TREES & BEYOND LTD

ALL YOUR TREES AND TRAINING NEEDS

MNRF CREW TRAINED IN TREE REMOVAL 2017 ALGONQUIN PROVINCIAL PARK

Forestry Technician Algonquin College
Internationally Certified Arborist
Provincially Certified Arborist
Provincially Certified Scaler
Ontario Utility Certified Arborist
Certified Trainer MTCU Cutter / Cable Skidder
Certified Trainer MTCU Mechanical Harvesting Equipment Operator
Certified Trainer MTCU Forestry Pit and Road
Industrial Class 1 Exterminator License
Pesticide Technician Certified Trainer with Landscape Ontario

A Proactive Approach to Property Management

An Arborist View Point On Proper Tree & Land Stewardship

Topic Discussion

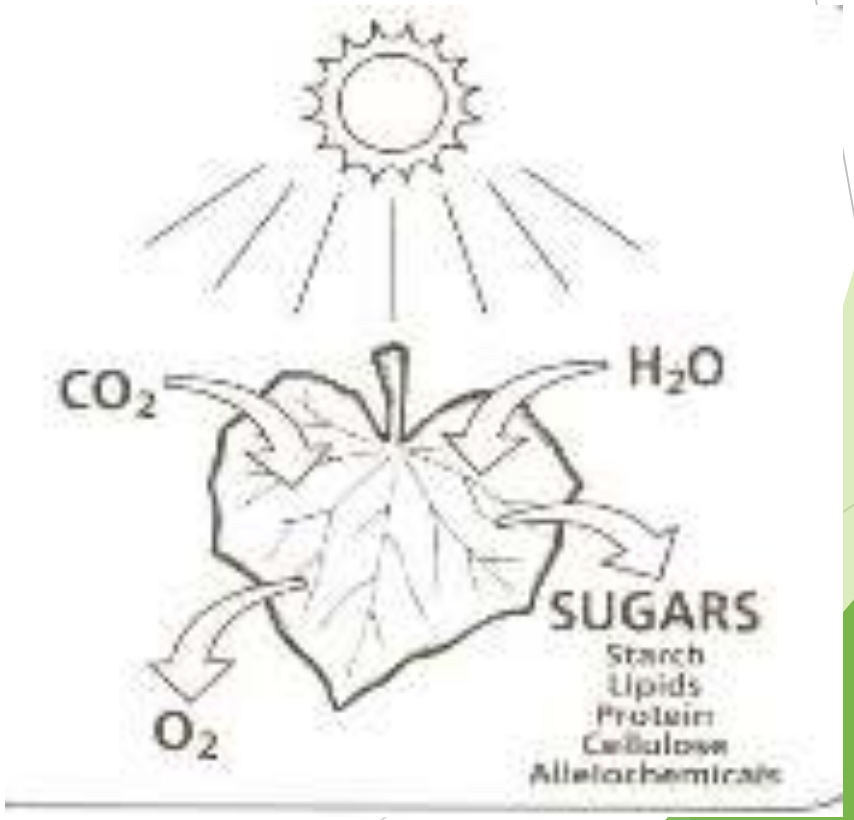
- Tree Biology How Do Trees Function
- How to Properly Prune a Tree using Approved Arborist Practices
- Proper Tree Management What to Look For
- Arboriculture and Canadian Law

TREE BIOLOGY

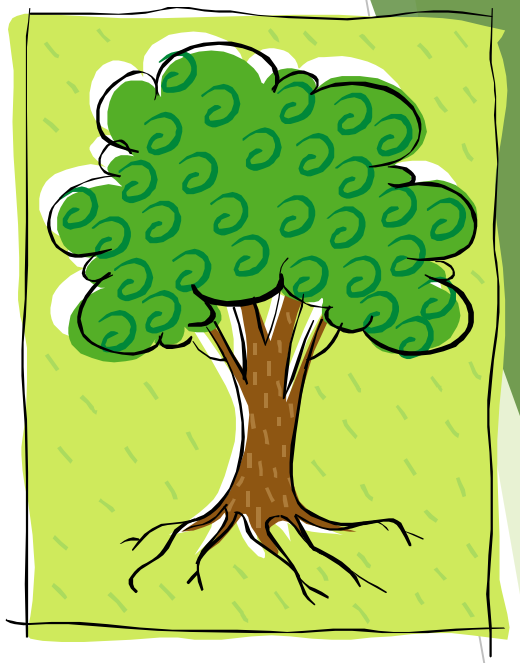
Photosynthesis

- Photosynthesis occurs principally in the leaves, although in some species it may occur on the stem as well

Chlorophyll is the chemical responsible for photosynthesis, and is found in formed bodies called chloroplasts within each leaf cell



ROOTS

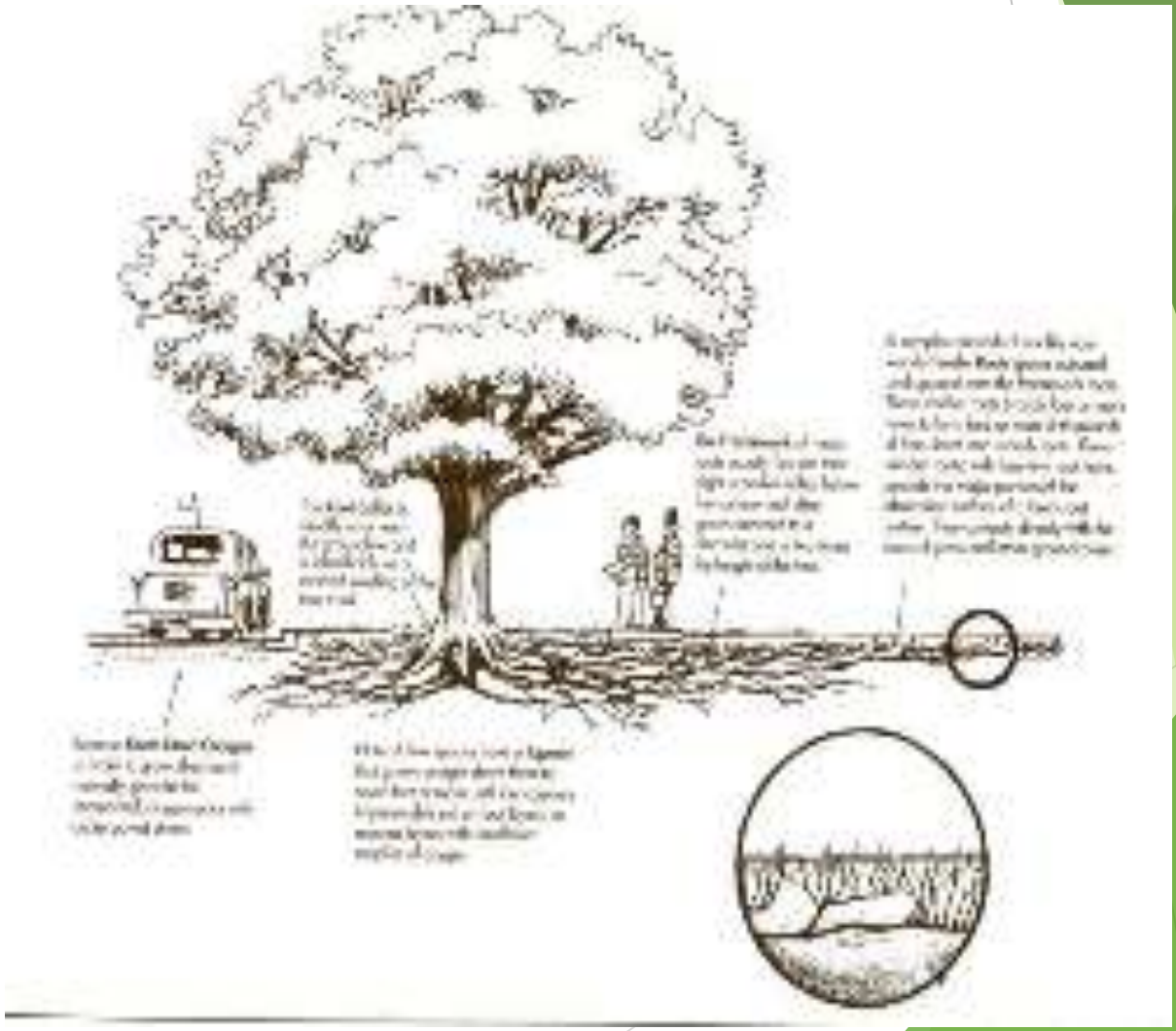


Roots have several functions:

- anchorage for the tree,
- absorb minerals from the soil,
- conduct minerals in solution to the stem and crown and food from the stem and crown to the growing areas of the roots,

Root Growth

Roots of trees grown in the open often extend two to three times the radius of the crown.



Absorption

- Absorption of minerals in solution occurs in the root system and is the primary function of root hairs and younger parts of the root.
- Absorbing roots are located only 8 – 12 inches below the ground, all other roots extending below this are for anchorage.
- Soils require both Micro Pores filled with air and Macro Pores filled with H_2O

Transpiration: Upward Movement

- Transpiration is the loss of water in the form of vapour; basically an evaporation process. Water evaporates from the large foliar surface area.
- As water evaporates, more water is drawn up the tree from the roots.
- In this manner, sufficient quantities of water and mineral nutrients are made available to the crown

Transpiration: Upward Movement

- **Light** – the more light, the larger the stomatal opening, allowing more water vapour to escape
- **Supply of water** – stomata will close if the supply of water is reduced. Wilting occurs when the supply o0f water is greatly reduced
- **Plant factors** – such as leaf structure, orientation, leaf area and the health of the tree.

Storage of Materials

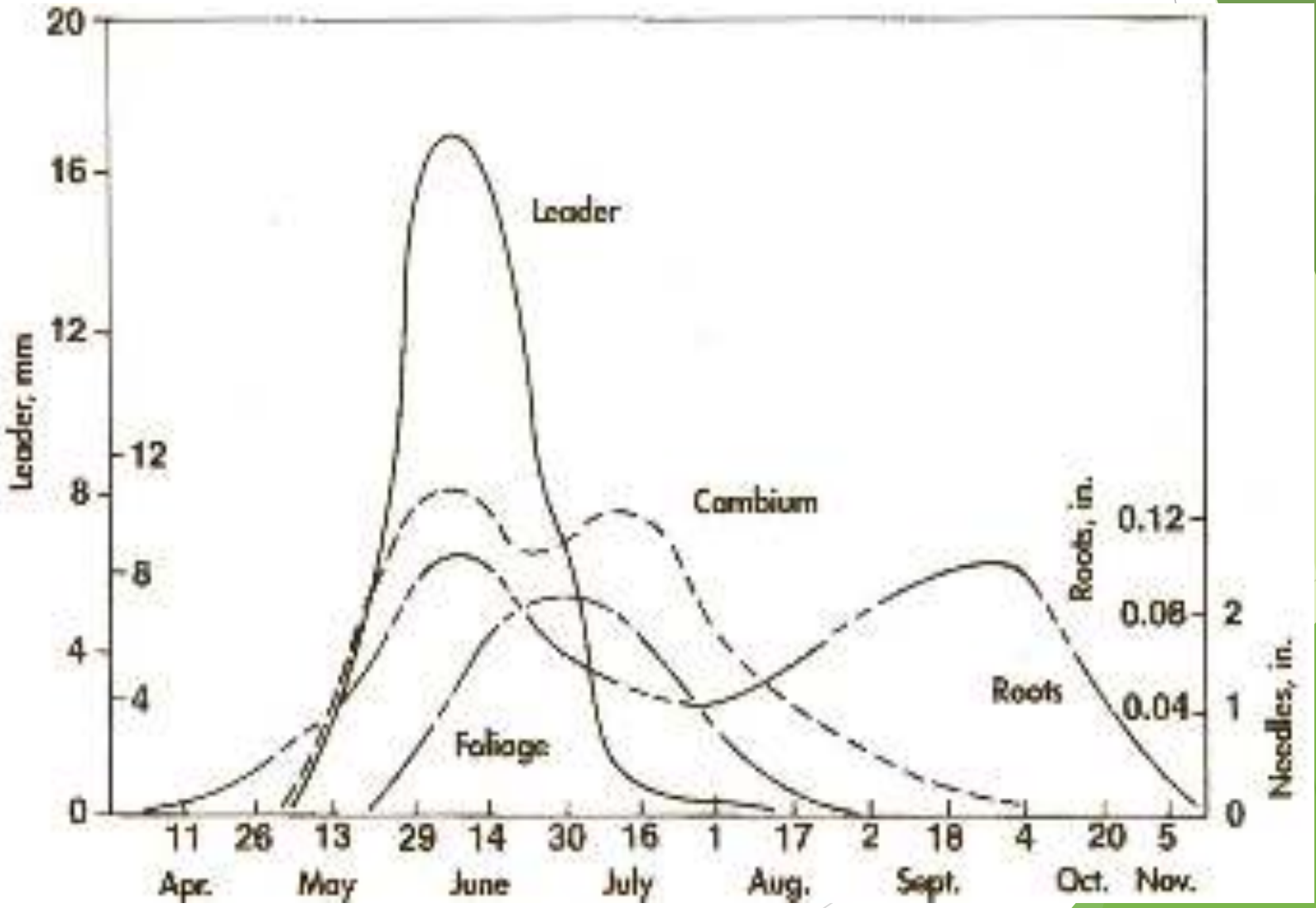
- Food materials in the form of carbohydrates (sugars and starch), fats, and proteins must be stored in the tree for use by growth organs and for respiration by other living tissues.
- Food is generally stored in living tissues; so storage is limited to the sapwood in the stem and live portions of roots and branches.

Desperation Crops

When a tree is severely wounded, under environmental stress or diseased, it will usually produce an abnormally large crop of suckers and/or seeds.

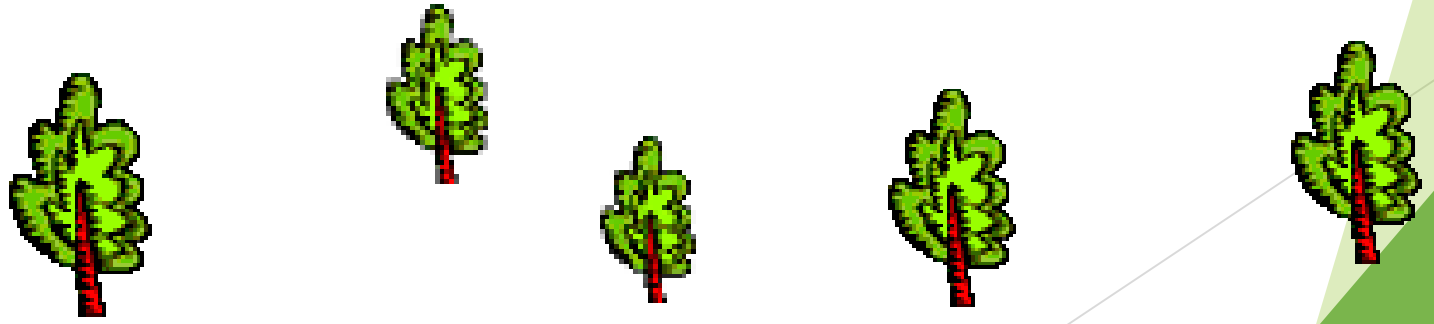
This is termed a "desperation crop" and is chemically induced by stress from the previous year.

Growth & Development



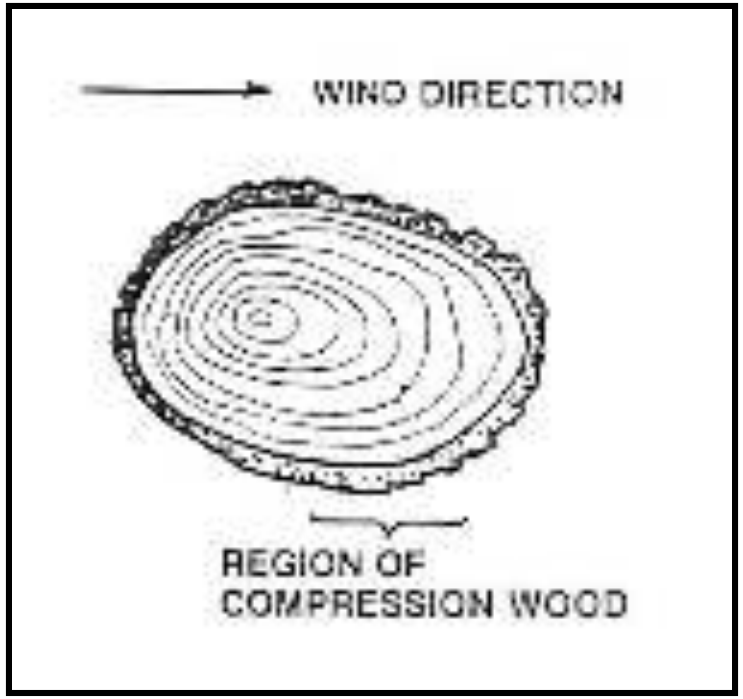
REACTIONWOOD

Trees respond to physical stress in many ways. The response of a tree to having a load imposed on it (prevailing winds, slopes etc) is to produce a specialized kind of wood, generally termed "reactionwood".

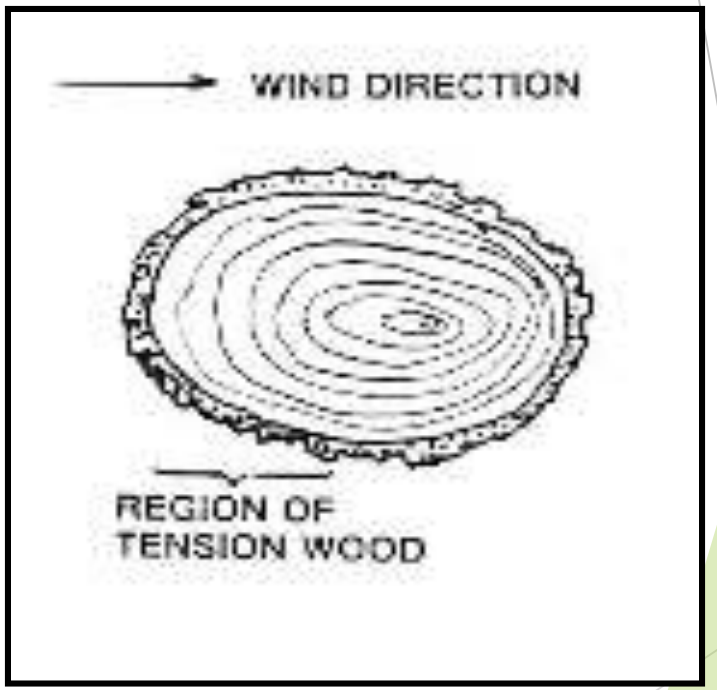


REACTIONWOOD

Coniferous



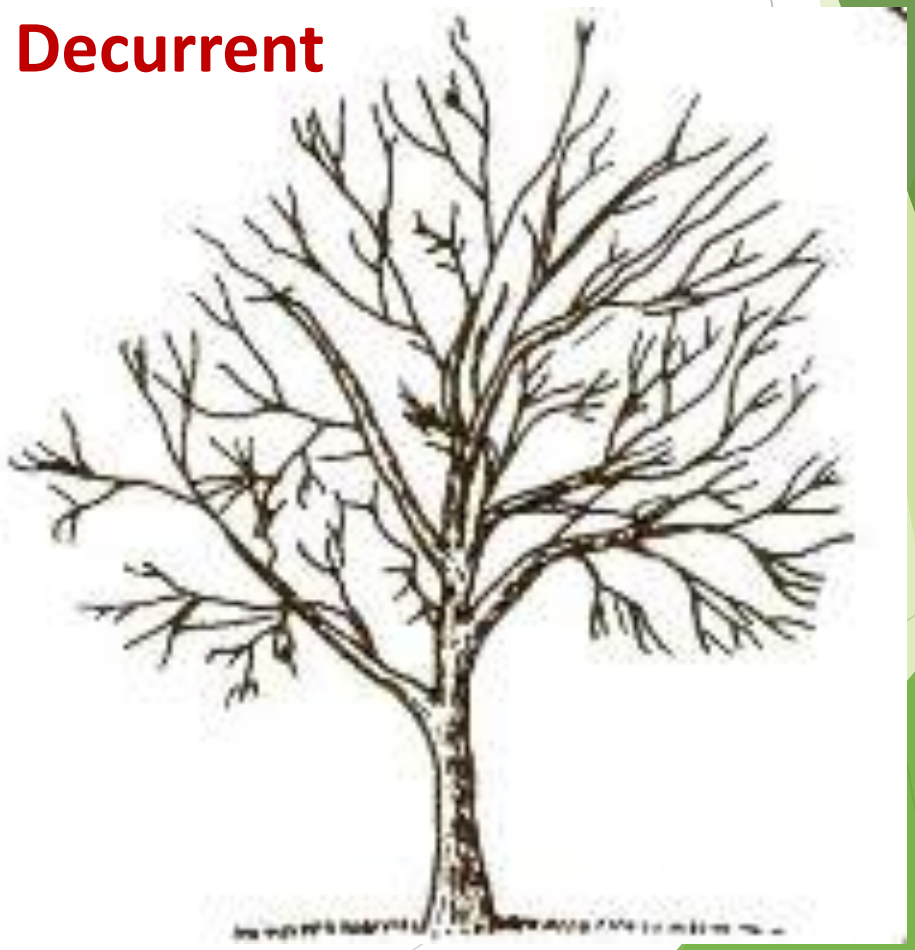
Deciduous



Decurrent & Excurrent Tree

Excurrent

Decurrent



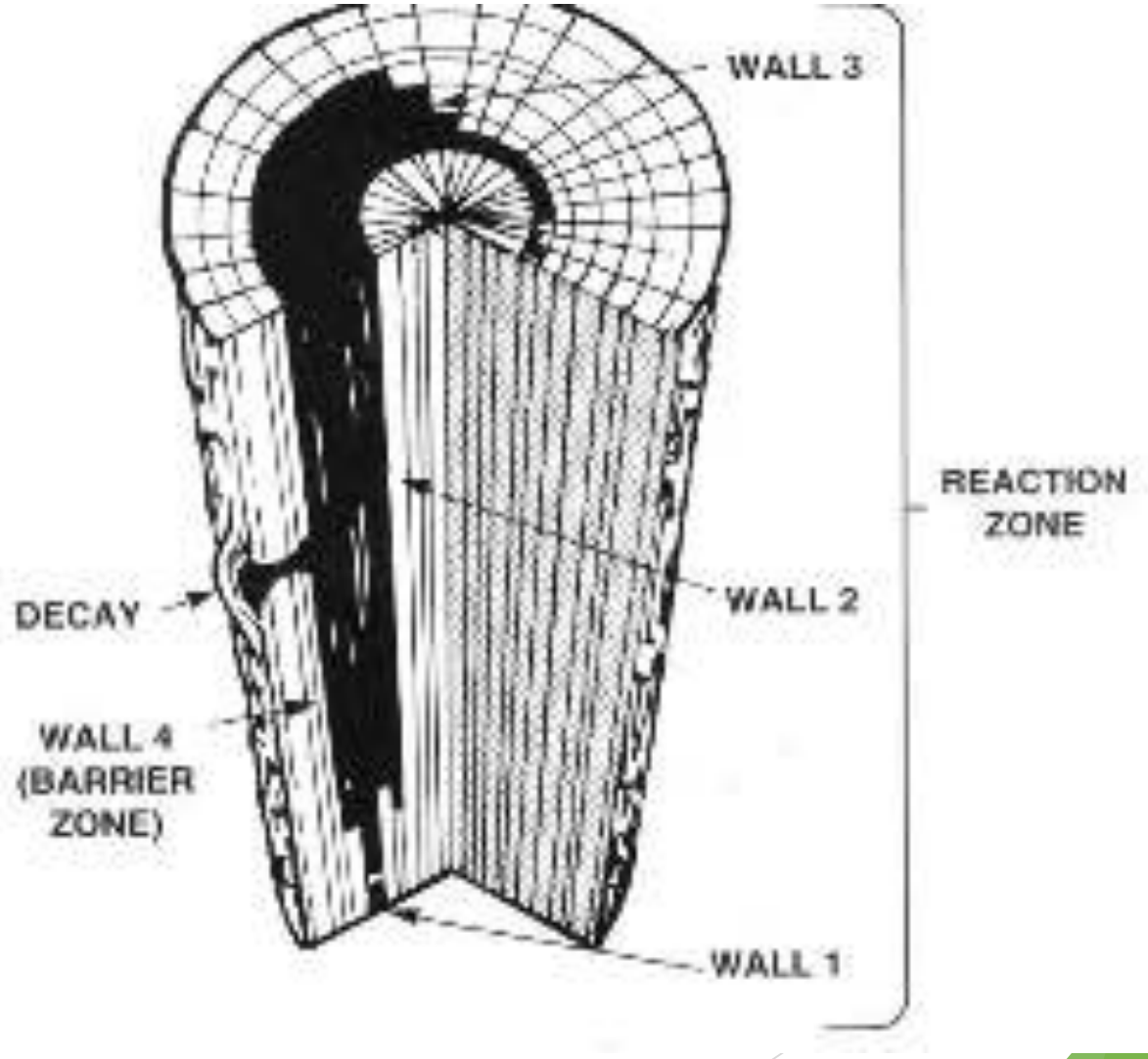
BARK

- Bark is the outer layer covering a tree's branches and stems
- It is a protective layer that moderates the temperature inside the stem, offers defense against injury and reduces water loss
- There are many types of bark develop in trees. Beech trees have very smooth bark with little corky material, whereas cork oak produces thick layers which is made into stoppers for wine bottles.

Compartmentalization

- When a tree is wounded, the injured and infected tissues are never replaced, repaired or restored to their previous healthy state.
- In this sense, tree wounds do not heal. Instead, trees wall off, confine, or compartmentalize the injured and infected tissues

Compartmentalization



Decay Resistance of Eastern Hardwoods and Conifers

Very Resistant

Black Locust
Osage-orange
Red Mulberry

Resistant

Black walnut
Bur oak
Cedars
Chestnut
Junipers
Other White oaks
Redwood
Sassafras

Moderately Resistant

Ashes
Elms
Honeylocust
Larch
Pines
Tamarack

Slightly Resistant

Black Cherry
Buckeye
Hickories
Red and Black Oaks
Sweetgum

Non-Resistant

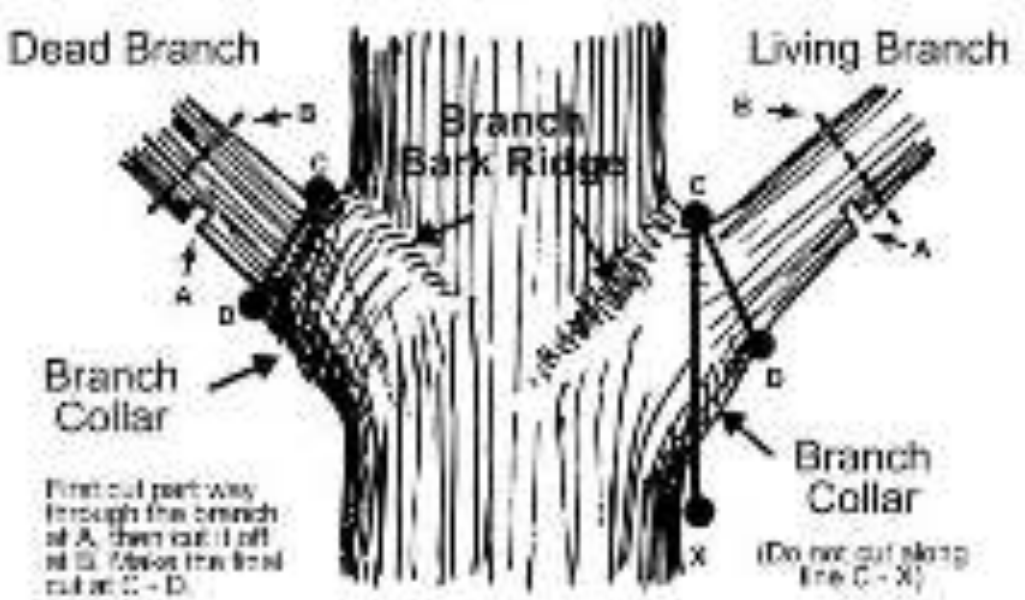
Aspen & Poplars
Basswood
Beech
Birches
Butternut
Catalpa
Cottonwood
Fir
Hackberry
Hemlocks
Horse Chestnut
Linden
Magnolia
Maples
Paulownia
Spruces
Sycamore
Tree of Heaven
Tulip tree
Willows
Yellow-poplar

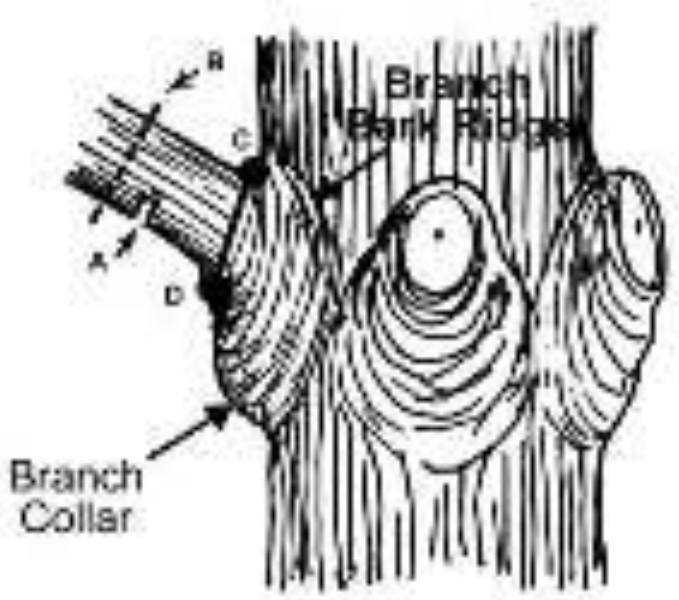
PROPER PRUNING OF TREES

CODIT

4 Most Common Types of Pruning

- **Crown Thinning** – selectively removing branches on young trees throughout the crown. This promotes better form and health by increasing light penetration and air movement. Strong emphasis is on removing weak branches. (Don't overdo it on mature trees.)
- **Crown Raising** – removing lower branches on developing or mature trees to allow more clearance above lawns, sidewalks, streets, etc.
- **Crown Reduction** – removing larger branches at the top of the tree to reduce its height. When done properly, crown reduction pruning is different from topping because branches are removed immediately above lateral branches, leaving no stubs. Crown reduction is the least desirable pruning practice. It should be done only when absolutely necessary.
- **Crown Cleaning** – the selective removal of dead, dying and disease wood from the crown.





Pruning Larger Branches

IMPROPER PRUNING CUT

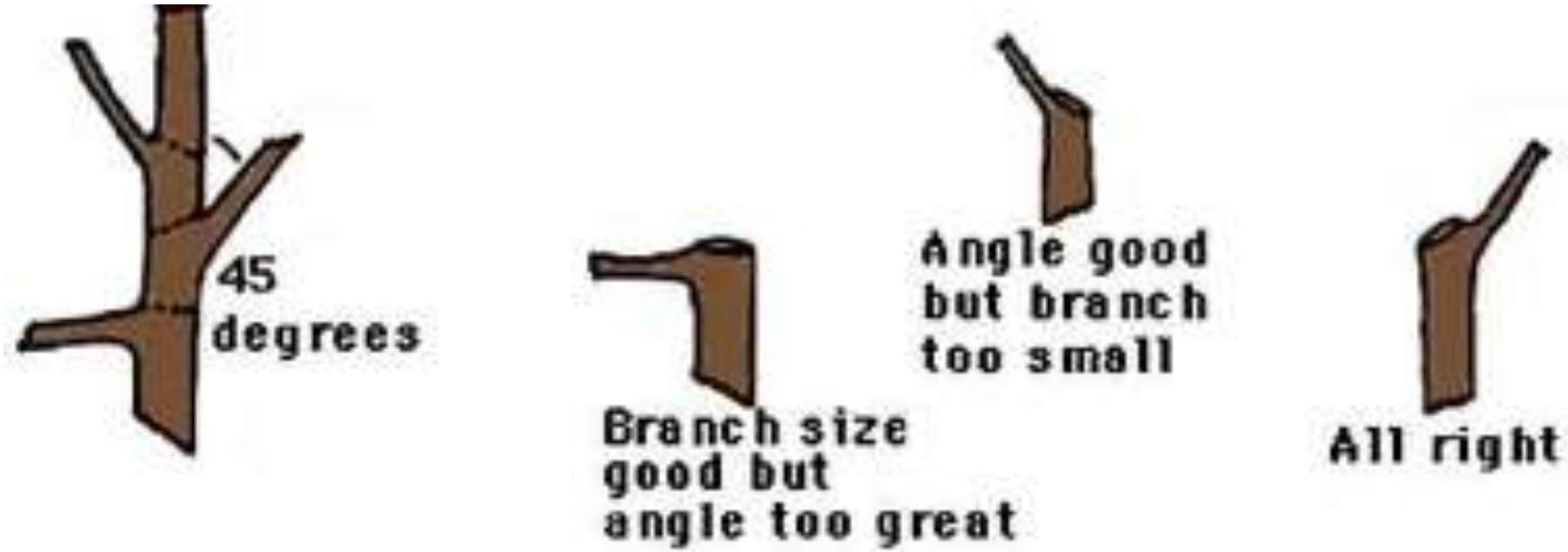


Figure 5. Pruning back to an intersecting lateral branch

Never remove anymore than 1/3rd of the parent diameter

Proper Tree Management What to Look For

Common mistakes that people make

Examine Every Tree Top to Bottom

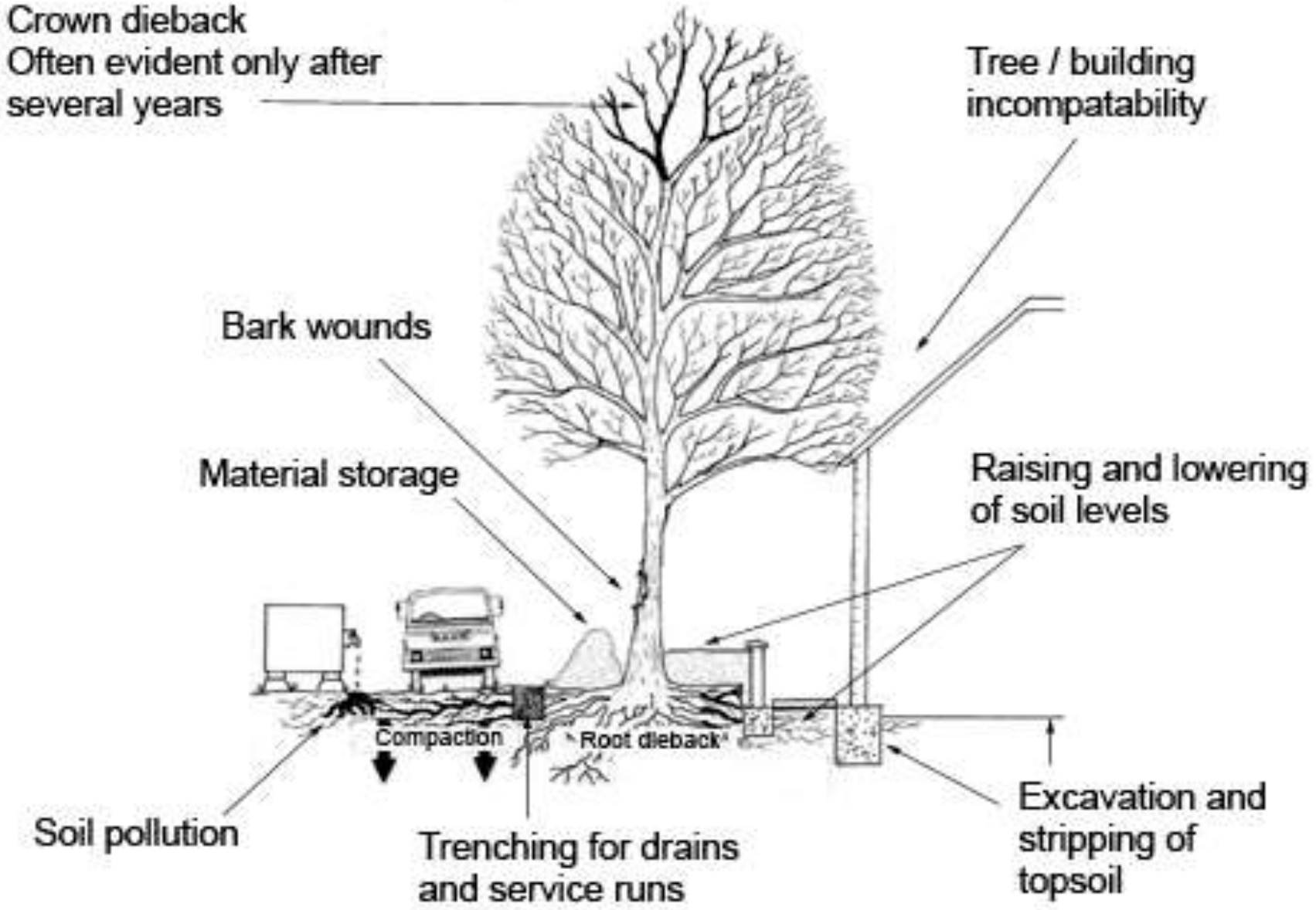
- Common defects
- 53% Included bark
- 25% Stem Defects
- 16% Dead Branches
- 13% Root Decay

Abiotic Disorders

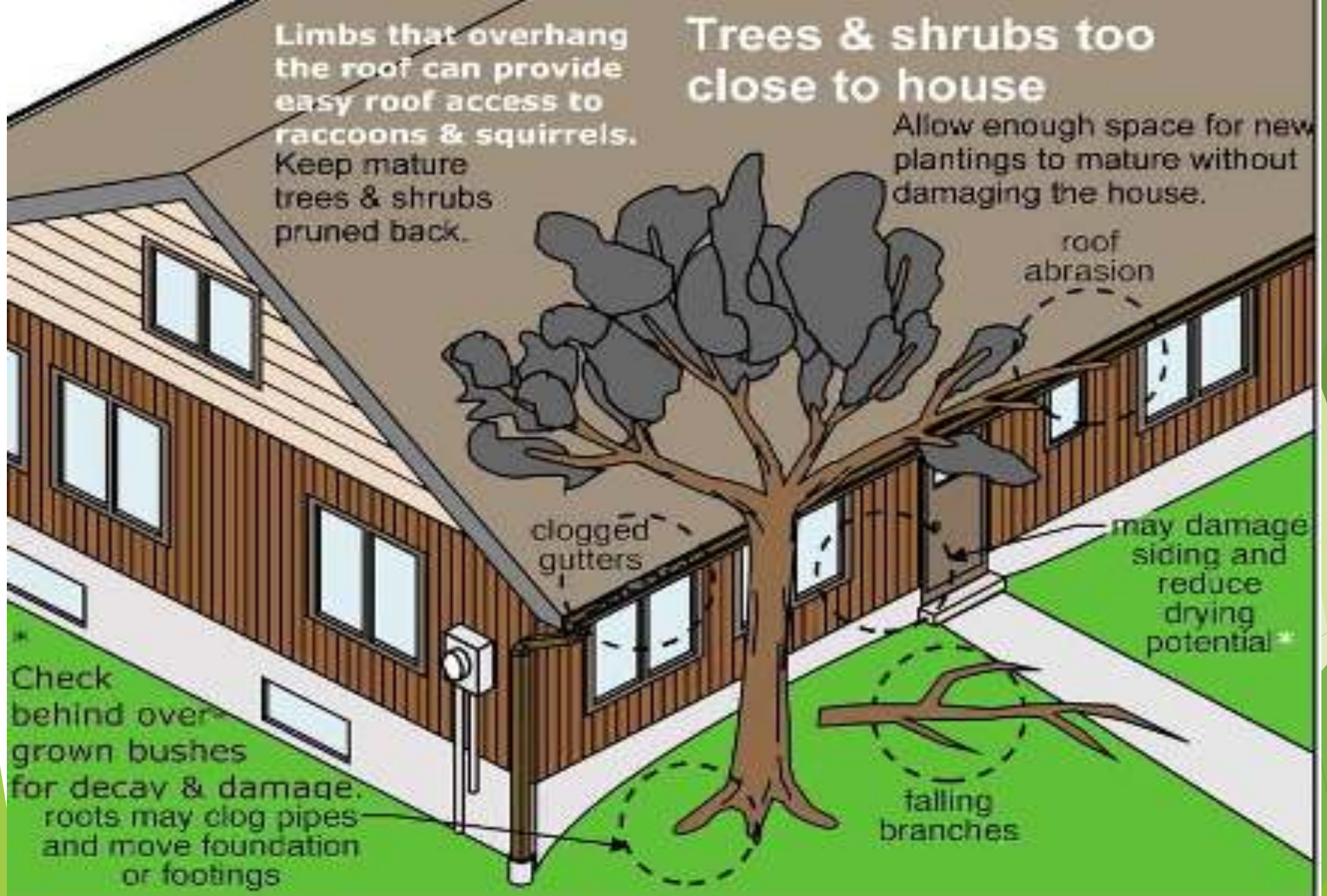
- Wind
- Lightning
- Ice / Snow
- Erosion
- Flooding
- Salt
- Non-Living

Biotic Disorders

- Fungi
- Bacteria
- Virusus
- Bores
- Insects
- Sap Suckers
- Living Agents


Crown dieback
Often evident only after several years
Tree / building incompatability
Bark wounds
Material storage
Raising and lowering of soil levels
Compaction
Root dieback
Soil pollution
Trenching for drains and service runs
Excavation and stripping of topsoil


Copyright ©2011 Gardner Architects.com


Limbs that overhang the roof can provide easy roof access to raccoons & squirrels.
Keep mature trees & shrubs pruned back.
Trees & shrubs too close to house
Allow enough space for new plantings to mature without damaging the house.
roof abrasion
clogged gutters
may damage siding and reduce drying potential
Check behind over-grown bushes for decay & damage.
roots may clog pipes and move foundation or footings
falling branches

Tree Cavities

I would only encourage tree removal in high traffic or target areas, trees like this are critical to the ecosystem and if they can be left should be

TYPES OF PATHOGENS

Heart Rot

Brown Rot

White Rot

Sap Rot


6

7

White Rot

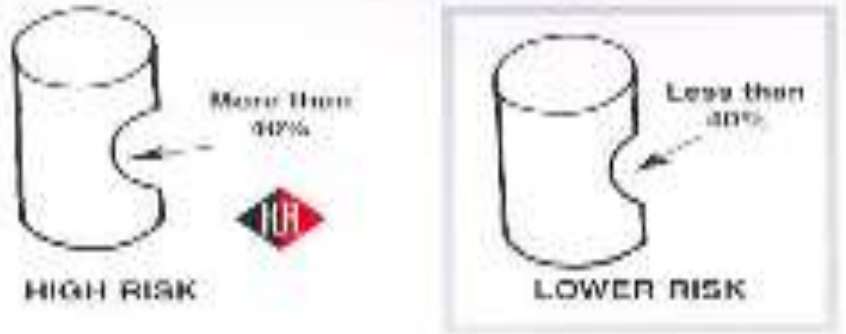
8

Cankers

Area of dead, sunken, or missing bark.
Cankers include diseases and mechanical wounds.

Tree with more than 40% of the stem cross-section affected by canker or decay.

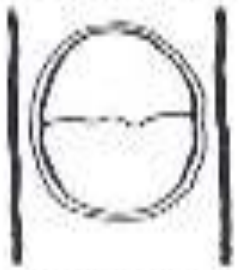
The canker will eventually lead to a column of decay. Check for extent of decay. Probe through the canker face first. If decay is extensive, evaluate for decay with cavity.



Remaining cross-section should be 80% sound wood.

Cracks on Canker Face

Horizontal Cracks



HIGH RISK

Vertical Cracks

LOWER RISK

CONKS ON ASPEN

- Tree should be removed
- Note the small white conk, Hydnum septentrionale
- This tree is obviously in the later stages of decay

CONKS ON WHITE BIRCH

WHAT IS THIS

- WHAT IS THE MAIN CONCERN HERE
- WILL IT SPREAD
- WHAT OTHER SPECIES MAY YOU SEE THIS ON

WHITE PINE

- Take or leave
- What caused this
- Is this the primary or secondary problem
- Does this area of damage have any other pathogens present

ARBORICULTURE AND CANADIAN LAW

Just some food for thought

Negligent Maintenance

Owners of trees, or others responsible for such trees (such as hired maintenance contractors), generally face liability only when it was known, or constructively known, that a tree failure risk was present and the owner (or others) failed to properly tend to the tree. In this way it can be thought that the injury or damage was a result of the delay in caring for the tree rather than the result of the risks inherent in a tree. Essentially, the negligent 'failure to maintain' is a man-made risk rather than a natural tree risk. On the point of liability for failure to maintain trees, the Superior Court of Ontario (Divisional Court) said in ***Hallok v. Toronto Hydro Electric System Ltd.***, 2003 CanLII 8519 at

Recommendations pertaining to Liability

- Contact your insurance company find out exactly what type of tree coverages you have.
- Questions would be ask about Acts of God like storms.
- What if tree is on neighbors property and they have no coverage are you still covered
- What about personal tree cutting if you cause damage to your property or someone elses ?

Consider checking with your local municipality pertaining to tree related issues.

TREES & BEYOND LTD

Box 2

Cloyne, Ontario

K0H-1K0

613 336 8443 President Coleman Boomhour
coleman.boomhour@outlook.com