

## Managing Forested Wildlife Habitats



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### What management activities are “right” for a given property?

There is no one “right” way to manage any piece of land...



What is appropriate is determined by:

- Your management objectives
- Growing conditions of your property
- Current and potential condition of your forest

Must find a balance between your objectives and the capacity of the land

## FOREST MANAGEMENT OBJECTIVES

### OBJECTIVES OUTLINE

GOALS	Degree of Importance			Remarks
	High	Med	Low	
Recreational Use	X			*Town would like to expand community use of the property. Also improve/extend the trail and path network, and promote a variety of uses. Some areas off-limits to motorized vehicles.
Woodland Access		X		*Town does not want to incur high expense in an expanded road system, but would like access for recreation and fire protection
Wildlife Habitat Enhancement	X			*Town would like to manage and enhance wildlife habitat for broad variety of species.
Forest Health and Productivity	X			*An increasingly healthy, productive, and valuable forest is a result of silvicultural management.
Timber Income Current Long Term		X X		*Timber income is generated as a result of implementing the recommended silvicultural practices. Trees are not to be cut for the sole purpose of generating income, but for forest improvement or wildlife management purposes.
Forest Education	X			*Establish interpretive trail(s). School use of Town Forest. Occasional educational tours for townspeople.
Aesthetics	X			*Townpeople value the forest's natural beauty. They would like to see large trees as well as a diversity of species. Forest improvement work must be done to the highest quality standards, with short-lived visual impact.
Forest Protection	X			*Maintaining the large open-space block, of which the Town Forest is an integral part, is important to the town for conservation (water quality, wildlife, forest) and to help "stabilize the tax base".

A written list of objectives  
is a helpful tool

It's important to know  
what you are trying to  
accomplish...

*Before you begin  
your management*





Your first call should be to:

## UNH Cooperative Extension

- County Extension Foresters



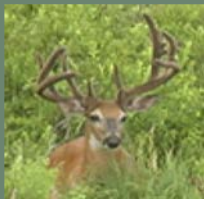
Available to meet with landowners  
free-of-charge and help them:

- determine their objectives
- provide basic assessment of property resources
- identify opportunities for improving or creating those resources
- provide recommendations for meeting objectives
- provide referral to private consulting foresters

Cooperative Extension contacts: [www.nhwoods.org](http://www.nhwoods.org)

## Managing your land for wildlife

Managing for a specific species or group of species



deer



game birds



song birds

Managing to provide habitat for a variety of wildlife species





### Managing for a specific wildlife species

Need to know what food and cover the animal requires in each season:



seeps



green fields



hard mast



roosting sites



winter food

Goal is to provide each of these habitats on your land or, manage your property to provide habitats not available on neighboring properties

### Managing for a diversity of wildlife species



Each wildlife species has its own set of requirements for the food and cover it needs to survive

## Managing for a diversity of wildlife species

Manage your property to compliment surrounding properties to provide as many different habitat options as possible



forested habitats



wetland habitats

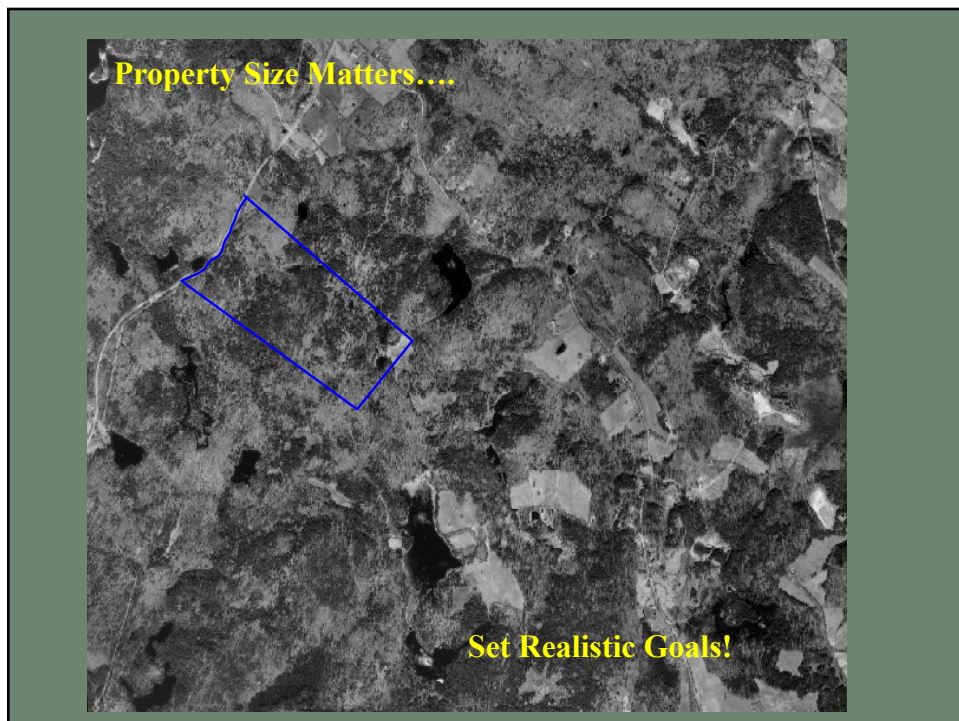


fields and old-fields











## Structural Layers of Your Forest

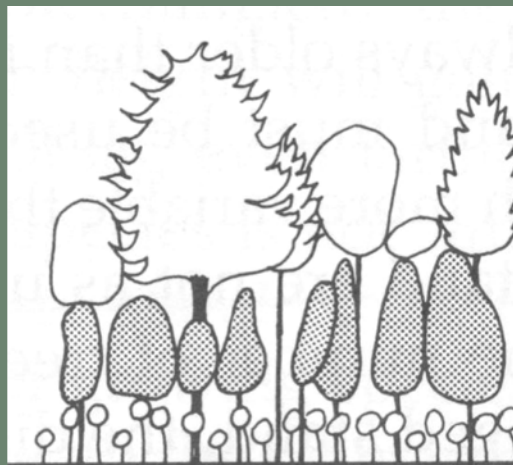
Check it out: The forest on your property has different layers

overstory (above 30 feet)

mid-story (10-30 feet)

shrub layer (2-10 feet)

ground cover (0-2 feet)

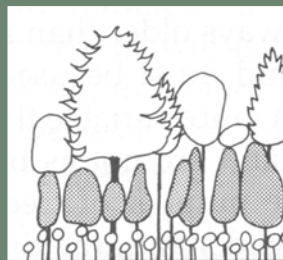


Wildlife species respond to the presence/absence of each layer

## Managing for a diversity of wildlife species

Wildlife uses different layers of your forest

Maintaining all layers across a property encourages a diversity of wildlife species that use forest habitats



Can use timber harvesting to create, enhance, and maintain each of these layers on a property



Canopy



Mid-story



Shrub layer



Ground cover

## Can we manage for timber and wildlife at the same time?

I prefer to coordinate habitat improvement projects with a commercial timber sale whenever possible



- can sell timber to pay for wildlife improvements
- can treat a larger area more effectively
- can utilize harvested trees
- have skilled workers and large equipment

I recommend strongly that a consulting forester is hired to help plan the timber harvest to ensure that all of your objectives are being met

**A carefully planned timber harvest can improve cover and food opportunities for wildlife**

## Forest Openings



- Trees are removed in “groups” or in small patch-clearcuts
- Purpose is to create an uneven-aged forest...
- Encourages each of the different forest layers across a property



## Forest Openings



Openings can be as small as 1/10 acre...

...or larger than 3 acres in size

The landowner's objectives and size of the property often dictate what size openings are appropriate





## Where to Create Forest Openings



poor-quality hardwoods

## Where to Create Forest Openings



poor-quality hardwoods



Removal of poor-quality trees doesn't result in loss of future timber value

Openings regenerate into a combination of herbaceous and woody plant species



## Where to Create Forest Openings

poor-quality hardwoods



Encourages new browse for deer, moose, and rabbits...

provides cover, nesting and feeding opportunities to song birds and small mammals...



provides feeding opportunities to a variety of predators including hawks, foxes, and snakes

## Where to Create Forest Openings



Aspen/poplar stands



### Where to Create Forest Openings



adjacent to  
powerline corridors

Maximizes the size of the right-of-way and benefits many wildlife species that require young forest openings



## Where to Create Forest Openings

### Field Edges



Can encourage a diversity of fruit-producing shrubs and herbaceous plants

Improves cover and feeding opportunities on the edge of the field

May provide habitat for a variety of wildlife that require "old-field" habitats



## Where to Create Forest Openings

Create 1/4 to 1 acre clearcuts on wetland edges



upland → transition → wetland

Different plants grow back in each of these zone across the opening









## Where to Create Forest Openings

- always look for opportunities to release fruit producing shrubs in the shrub layer



Remove over-topping trees to provide sunlight to fruiting shrubs

## Where to Create Forest Openings



Most wildlife shrubs that you might purchase and plant can be encouraged to grow on their own!

### Where to Create Forest Openings



to release apple trees

### Forest Roads as Openings











## Snags and live cavity trees











**Table 1.**  
**Minimum tree diameters for cavity-using species** (From Tubbs et al 1987, Harrison 1975)

<b>&lt;8"</b>	<b>&gt;18"</b>
Black-capped chickadee*	Wood duck
Downy woodpecker*	Common goldeneye
Boreal chickadee*	Hooded merganser
Tufted titmouse	Common merganser
House wren	Turkey vulture
Winter wren	Barred owl
Eastern bluebird	Pileated woodpecker*
	Silver-haired bat
	Gray squirrel
	Red squirrel
<b>6-12"</b>	Porcupine
Northern saw-whet owl	Marten
Hairy woodpecker*	Fisher
Yellow-bellied sapsucker*	Long-tailed weasel
Red-breasted nuthatch*	
White-breasted nuthatch	
Brown creeper	
Chimney swift	<b>&gt;24"</b>
Southern flying squirrel	Little brown bat
Northern flying squirrel	Big brown bat
Ermine	Gray fox
	Black bear
	Raccoon
<b>12-18"</b>	
Eastern screech-owl	
Three-toed woodpecker*	* Primary
Black-backed woodpecker*	cavity
Northern flicker*	excavators
Great crested flycatcher	
Northern long eared bat	
Indiana myotis	



How many snags are enough?



Good Forestry in the Granite State:

6 snags/acre, 1>12", 1>18"

Leave cavity trees & snags uncut whenever possible

A few large diameter trees are as valuable as many smaller trees

Retain variety of tree types

Retain snags in multiple locations

## Coarse Woody Material



Fallen trees provide important cover and feeding opportunities for wildlife

## Coarse Woody Material



Small mammals use fallen logs for nesting/denning and as cover from predators

Northern redback salamanders spend most of their lives under fallen logs



Spotted salamanders and wood frog breed in vernal pools in the spring and spend most of the year in uplands under cover objects like fallen logs



## Coarse Woody Material



Predators such as coyotes, foxes, and fisher hunt around fallen logs

Pileated woodpeckers feed on insects in rotting logs and stumps



Black bears eat ant larvae found in logs and stumps

## Coarse Woody Material

Management usually involves avoiding damaging fallen logs with equipment



Allowing some trees to grow old, large, and die to become woody debris

Logs over 24" diameter most valuable to wildlife

## Hard and Soft Mast Production



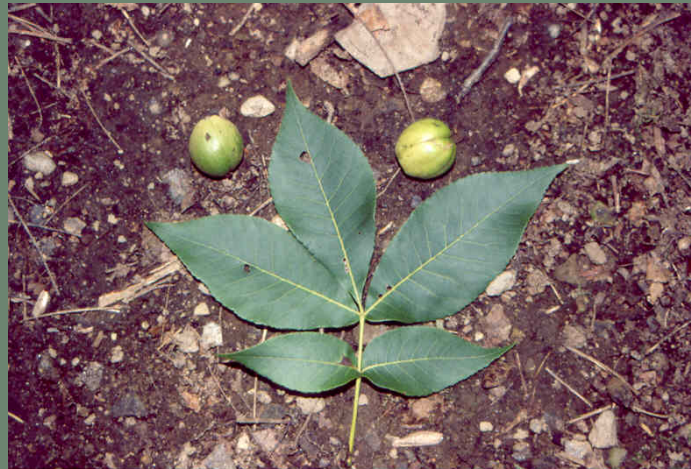
red oak

white oak





beech



hickory





white ash



cherry

## Maintain



## Diversity!

## Mast Production



Management involves identifying the largest trees with the healthiest crowns...

...provide those trees room to expand their crowns by removing two or more of their competitors

Often the best timber trees will be great fruit or nut producers

## Mast Production

To maximize mast production of trees:

Mast producing trees must be allowed to attain optimum age and diameter required for greatest mast production

<u>Species</u>	<u>Optimum age</u>	<u>Optimum diameter</u>
oaks	50-200 yrs	18-20" dbh
beech	>60 yrs	>14" dbh
hickory	60-200 yrs	>18" dbh
ash & maple	>50 yrs	>14" dbh
cherry	30-100 yrs	>10" dbh

## Managing timber and wildlife habitat

Retain trees that show evidence of past use by wildlife



Clawing on beech trees by bears is a good way to identify the trees that produce good seed crops consistently



### Softwood Cover

Softwoods provide important year-round habitat to many wildlife species



Cover from hemlock, spruce, and fir is especially important to wildlife

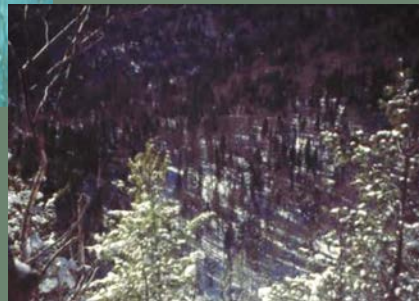
### Softwood Cover

Stands of dense softwoods provide important cover to deer during winter



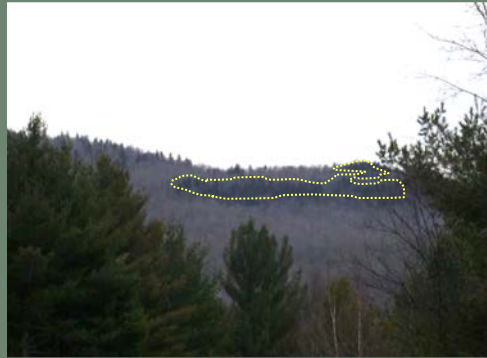
- softwoods trap snow above ground
- insulates habitat under softwoods
- reduces energy cost associated with walking

Need habitats where softwood crown closure is greater than 65%



### Softwood Cover

Softwood "inclusions" within hardwood stands provide cover for a variety of wildlife species



A single hemlock tree within a hardwood stand can increase the number of wildlife species using the stand



Retain hemlocks whenever possible!

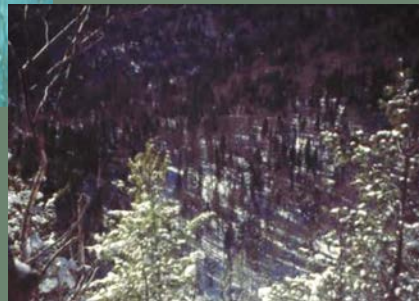
### Softwood Cover

Deer require dense softwood cover during winter in New Hampshire



- softwoods trap snow above ground
- insulates habitat under softwoods
- reduces energy cost associated with walking

Need habitats where softwood crown closure is greater than 65%



## Softwood Cover



These areas often lack understory because the dense crown closure doesn't let enough light to the ground

Areas might be harvested to get more valuable tree species to grow

Retain pockets of softwoods as year-round cover for wildlife

Alright to harvest hardwoods within the softwoods

- provides browse within the cover
- small openings will encourage hemlock to regenerate





