Managing for a Healthy Woodland

Lenny Farlee, Extension Forester

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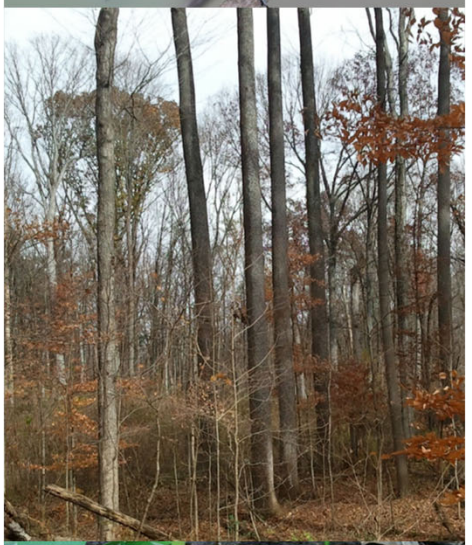
Management …

- The **organization** and **coordination** of the **activities** in order to achieve defined **objectives**

Defining your objectives



Start with some questions:

Why do I own this land?

What do I enjoy about it?

What do I expect from it now?

What expectations do I have for the future?

Reasons to Manage Forests

- Natural processes have been disrupted by past and present activities/conditions.
- Productivity and health can be enhanced.
- Specific benefits and products of interest can be actively encouraged.
- Maintain diversity of ages and types of forest across the landscape to retain plant and wildlife communities.

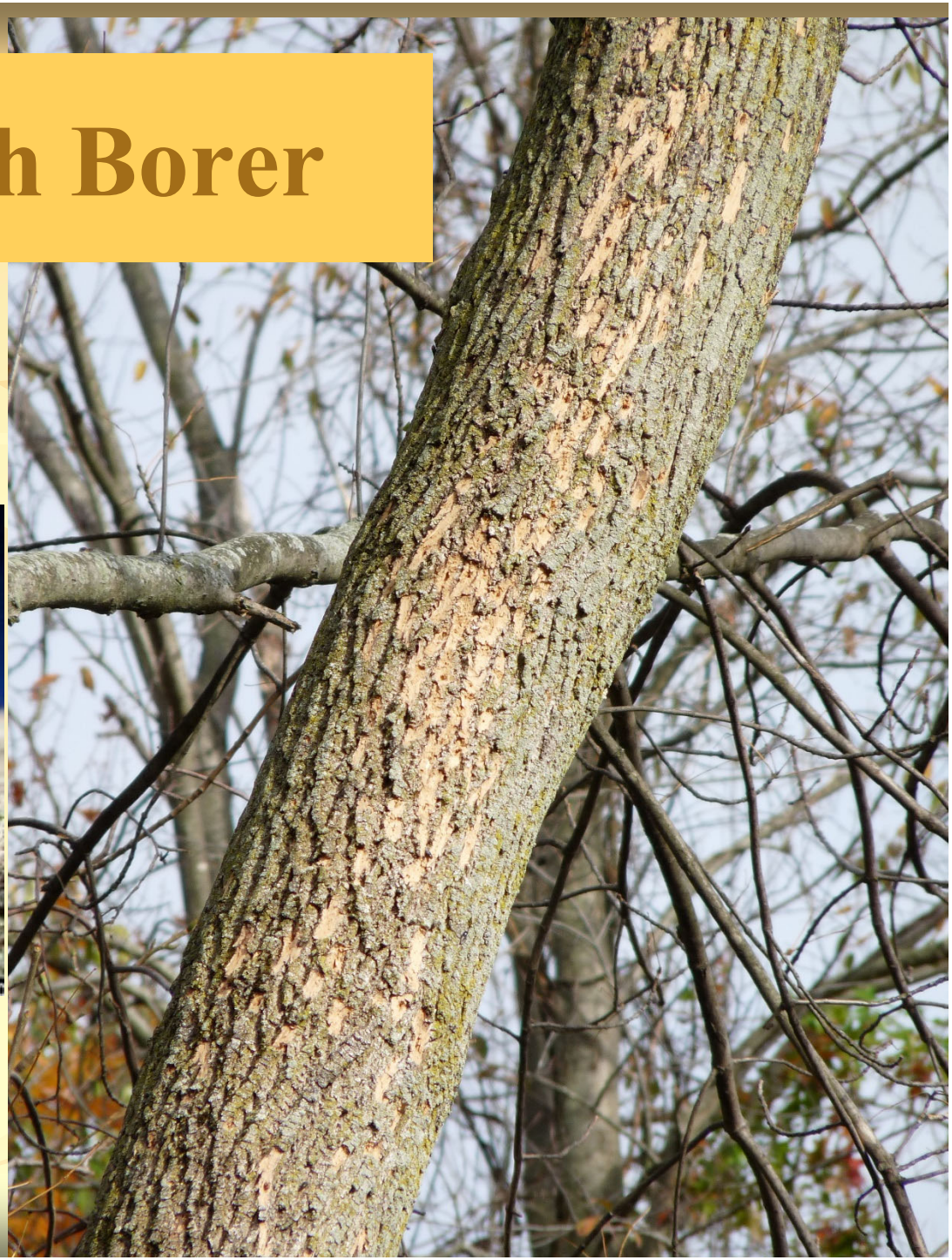
Restoration – Conservation – Cultivation

Many woodlands have had a rough history:

- Unmanaged grazing
- High-grade harvesting
- Invasive species
- High #s of grapevines
- Overcrowding

Emerald Ash Borer

photo from D. Cappaert, MSU

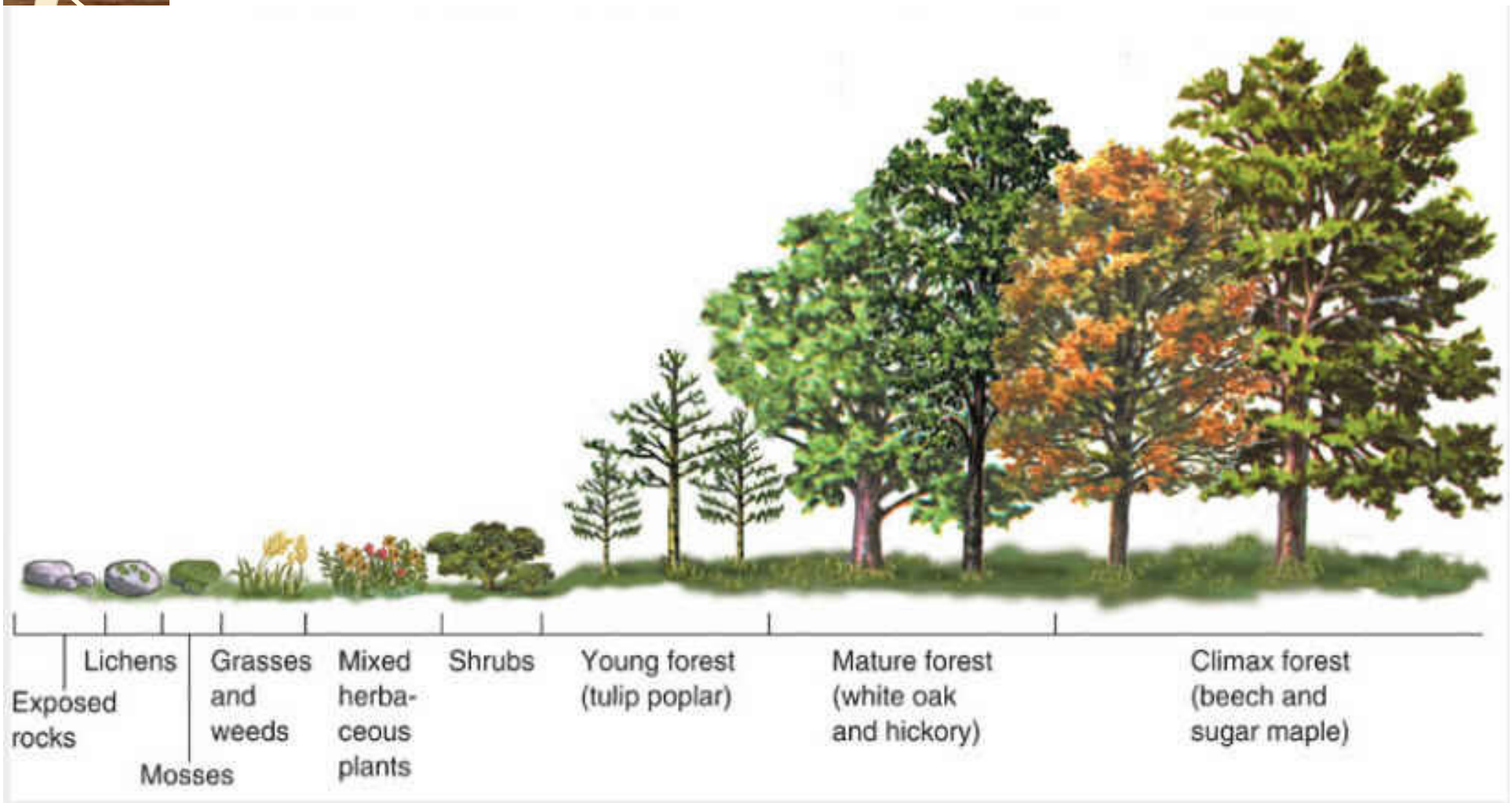


Woodland Management is primarily managing space and light.

We do this by:

- Controlling undesirable plants
- Thinning trees where density is high
- Harvesting trees to manage light/space and capture value
- Create openings and manage canopy density to favor diverse tree species regeneration and habitat types

Forest Succession



Shade intolerant trees invade open areas after major disturbance and grow quickly to occupy the canopy. Once the area is shaded, they can no longer regenerate.

Trees with intermediate shade tolerance may also be favored by disturbances - Oaks

Shade tolerant trees can reproduce in the shade of their own or other species. In the absence of disturbance they can continually replacing themselves.

Change in animal species generally follows the change in forest species and structure following disturbance

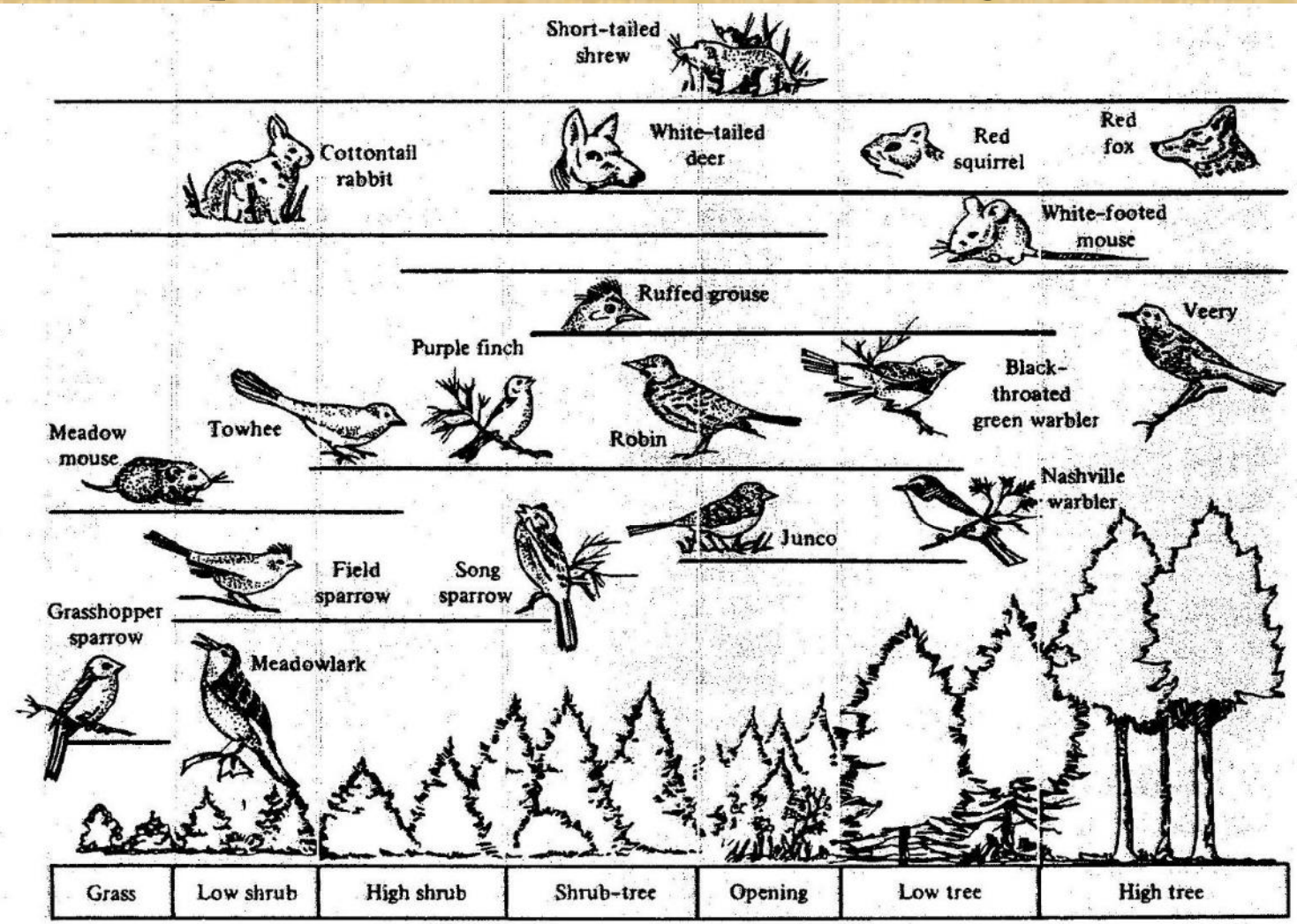


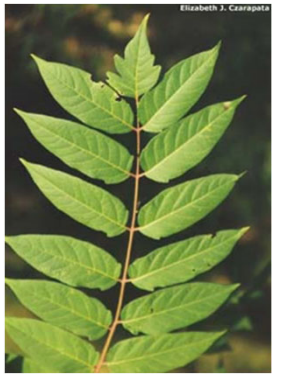
Figure 15.16 Sequence of animals associated with the stand cycle of pine plantations in central New York (after Smith, 1980). Species vary in the number of stages they are associated with. A succession of wildlife is found accompanying all plant successions. (Copyright R. L. Smith. Used with permission of the publisher and author.)

Invasive Plant Species in Woodlands

Garlic Mustard

Multiflora Rose

Japanese Honeysuckle



Tree of Heaven

Privet

Periwinkle

Asian Bush Honeysuckle

Winter Creeper

Winged Burning Bush

Japanese Barberry

Oriental Bittersweet

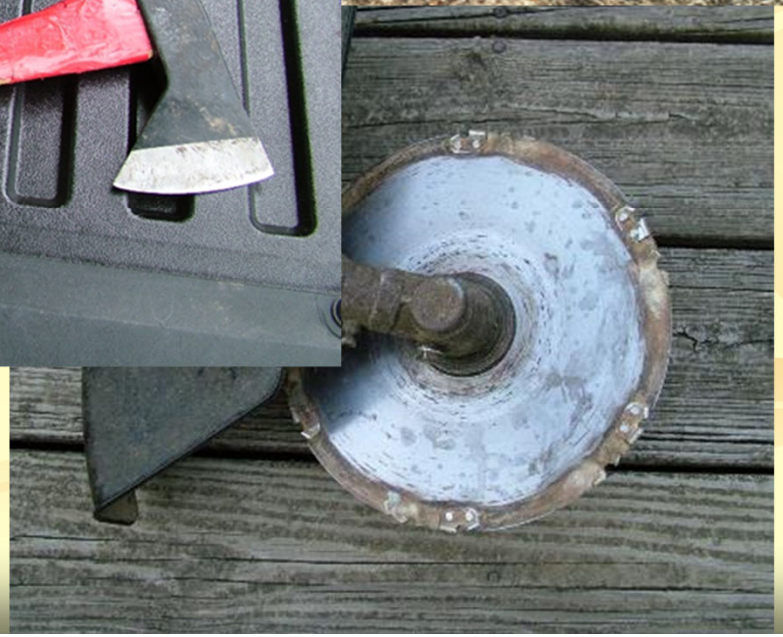
Autumn Olive

Invasive - Asian Bush Honeysuckle

Invasive – Callery Pear

James H. Miller, USDA Forest Service, Bugwood.org

Cutting, pulling, grinding



Cut Surface Herbicide Applications

Basal Bark treatment

- Garlon/Triclopyr 4 or similar ester herbicide combined with an oil carrier applied to lower 18 inches of stem.
- More expensive for materials, but no sawing or brush on the ground.
- Good method for killing tree-of-heaven
- May be less effective on trees over 6" DBH – increase treated stem area – beware warm weather volatility

Foliar applications are used to control smaller plants or to control sprouts the season after cutting or grinding

Timber Stand Improvement (TSI)

- Deadening some trees to provide space for more desirable trees.
- Cutting vines that may compete with desirable trees.
- Thinning some areas of desirable trees where more space is needed for continued vigorous growth.
- Creating and completing openings to regenerate new trees.

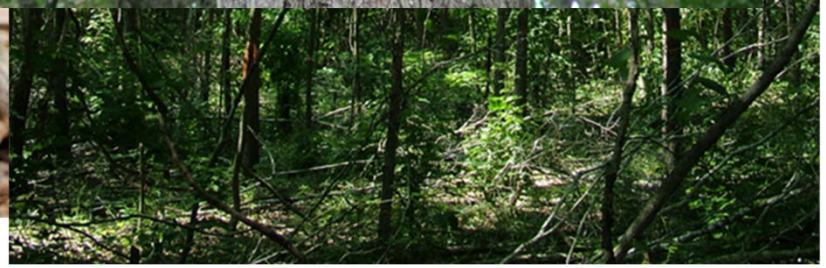
Grapevine control

- Cut and spray stump with Tordon or Garlon
- Spring – basal bark spray stem
- In heavy shade that will remain for 2+ years, herbicide optional

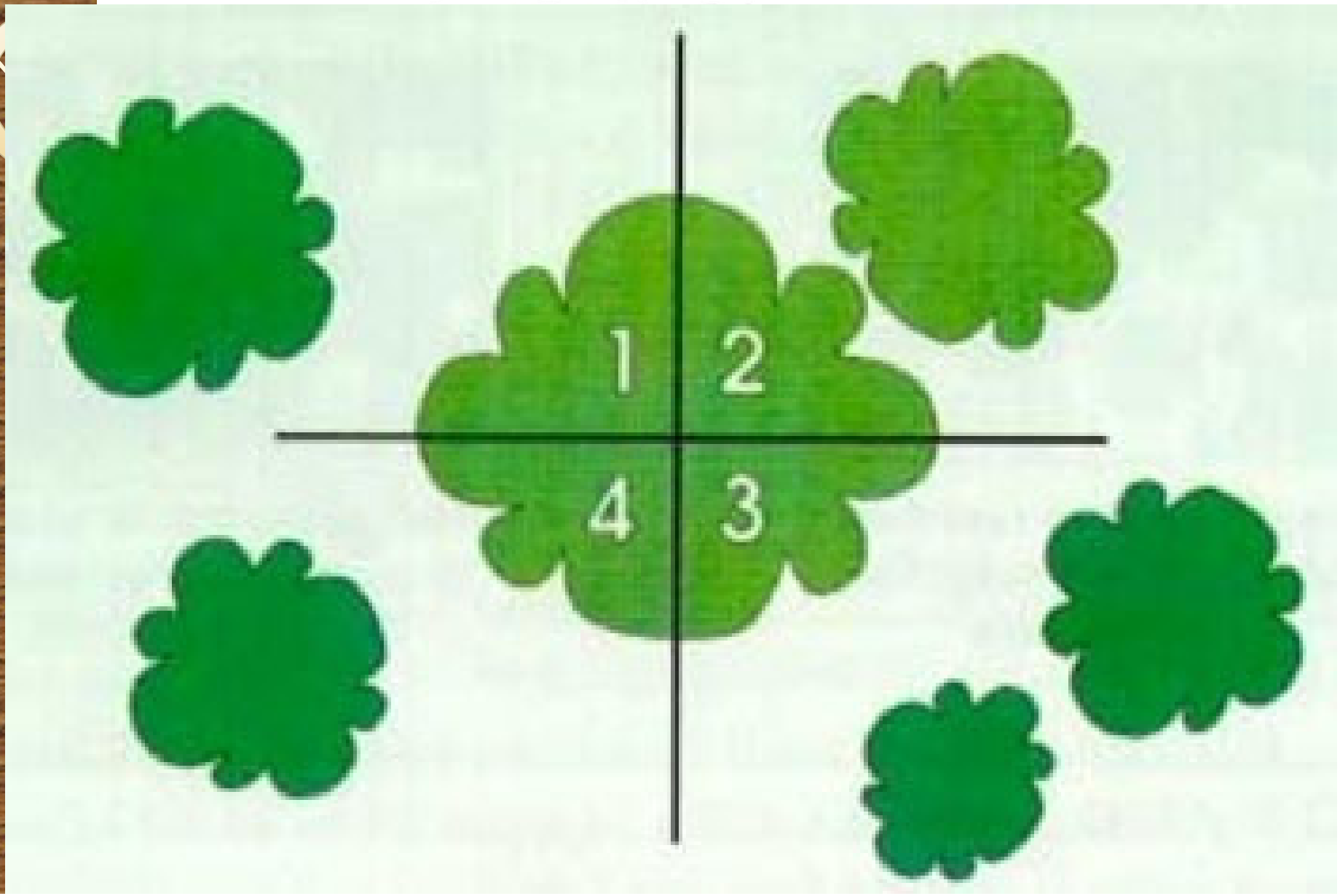

High density areas may benefit from thinning

TSI with a hatchet or ax, with (left) and without (right) herbicide. (Tordon RTU, Garlon 3A, Pathway)

Kill some trees to favor others



Crop tree crown release re-allocates resources to the favored trees



Some Handy Herbicides

Glyphosate – Roundup, Razor Pro, Glypro, ...

Foliar - Mix with water – 2-4% concentrate + water
Water quality! – hard water works against glyphosate.
Add 1 cup spray grade ammonium sulfate to
3 gallons water (or 17lb/100 gal). Add surfactant, MSO and dyes as needed.

Cut stump – on freshly cut stumps apply concentrate diluted with 25 to 50% water. This treatment must be on freshly cut surfaces and is most effective during the growing season. Beware early spring when sap is running strongly – herbicide will be flushed out.

Triclopyr – Garlon or Triclopyr 3A and 4, Vastlan, Pathfinder II …

3A, Vastlan (amine) is used for **girdling, frilling and cut stump** treatments or for **foliar** applications in water.
3A – cut stump or girdle/frill cut – undiluted or 1:1 with water

4 (ester) is for oil or mixed oil/water formulations – not labeled for girdle/frill applications
4 – **basal bark and cut stump** – 15-20% in oil – basal oil, kerosene, diesel oil – can volatize in high (85+) temps.

Tordon RTU, Pathway– pre-mixed formulation for **cut-stump and girdle/frill** applications. **Picloram and 2-4-D in ready-to-use formulas.**
This material can move in soil, so be careful with the volume and targeting of applications.

Not recommended near tuliptree!

If you buy the material in the quart applicator bottles, transfer it to a spray bottle or other applicator. The quart applicator tends to apply more material than needed.

The USDA may help you with your woodland management costs

- Cost-sharing may be available for TSI, invasive species control, pruning, planting, erosion control and many other conservation activities
- Contact your Natural Resources Conservation Service/ SWCD office

Finding Help

- **Indiana Division of Forestry**

  http://www.in.gov/dnr/forestry/

  Management advice for your property

- **Find private foresters**

  www.findindianaforester.org

  Forest management services

- **Purdue FNR Extension** has many forest and wildlife management references:

  https://www.purdue.edu/fnr/extension/

Invasive Species Info

- **Indiana Invasive Species Council: https://www.entm.purdue.edu/iisc/**
- **Purdue Extension resources: https://ag.purdue.edu/reportinvasive/**
- **Midwest Invasive Plant Network: http://mipn.org/ - control database**
- **Cost sharing programs from USDA https://www.nrcs.usda.gov**

Thanks for your time!
Questions?

Lenny Farlee, Extension Forester

lfarlee@purdue.edu

765 494-2153

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