

Existing Natural Areas: Considerations and Tools



The Woods In Your Backyard Program

UNIVERSITY OF MARYLAND
EXTENSION
Solutions in your community

What We Will Learn Today

- Managing existing natural areas
- Tools and equipment considerations
- Controlling invasive species

Improving Existing Natural Areas

- Forest health
- Wildlife
- Forest products
- Recreation & aesthetics



Designate land management Units

- Add units to hand drawn map or whatever type of map used.
- Tree identification basics

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



Activity 7, Page 23 - 24

Safety

- Hazardous trees
- Equipment
 - tractor
 - chainsaw



Rules For Chopping Your Own Wood

1. Never park down hill of a tree you are cutting.
2. When in doubt, park twice as far from the tree as the tree is tall.
3. Just because you live within driving distant of a forest, does not make you a Lumber Jack.
4. Always use the neighbors truck.



Leave Dead Trees



- When cutting firewood leave the deadwood on the ground. It provided nutrients and habitat
- Cutting live trees allows you to change the species composition and structure of the woods

Thinning How Does it Work?

- Every tree needs (competes for):
 - Sunlight
 - Water
 - Nutrients
 - Growing Space
 - CO2
- Light is usually most important



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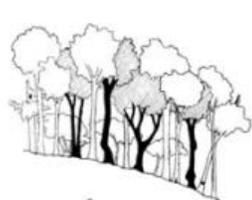
Thinning

- Reduce density of trees (**Timber Stand Improvement**)
- Reduce competition around desirable trees (**Crop Tree Release**).
- Done to favor residual trees, utilize harvested trees.
- Can be commercial or noncommercial




Thinning Trees Rule of Thumb – Pg 71

- Estimate DBH of trees in forest area
- Multiply by 2
- Number of feet between trunks of remaining trees
- EXAMPLE - if the trees average 5 inches in diameter, the desired spacing would be 10 feet.
- If wildlife is a major objective, add 2–4 feet to the spacing



Crop Tree Management What is It?

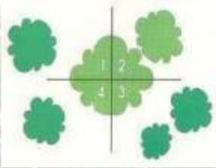
- Focuses on
 - Selecting & releasing individual tree canopies
 - Goal is to maximize space around chosen trees
- Based on
 - Goals & objectives
 - Tree growth & biology
- Concentrate growth potential on desired trees

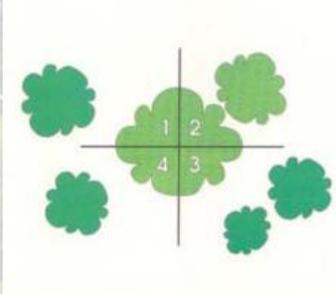
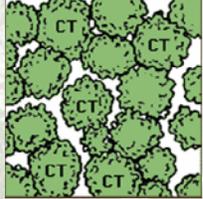


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Crop Tree Management

- Objectives can be firewood, lumber, aesthetics, wildlife, etc
- Crop Tree Release
 - Good for younger woods
 - Select "crop" trees
 - Number can vary
 - Release (Free To Grow) on 3-4 sides
 - Concentrates/accelerates growth




The center tree has space to grow on three of the four sides

How to Visualize Change....




Mark the trees to cut and then stand back and imagine how it will look when done....

Diameter growth increases with crown release




Assessing Competition Among Trees

Activity 10 – Page 38

The "Release" answer was shown before. You've included the directions for filling out the answer sheets which have been used in Block V for the class. Before the answer competition starts we can see how the Release method the results of this activity are. Table B which matches Table B (p. 38) in Block V, which you will complete. You will fill in the remaining columns of Table B or one complete column (1)-(3).

Classify a crop tree into one of the following categories:

4 Major crown form management categories: release, crown, and crown release. Each for trees that do not have signs of any and do not or have signs. Read underneath the tree and determine if there is signs signs around 1, 2, 3, 4 on 4 sides of the crown. In the answer sheet so that it is not missed. It shows a graph of outside day

to see side of the crown? Record your observations in the answer competition table before. Record the points you've earned on one side in each Release method management unit in the answer table. If the average number of signs side in each Release management unit in the answer table is less than 1, you should consider releasing to reduce competition on one side only. In the bottom part of the table below, answer "yes" or "no" in the question, "Is releasing recommended?" Answer "yes" if the average number of signs side per management unit is less than 1. How transfer your yes or no answer to Table B below under the column "Releasing recommended?" See "Further Read Department" (p. 11) for more information about this.

Tree	1	2	3	4	5	6	7	8	9	10
Management unit										
Signs										
Releasing recommended?										
Releasing recommended?										

Changing what will grow!

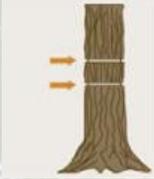
- Cutting
 - Immediate
 - Leaves the root system in place
- Girdling
- Chemically
- Combination






Girdling

- Hatchet or chainsaw
- Cut through the cambium
- Some species easier to kill than others.




Applying Herbicides to Individual Trees

Cut Stump Application




50% mixture of roundup
Use a good ax



Controlling Vines

- Cut at base of tree
- Herbicide usually not needed
- Vines will dry out and fall apart
- Remove from dominant trees. Keep some vines for wildlife






Swedish Safety Brush Ax

Harvesting Your Woodland

Forests are resilient




Forest harvest in early 1900's and 60 years later

Protecting Forest Health

Impact of Disease, Insects, Weather

- Hurricanes and weather events – utilizing damaged & down
- Emerald Ash Borer – proactive harvest of ash trees
- Gypsy moth – reducing the amount of oak
- Asian longhorn beetle
- What is next?





Logging in Large-Lot Suburban Developments with a Good Forester





Small Clearcut:
now and after
10 years



Regeneration after
6 years

Regeneration Harvests

- Purpose is to promote the development and growth of young trees
- Correct an undesirable condition.



Young regeneration growing after a shelterwood harvest

Best Management Practices

Purpose – to reduce erosion and prevent or control water pollution resulting from actions which disturb soil.





Best Management Practices



Cleaning out culverts




Diverting water from road

Conclusions

- Take time to consider your objectives
- Desirable outcomes can be related to forest products, wildlife, aesthetics, water quality, recreational or a combination of each.
- You have a toolbox of techniques that provide many options.

Invasive Species



- What are they?
- General characteristics
- Why are they so bad?
- Control options
- Some specific examples

Invasive Species What Are They?

- Also known as exotic, non-native, or non-indigenous plants
- Alien to the ecosystem. Reduce
- Cause economic harm or environmental damage, or injury to human health
- Can be plants, animals, or other organisms
- Not all invasive plants are non-native



Invasive and natural species can take over.
Especially in early succession stages

Invasive Species General Characteristics

- Rapid growth and maturity
- Aggressively opportunistic
- Prolific seed producers
- Rampant vegetative spread
- Few natural enemies or predators
- Outcompete native species
- Once established, high cost to control



Invasive Species What Do I Do About Them?

- Step1: Learn to identify them
- Step 2: Plan and Assess Your Property
 - Prevention & Control (management)
 - Restoration of native plants
 - If already established, eradication is most likely not an option

Management unit	Thinning recommended? (yes or no)	Young trees present? (yes or no)	Broken or dead? (yes or no)	Exotic/Invasive? (list names)
1	yes	yes	no	tree-of-heaven, multi-stem rose, wild grapevine
2	no	yes	no	tree-of-heaven, wild grapevine
3	yes	no	yes	no
4	n/a	no	no	garlic mustard
5	n/a	n/a	n/a	low grass

In many cases, control can only be achieved by using herbicides as part of an integrated approach.

A combination of mechanical, chemical, environmental, and biological methods.

Best to control invasives before you open the canopy and let in more light

Herbicides Basics

- Understand the Most control problems can be addressed using
 - Glyphosate (Roundup) – post-emergent – most home stores
 - Triclopyr (Garlon) – pre-emergent – only available in 2.5 gallons
- Use a backpack sprayer – calibrate it!!!
- Spray at proper time of year
- Many county weed departments will do herbicide spraying on larger areas for a fee.
- Educate yourself...get a private herbicide applicators license!



Invasive Species Control Options

- Mechanical
 - Hand-pulling, cutting, mowing
 - Targeted grazing - goats
- Chemical
 - Herbicides
- Environmental
 - Create conditions in which the plant cannot survive
 - Habitat conversion
- Biological
 - Insect
 - Microbial pathogen



Common Invasive Species Ailanthus

- Aka:
 - Tree-of-Heaven
 - Heaven wood
 - Stinkwood, Stink Tree
 - Paradise Tree
- Introduced in late 1700s from China as an ornamental
- May be confused with sumac or black walnut



Common Invasive Species Ailanthus

- Highly aggressive
 - Disturbed sites
- 300,000 seeds annually
- Prolific root sprouter
- Allelopathic
- No wildlife value
 - Minimal timber value



Common Invasive Species Ailanthus

- Control
 - Mechanical
 - Limited hand pulling
 - Chemical is most effective
 - Foliar < 2"
 - Basal 2" – 6"
 - Cut stump > 6"
 - Environmental
 - Reforestation



Common Invasive Species Multiflora Rose

- Introduced in 1860s from Asia
 - Ornamental
 - Erosion control
 - Living fence
 - Wildlife habitat
- Perennial
 - Flowers: May - June
 - Rose hips: Sept. – Oct.
- Common on formerly grazed areas



Common Invasive Species Multiflora Rose

- Means of spread
 - Seed – favored by wildlife
 - Layering
- Forms dense thickets
 - Chokes out desirable vegetation
 - Impenetrable
 - Highly competitive for water and nutrients



Common Invasive Species Multiflora Rose

- Control
 - Mechanical
 - Responds well to:
 - Cutting
 - Mowing
 - Grubbing
 - Repeat treatment necessary
 - 3 – 4 times per year
 - 2 – 6 years
 - Chemical
 - Glyphosate
 - Cut stump or foliar
 - Environmental
 - Rx burning
 - Re-establish desired ground cover



Other Common Invasive Species Vines – Oriental Bittersweet




Other Common Invasive Species Vines – Japanese Honeysuckle

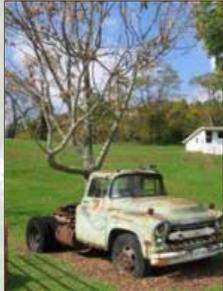



Invasive Species Final Thoughts.....

- Make them a priority
 - Get them under control before you implement other projects
- Get a private herbicide applicators license.
- Be vigilant – learn to recognize them in all life stages
- Annual effort
- Integrated Vegetation Management



Invasive Species Questions or Comments?



Now What? Let's Plan A Project!



What history are you writing?



Choosing Projects

Page 36-37 of Workbook

Identify and Rank Your Objectives

	Potential objectives	Rank potential objectives
Natural area improvement		
I want a greater field or lawn to plant in trees	X	1
I want to manage weeds and/or invasive species	X	
I want to improve the health of my natural area		
I want to improve forest regeneration, tree establishment		
I want an area to grow faster		
I want to not damage dead or damaged trees	X	
I want to not view that are struggling and/or weighing down my trees	X	
Other		
Forest products		
I want to not be forced to harvest or clear		
I want to start a forest products enterprise for fun and a side extra income		
Specific categories of interest		
Other		
Wildlife habitat demands		
I want to create some range for songbirds and other cavity nesting animals		
I want to create a well edge between my lawn and forest to improve wildlife habitat demands	X	
I want to provide some shelter and/or food for wildlife	X	
I want to have more regular and sunlight	X	2

Use the worksheet to identify a few project ideas that fit your objectives

Make a Timetable – Spell out Details

Page 38-39 of Workbook

Management unit	Goal	Project description <i>Provide details and specify any activities</i>	Priority	Start date	Proposed completion date	Who will do it?	Cost estimate
10-acre	convert to forest	Use Roundup herbicide on the grass in the fall before planting in the spring. Use trees and shrubs that flower and/or have great fall color and/or produce wildlife food to enhance space in forest of species. Seedlings will include yellow poplar, black, white, red oak, black cherry, and white pine. Order bare root seedlings from state nursery in late fall. Plant on a 10' x 10' spacing in this 10-acre area (100 trees). Build a low shelter and a wooden stake around each seedling to protect it from deer browsing. Scatter the grass between the rows with herbicide in the summer after planting, if needed. Note between the rows until forest canopy closes because of herbicide establishment risks.	1	late fall	end of spring	mostly Tim with help from Ellen	\$1500 for plants, \$1200 for Roundup herbicide and herbicide, \$500 for shelter and stake material, \$500 for stakers and stakes of \$4-\$5 each.
4-hectare area	plant a riparian forest buffer to help protect water quality in Oak Creek	Plant 10 sap and shrubs (100) recommended for riparian buffers throughout area currently in tall grass and thorny shrubs (1 acre). Plants will include river birch, green ash, sycamore, red maple, dogwood and burbankian. Use tree shelters as described above. Mow grass before planting and frequently thereafter until forest established. Do not use herbicide near to the stream.	2	next fall	end of following spring	mostly Tim with help from Ellen	\$600 for plants, \$2,000 for tree shelters and stakes.

Using the worksheet and other case studies as examples come up with one or two projects with details.

Activity Review



- Each person picks a project(s) based on their interests - Use Activity 14 for ideas – Pg 24 of workbook).
- Each person fills out Activity 15 (pg 27) for their project idea. When all are done share your projects and provide feedback.

Note: Case studies with filled out worksheets are provided for the Lees and the Rothmans on pages 105-119.

- If time allows a willing person in each group can share their project idea with the class.