Promoting Wildlife Diversity in Your Woodlot

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Started incorporating guidance for habitat management into forestry activities as it related to big game species

Then that expanded into small game

And furbearers

Then forest management started acknowledging the critical role of certain species (keystone species) e.g., species that create and use tree cavities

Slight modifications can maintain habitat for other species such as resident and migratory songbirds

Importance of downed wood and woodland pools

Immense value in maintain all the components of a healthy ecosystem


Spice of life
3-D trees
Do it right!
Golden oldies
Special places

Species specific approach to maintaining wildlife habitat is not feasible

Oak on oak sites and pine on pine sites
Proper silvicultural technique for the stand in question
Uneven aged stands using single tree selection for shade tolerant species like maple and beech
Group selection for mid to low tolerant species – yellow birch, oak
Shelterwood for white pine
Clear cut in jack pine, poplar, white birch


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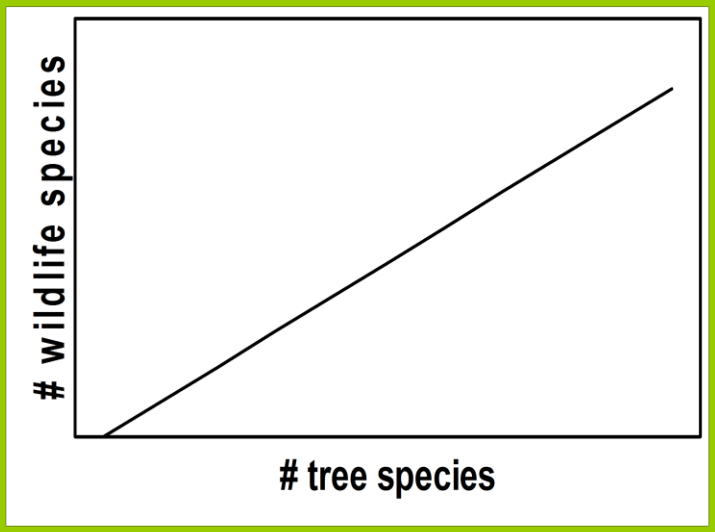
Diversity in:
Tree species and
Structure

The spice of life

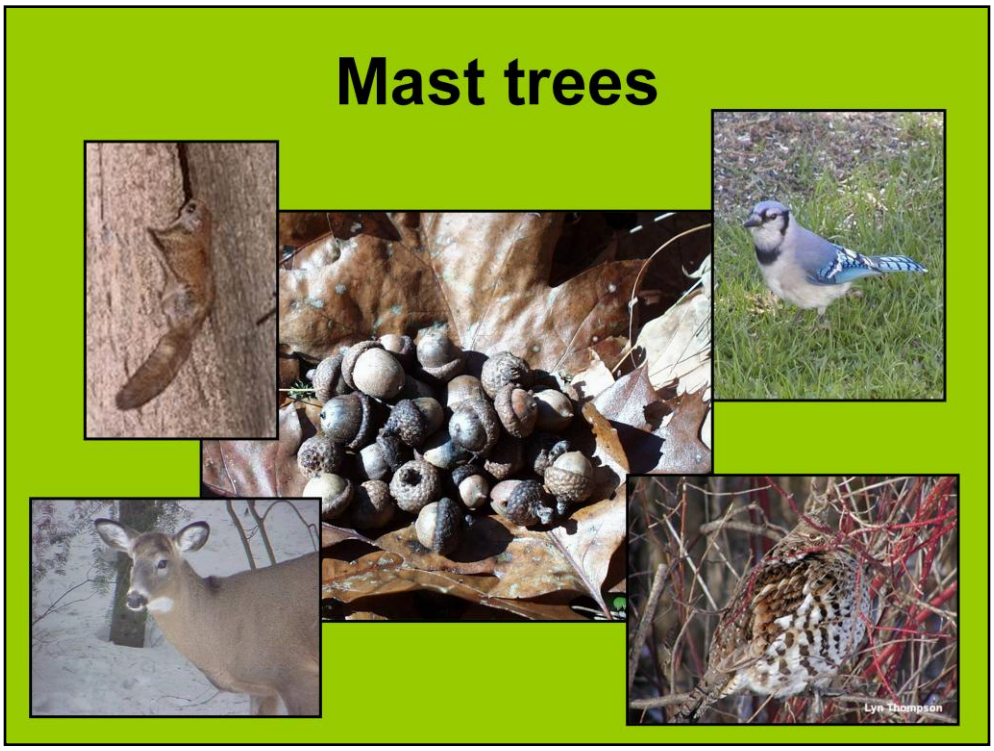


Some are spicier than others!

Mast trees

Scattered conifers

Mast trees are those that produce nuts or berries
Conifers scattered in hardwood stands



Mast tree provide forage for a wide variety of species and often have a large effect on productivity of wildlife species.

Talk about how blue jays help to distribute acorns and also help with regeneration by burying them – and jays are selecting the viable seeds which makes better quality. Obviously, acorns don't disperse well on their own!
Blue jays – can carry 4 acorns or 14 beech nuts

Leave the really spicy ones!

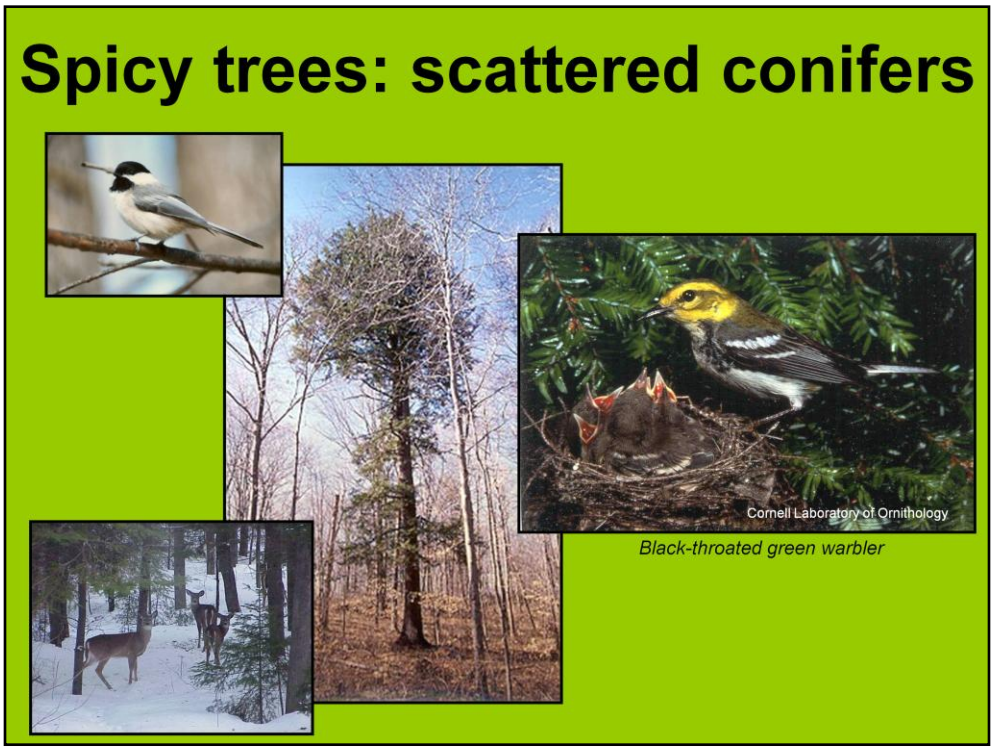
Oak
Beech
Cherry
Hickory
Basswood
Butternut
Walnut
Ironwood

Leave 10/ha

Leave the really spicy ones!

Healthy trees
Large diameter
Big crowns

Min 25 cm dbh but > 38 cm better (define dbh)



Speaker should talk about the history – why would this be?
-Hemlock high in tannin hence used in leather tanning – grows slow under canopy
-Pw – ship masts etc.

Who would use these trees?
-Shelter from rain and wind
-Safety from predators
-Food (seeds within cones)
-black throated green warbler – nests in trees
-less snow depth under conifers

Leave the really spicy ones!

Large, healthy

Hemlock
Red spruce
White pine
Cedar
White spruce
Balsam fir

10/ha with some clumping
25 cm dbh but 38+cm better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Decaying, dead, & downed

Critical component of forest ecosystems – recycling nutrients via decomposers, and provides habitat for a large suite of wildlife species

Aggressive stand improvement practices can greatly reduce the amount of dying and deadwood in forest stand

*Clean is great in your kitchen but not in a forest

There's life in dead wood

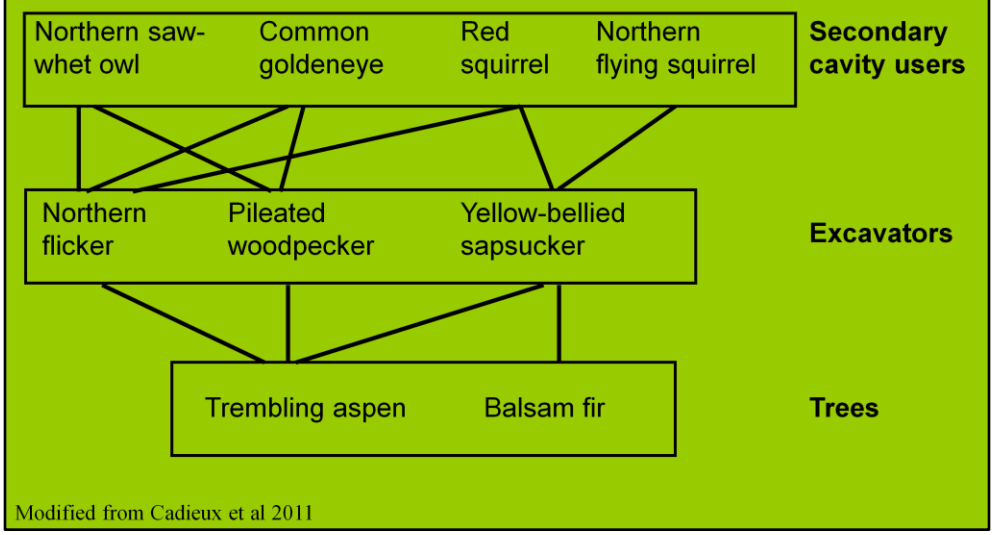
~ ¼ of all forest-dwelling species use cavities in standing trees

2 broad groups:
Excavators (Primary cavity users) – those who make their own holes
Secondary cavity users – those who use cavities but cant make their own holes (choose the smallest hole)

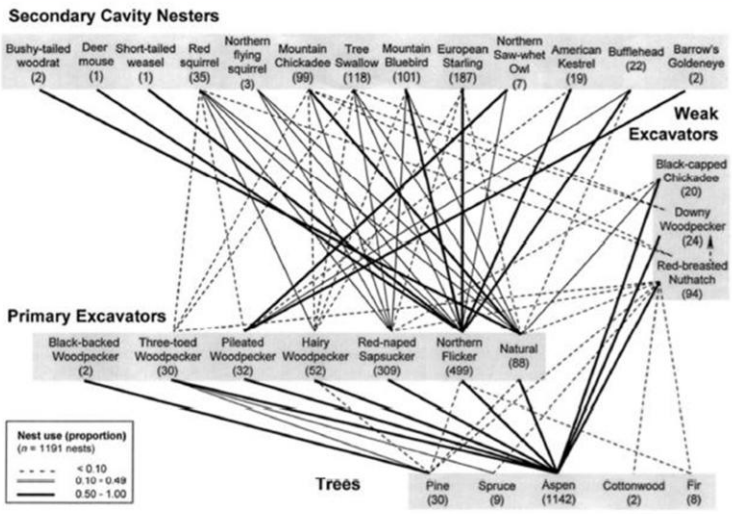
Secondary cavity users?
Answer: squirrels, fishers, racoons, ducks (wood, golden eye), owls (boreal, screech, saw-whet etc.)

Cavity tree nest web

Boreal mixed wood example



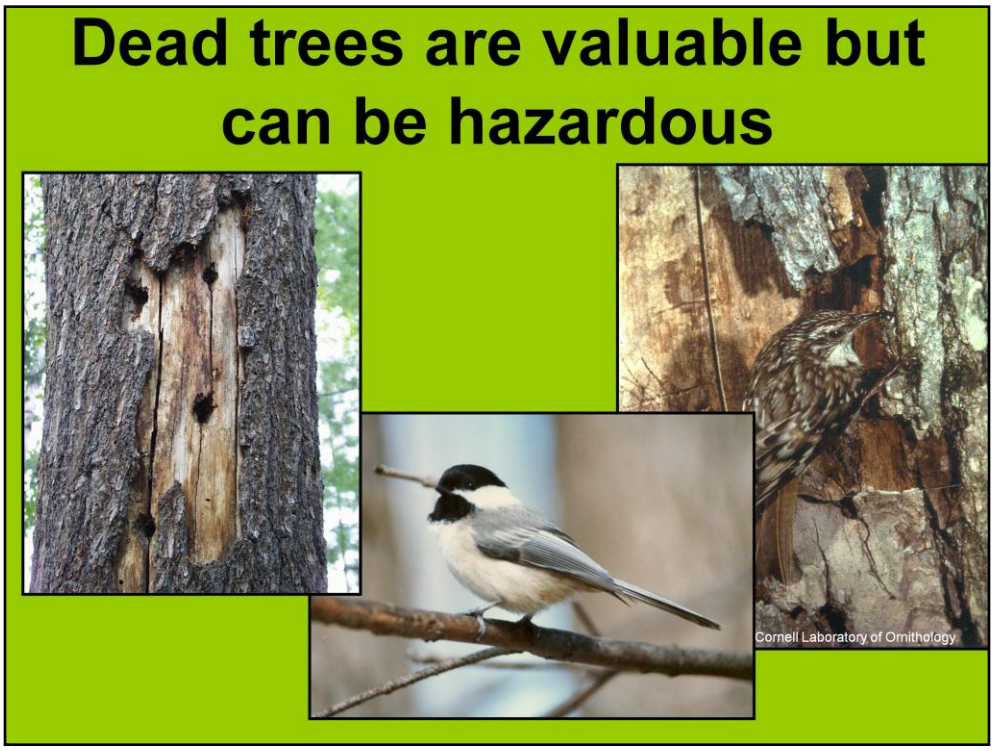
Modified from Cadieux et al 2011



Martin et al. 2004

Best cavity tree to leave?
Standing live trees

1) Excavated in live trees – know there is a cavity, useful for longer, round, dark behind
2) High natural cavities
3) feeding cavities – white behind, uneven edges
4) Trees showing signs of heart rot (e.g., conks) that will be cavity trees in the future



Weak excavators (can use dead branches in live trees) : black-capped chickadee, downy woodpecker
Species that forage under loose bark
Brown creeper builds little cup nests under peeling bark (often in live trees also)
** very cautious with these trees

Down but not out!

Clean is great in the kitchen, not in the woodlot!

-Structure, retain moisture (salamanders and others), stabilizes soil
-Nesting, denning, and overwintering sites, display site, raptor plucking perches, safe travel corridors (summer and winteer),
-Huge and diverse communities of beetles and other insects that require downed wood to exist. Most require a specific stage of decay and some appear to be limited to specific diameter sizes.

Leave downed wood!!!

Time to re-invest

Dead wood nutrient cycle:
Starts when -Dead wood is invaded by bacteria, fungi and other micro-organisms which initiate chemical change and produce nutrients (e.g. sugars) that invertebrates can consume.
While some invertebrates (particularly beetles) directly attack the unaltered wood itself, others thrive on the bacteria and fungi and the wood these organisms have altered.

**leave dead wood on the forest floor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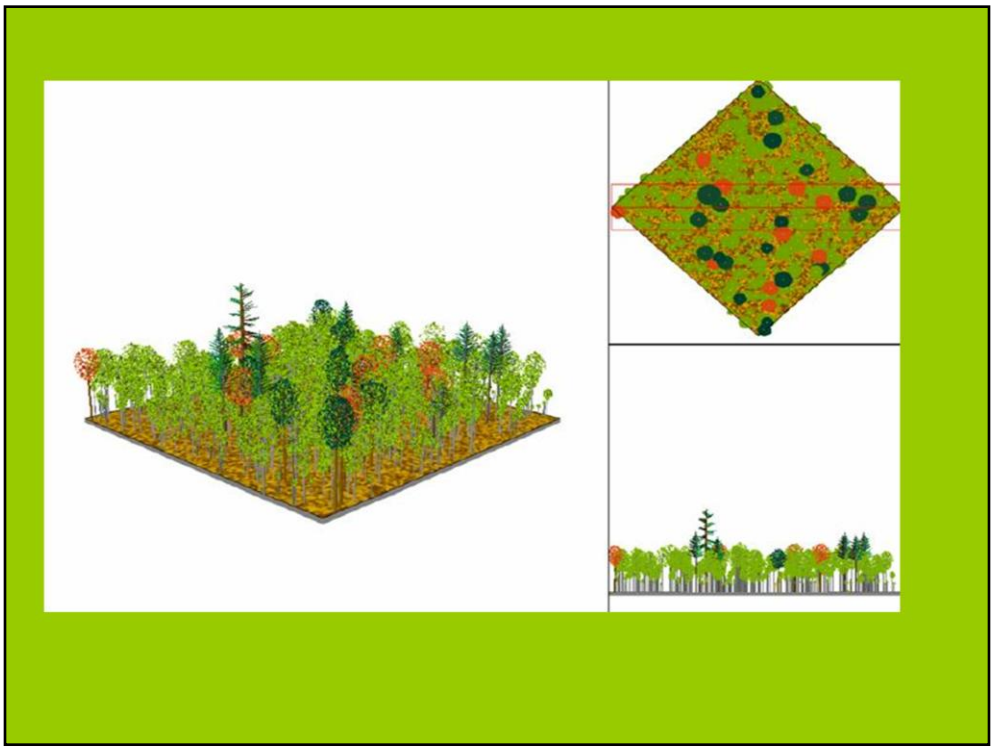
Supercanopy trees

They have very unique values. Bigger and older than everything else around them. Pw most well know but often oak as well.

Examples:
Eagles and ospreys can use them for roosting or nesting sites.
Brown creeper looks for insects in the crevices of the bark of very large trees.

They also have very significant social value.
1/4ha



Single-tree selection in tolerant hardwood:

-Pale green are trees remaining for silvicultural purposes
- Dark green trees with oval crowns = living cavity trees
- Orange oval crowns = mast trees
- Dark green with pointed crowns = scattered conifers
- Dark green very tall tree = supercanopy tree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Homes for big birds: stick nests

Secondary users: great horned owls, barred owls, great grey owls, merlins
None of our owl build their own nests – use cavities or other's nests

Bushel basket rule

Once you find one what do you do?
Large vs small nest (>=75 cm in diameter)
Bird that build large nests are more likely to re-use nests (years to decades), and
More likely to be reused by other species of birds.
Big nests – Os, Ea, He, in forest,: goshawk, red-tailed hawks, ravens,
Small nests – broad-winged hawk, sharp shinned hawk

Small nests: leave nest tree
Large nest: leave nest tree and 20 m around it undisturbed
Uncommon raptors and owls: Ea, Os, He, NOGO, RSHA, GGOW – SSG for how to maintain habitat to increase likelihood of reuse

If you find one nest there are likely others !!

Woodland pools

Not fed by streams, they are depressions in forest floor that fill up with water in the spring when the snow melts or during to heavy rains.
Alternating periods of flooding and drying (some species reproductive cycle relies on this)
Not good for fish, but good for other species that don't like to breed with fish.
What types of species would use these pools?

-obligates = blue-spotted salamanders, wood frogs, fairie shrimp

*Analogy to sea monkeys –
Summer vs winter eggs
Let their eggs dry out over the summer and when the water comes back they will re-hydrate and the eggs will hatch
Some hatched after 15 years of desiccation
Viable after 99 deg C to -190 deg C
Winter eggs usually hatch within 30 hrs with exposure to water

Great website: "Ontario vernal pool association"
(Biologically significant pools generally > 500$m^{2)}$
It is a race against time because the species need to breed, grow the eggs and hatch before the pool dries up.
Maintain forest canopy over the pools (within 3 m)
High crown closure (>=50%) of trees >10m tall within 15 m
If accidentally fell trees in pool, do not remove


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Website – look under forest management planning – forest management guides