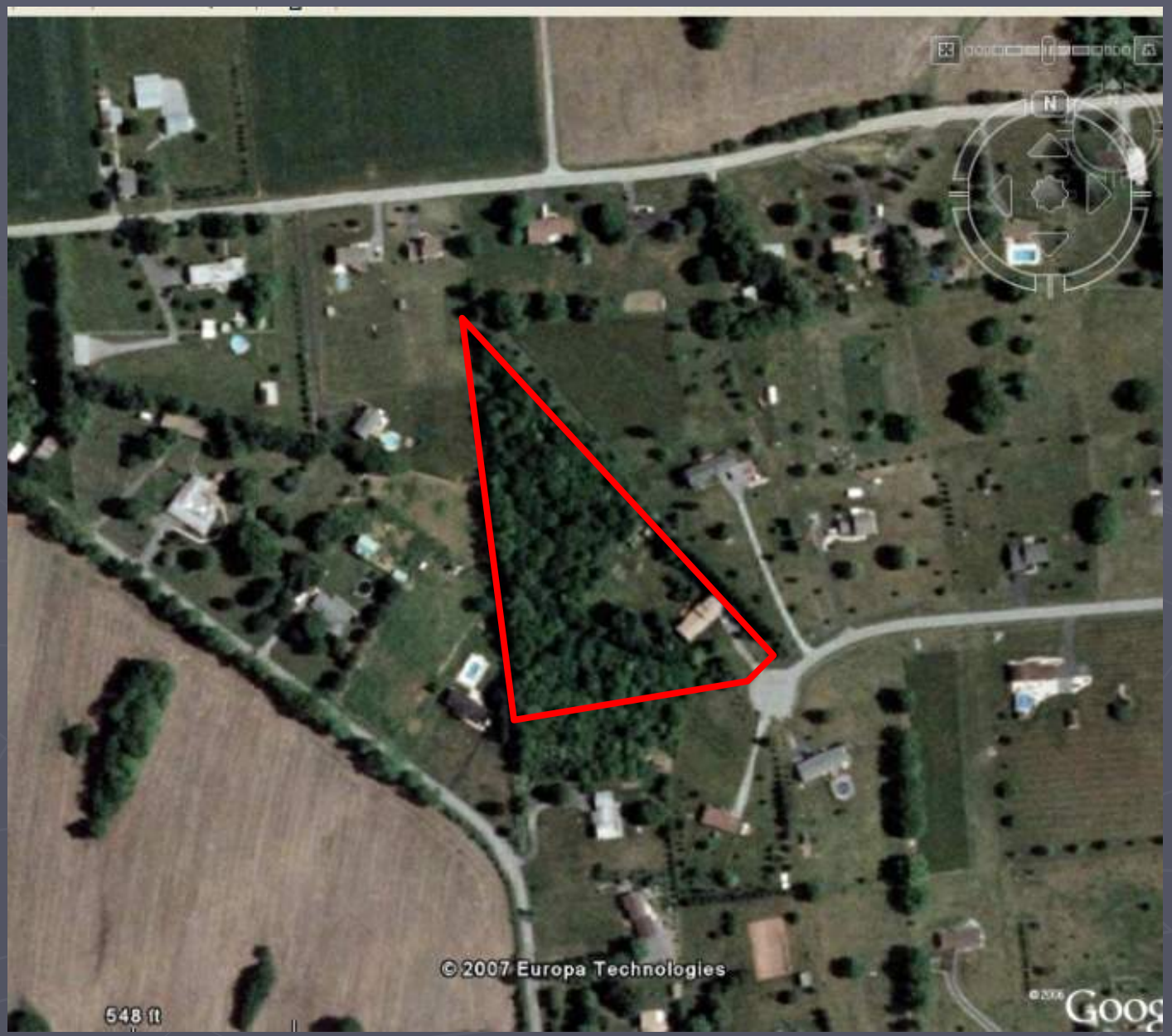
Conceptual Assessment Framework

- Three types of land use:
  - *Intensive use* – buildings, sheds, paved areas, etc
  - *Intermediate use* – lawns, garden, pasture, orchard
  - *Natural use* – forested, unmowed areas with small trees & shrubs

Paired 3-acre plots

Aerial Photos broaden perspective [http//:google.earth.com](http://google.earth.com)

Google Maps helps show the landscape



Getting to Know Your Property

Inventory Your Property - Page 15

Objectives or Lessons

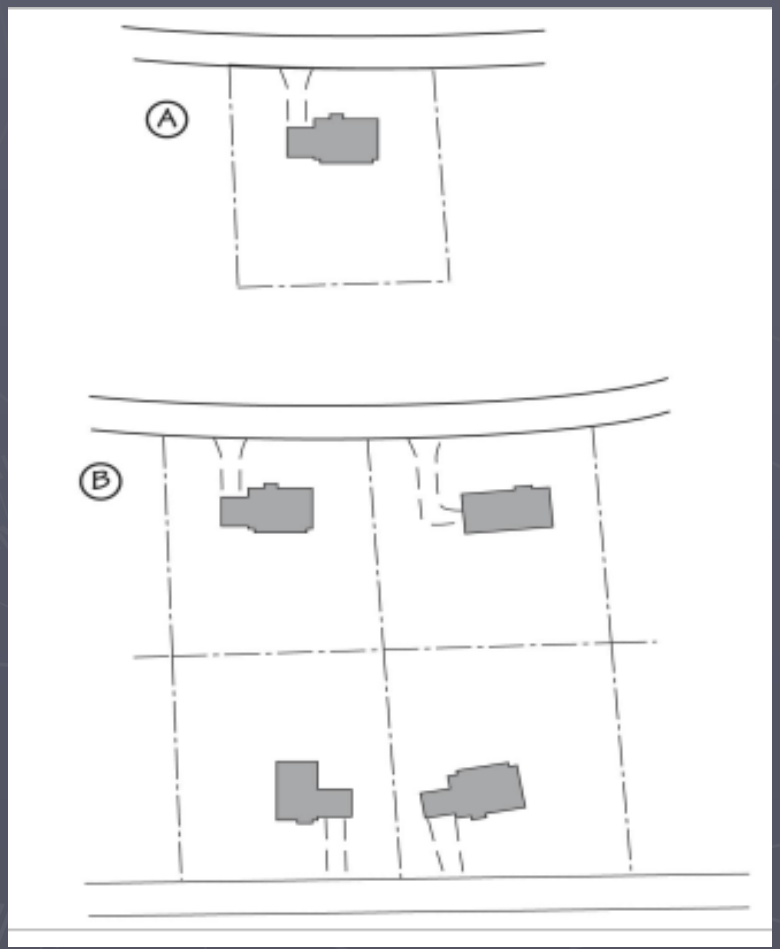
- Realize your property's importance in the landscape
- Consider how other's properties affect your land management decisions
- Divide your property into "land use" units
- Learn the basic steps of tree and shrub identification

Your Place in the Landscape
Lesson 1 – Page 17

- A single property of less than 10 acres can't meet habitat needs of many species
- Land parcelization and fragmentation is real
- Landscape level natural ecosystems health increasingly depends on these smaller lots

Patch Characteristics Affect Habitat Value

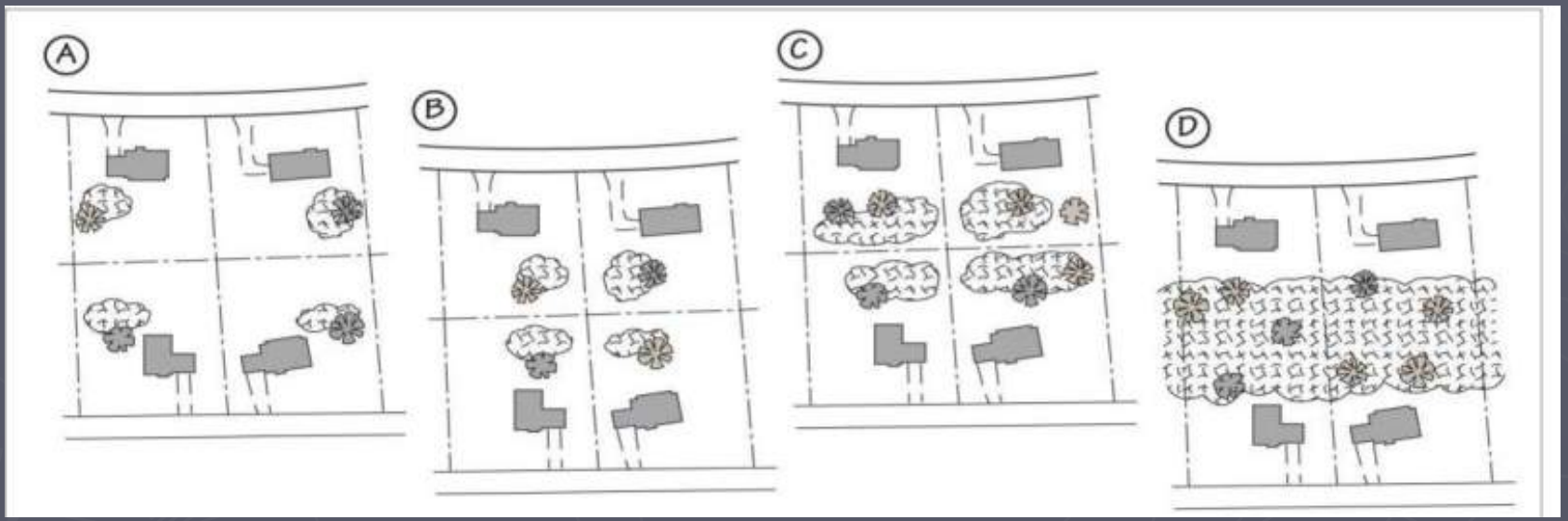
Lesson 1 – Page 17



- Figure A: Your house and lot: space and habitat diversity are limited
- Figure B: Examining the landscape surrounding your property may open new possibilities for habitat management as space and diversity increase
- Work with your neighbors!

Patch Characteristics Affect Habitat Value

Figure 2 – Page 18



- Patch size and proximity affect wildlife habitat
- Larger, closer, and connected habitat more useful
- “D” best for wildlife; “A” worst

Habitat Edge – Page 18

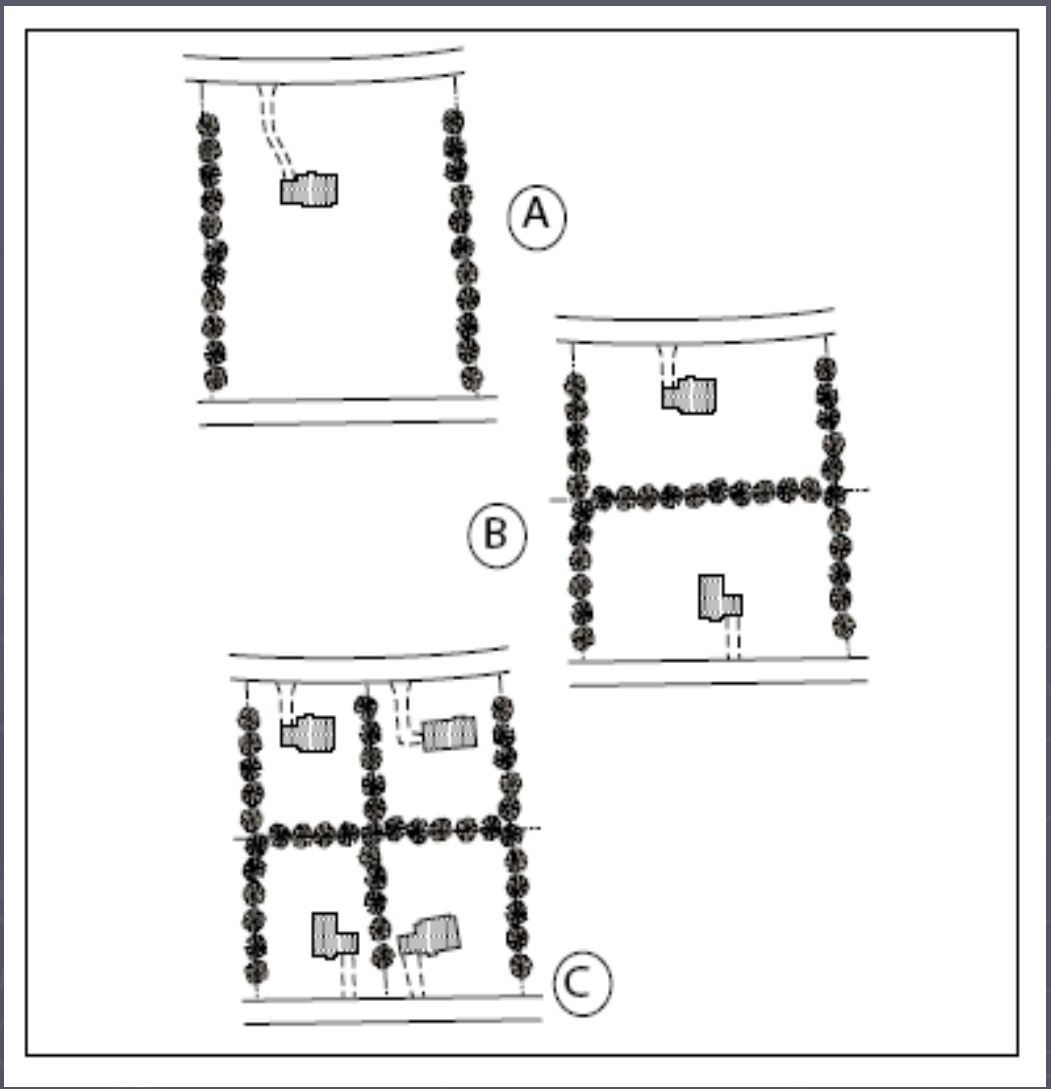
Edge occurs at the interface between two or more habitats

hard edge

soft edge

Patch Characteristics Affect Habitat Value

Figure 3 - Page 19



- As lot size decreases – total edge along property line increases
- “A” least edge and “C” has most
- Managing edge is important

Edge Affects Habitat Value

- Wildlife diversity often higher because of variety of food and cover
- Edge increases predation for many species
- Aim to minimize edge and increase interior area behind edge (wider is better)
- Circular patches have least edge

Reality Check: Is Your Family with You?
Lesson 2 – Page 9

- Developing land management plans – account for needs and opinions of all family members
  - Some may not want to commit time or money
  - Others may want to pursue different land management goals

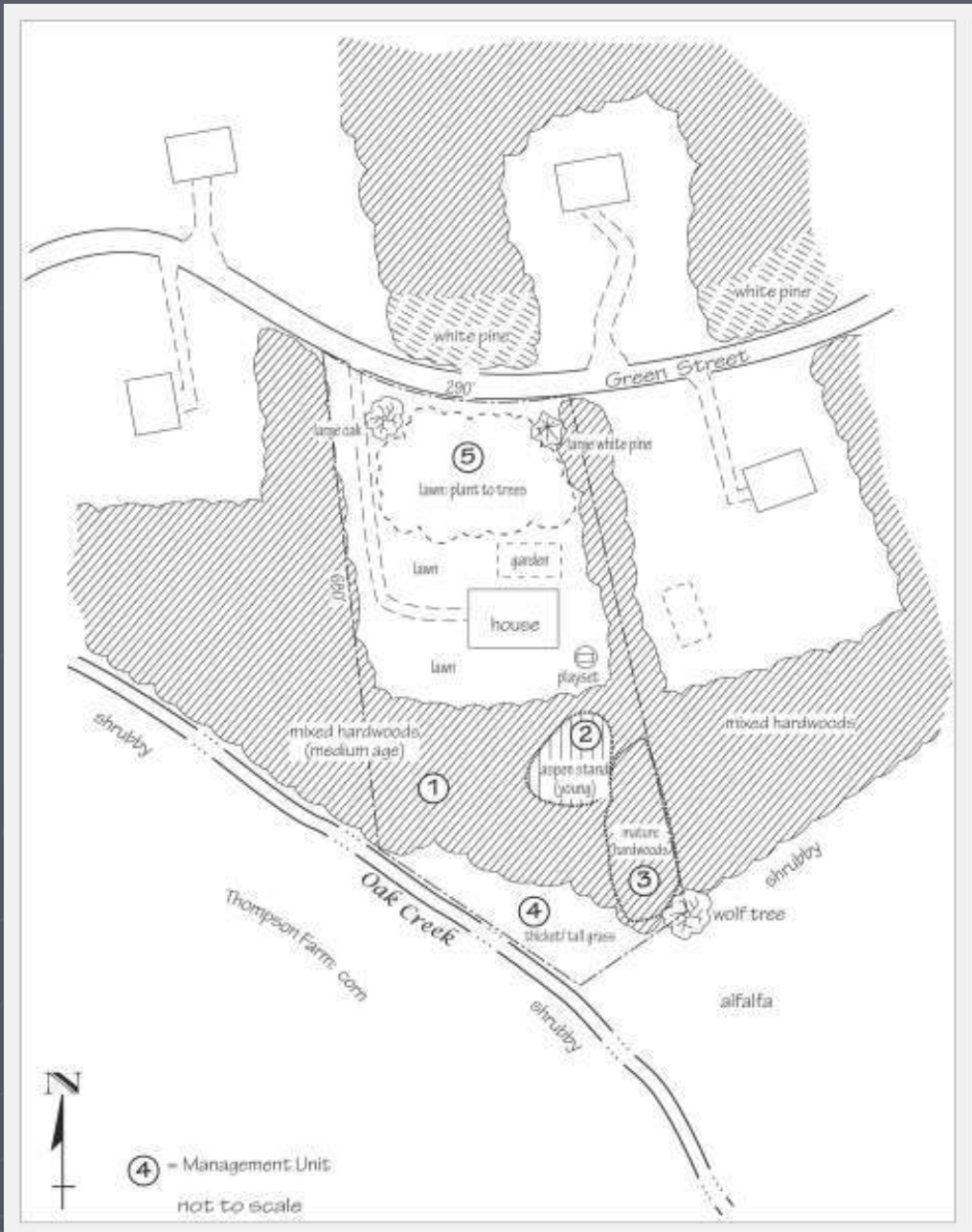
Family Matters

- Various goals possible on one property
- Break large projects into small, doable pieces
- Limited time – consider hiring help
- Challenge finding service providers

Get to Know Your Property: Management Units

- **Tree identification basics**

1) mixed hardwoods of various species, medium-sized
2) young aspens
3) mature hardwood
4) streamside riparian area (tall grass/thicket)
5) lawn (plant to trees)



Some More Fundamental Principles
Forestry 102

Ecological Principles

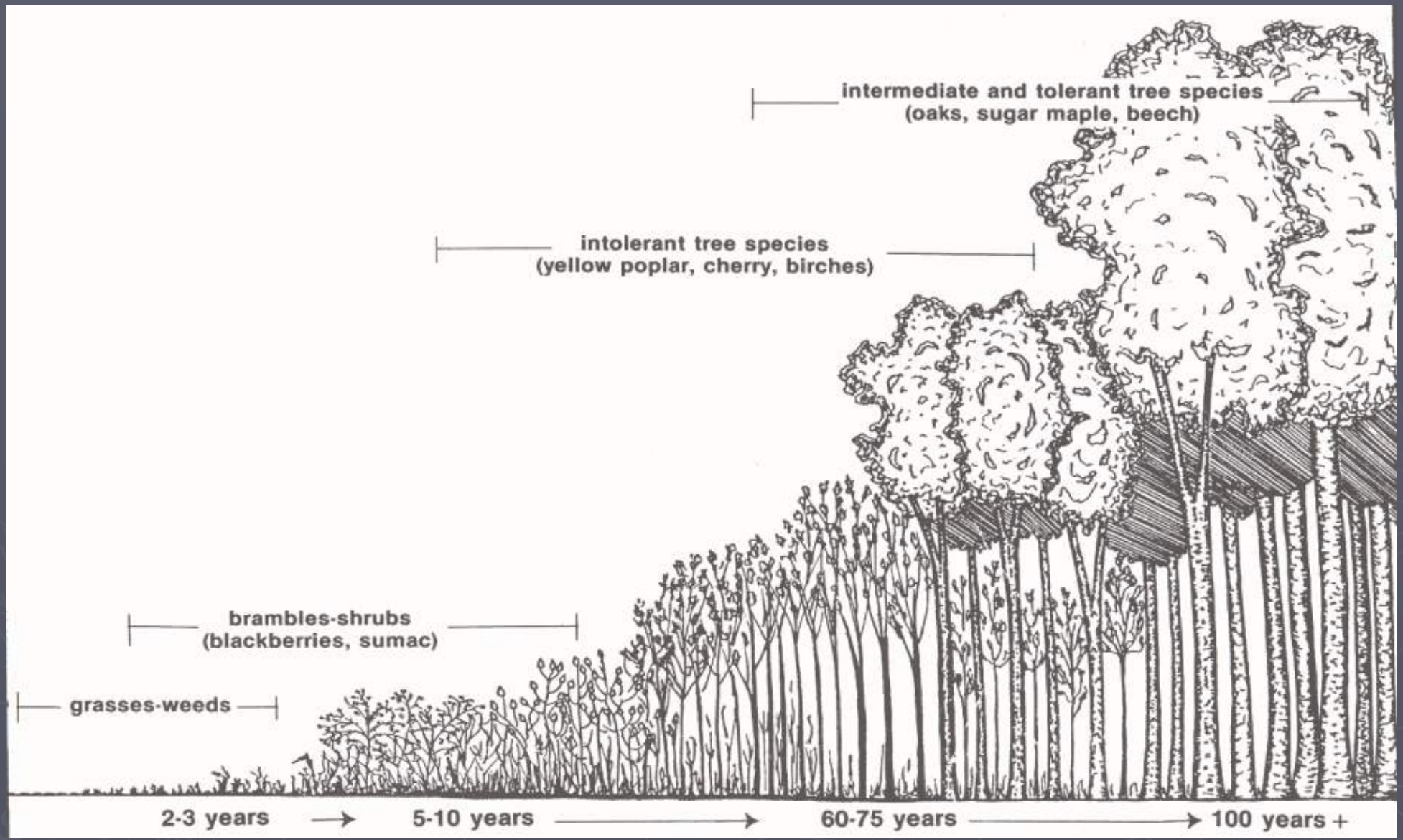
Ecology: the study of natural communities and how they function and interact

- Principles of succession
- Principles of forestry
- Water resources and natural areas
- Principles of wildlife ecology

The Dynamic Natural Area: Principles of Succession

- Natural areas change over time; whether or not you do anything to them
- You can alter successional processes
- Plants vary in their resource requirements (i.e., light, water, nutrients, space)





The first vegetation to grow is that which like full sunlight

Succession Principle 3

Trees vary in tolerance to shade

Shade tolerance of common Eastern trees		
Shade tolerant	Intermediate	Shade intolerant
American beech	Ash	Aspen
Blackgum	Sweet birch	Gray birch
Atlantic white cedar	Yellow birch	Paper birch
Flowering dogwood	Black cherry	Eastern red cedar
Eastern hemlock	Hackberry	Larch
Sugar maple	Red/White oak	Red pine
	Eastern white pine	Virginia pine

Forestry Principles

1. Tree size not directly related to age
2. Different tree species require different conditions
3. Trees grow at different rates – compete for resources (i.e., sunlight, water, and nutrients)
4. Woods are 3-dimensional

Forestry Principles: Getting Down to Basics

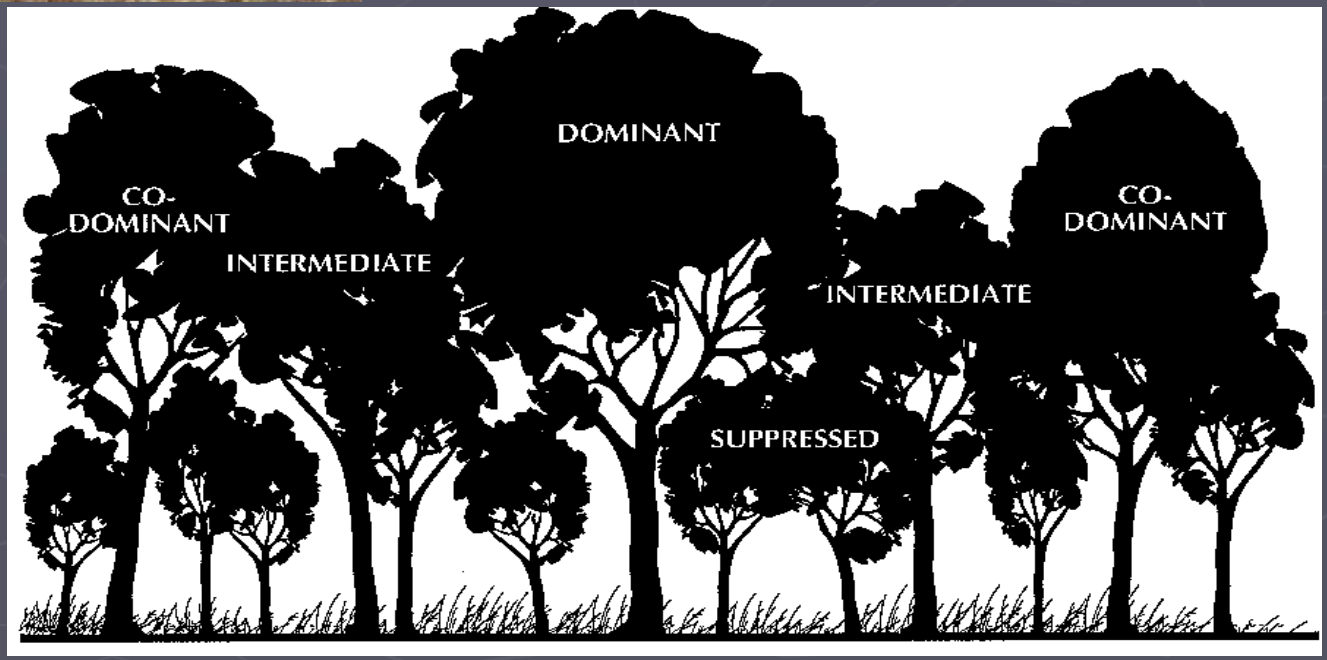
5. Trees reproduce either from seeds or sprouts
6. Trees don't live forever; dead trees valuable for wildlife and soil
7. No matter how you manage, but especially with passive management, invasive and exotic species will come

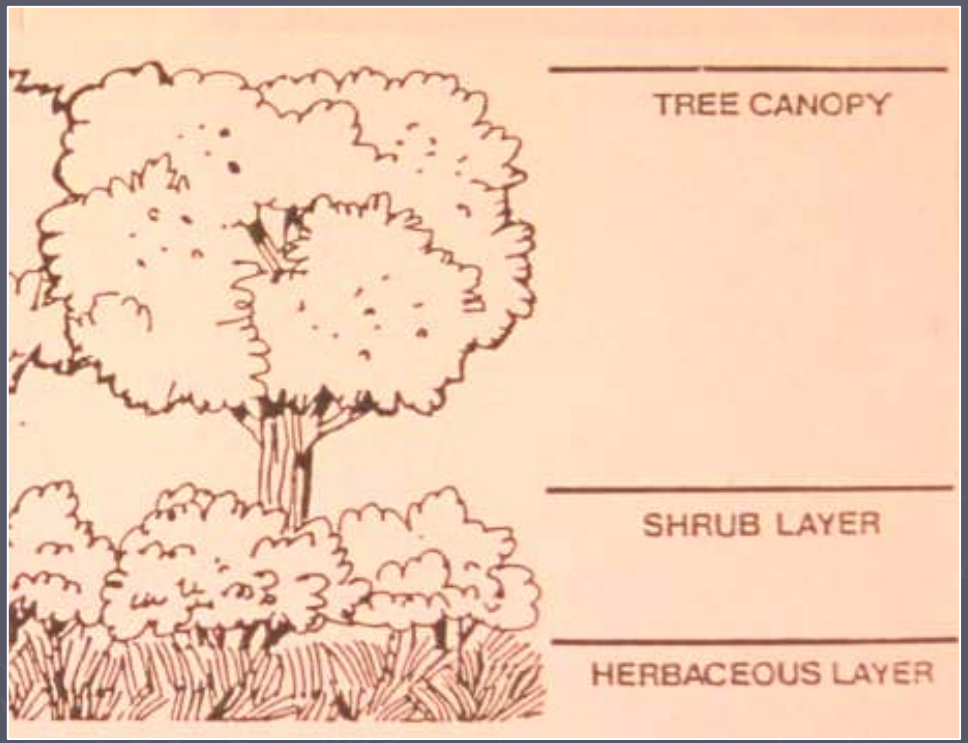
The Dynamic Natural Area: Principles of Succession

- Different successional stages provide different wildlife habitat, aesthetics, and recreation.
- Every small wooded lot may **not** contain every stage of succession – What is in the landscape?

Different stages of succession represent different habitat patches (i.e., mature woods, old field, young woods, etc)

Understanding how woods work - ecology





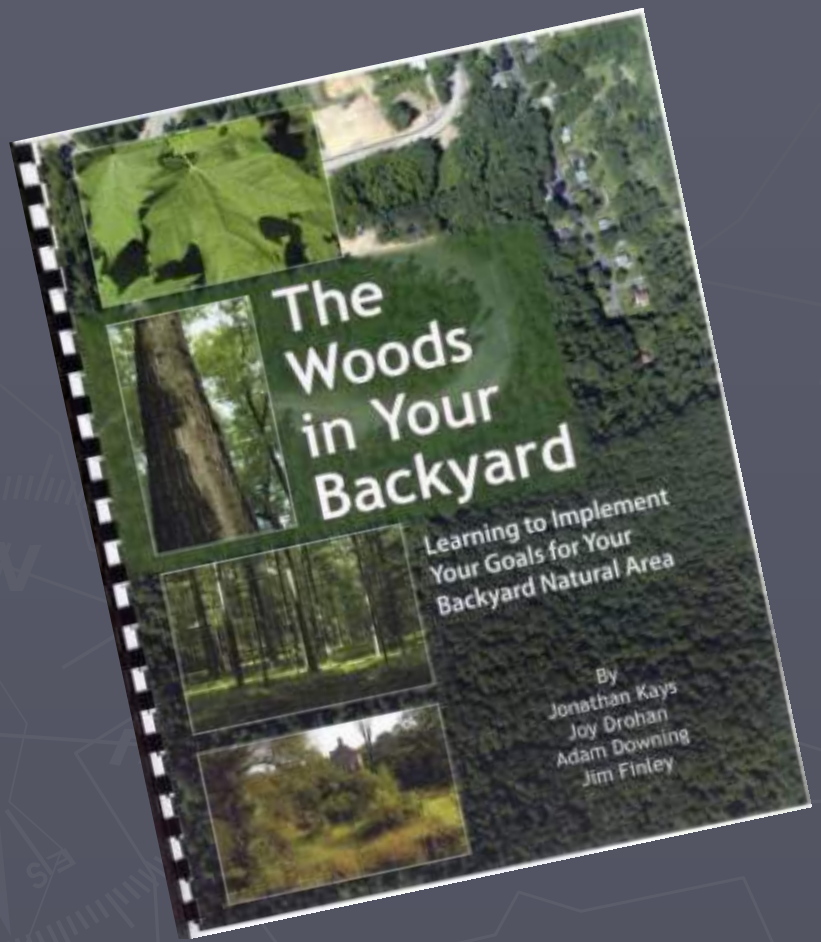
Vertical structure – stratification and niches

Watching “It” Change

Document Your Progress

- As you work in your backyard woods:
  - Follow your plan
  - Involve others
  - Keep records
  - Take pictures
  - Appreciate change
  - Enjoy it!

http://www.naturalresources.umd.edu



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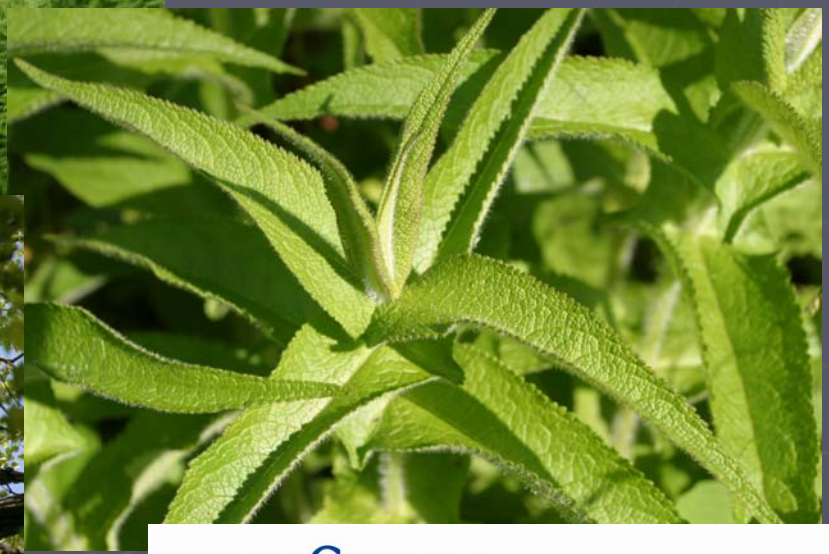
What questions do you have?



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