Tree
Planting, Care, Maintenance,

Toso Bozic P.Ag

Tree Expert/ISA Arborist

ATTS Group Inc/ Yard Whispers

www.yardwhispers.ca

About Us

Trees are our Passion

Yard Whispers is a leading tree, forestry and agroforestry **consulting company that provides services** for sustainable management of trees/forest on public and private lands

We offer services to:

- Residential and commercial business
- Golf course industry
- Municipal governments
- Parks and campgrounds
- Urban developers
- Legal and regulatory bodies
- Educational institutions
- NGO – provincial, national and international

Yard Whispers is **wholly owned subsidiary of** ATTS Group Inc

Our Services

Arborist Services

- **Forensic Tree Expert for insurance and legal services**
- Integrated Pest Management (IPM)- Tree pests ID, assessment and recommendation
- **Tree Risk and Hazard Assessments** (TRAQ Certified)
- **Tree appraisal and value assessment**
- Tree preservation and protection plan
- Tree planning and designs for acreage owners

Urban/Town Tree services

- Tree inventory for rural and urban areas
- Urban forest management plan
- Development of tree bylaws, policy and regulations

Natural forest management

- Woodlot management plans- harvesting and reforestation
- Tree/forest design, planting and species selection for reforestation and reclamation projects

Agroforestry Services

- Shelterbelts and windbreaks design
- Riparian and natural revegetation
- Biodiversity, wildlife and pollinators planting

Values of trees to your property

- reducing summer heat (cooling effects)
- protecting from cold winter winds (heating effects)
- increasing crop yields and protects livestock
- increasing property values up to 20 %
- improving well-being through stress reduction and increased comfort
- aiding with storm water management- reduce water erosion
- providing a place to play and relax
- reducing noise and dust effects
- providing a home to many wildlife species
- sequester carbon
- Recharge dugouts and underground water

Photos by: Terry Krause

Diversity at Terry Krause place (62 species

Prairie Fire Crab	Snow Sweet Apple	Rescue Crab	Mock Orange
Brooks Poplar	Okanese Poplar	Northwest Poplar	Green Giant Poplar
Pembina Plum	Brookred Plum	Double Flowering Plum	Elderberry
Lodgepole Pine	Mugo Pine	Common Lilac	Vilosa Lilac
Red Osier Dogwood	Yellow Dogwood	Variegated Dogwood	Red Elder
Nanking Cherry	Evans Cherry	Carmine Jewel Cherry	Cupid Cherry
Crimson Passion Cherry	Romeo Cherry	Juliette Cherry (all Romance Series but Carmine Jewel)	
Western Chokecherry	Western Sandcherry	Mayday	Red Maple
Highbush Cranberry	Snowball (vibernum)	Rowen Berry	Mountain Ash
White Spruce	Alberta Spruce	Balsam Fir	Bird's Nest Spruce
4 Juniper Species	Native Gooseberry	Hedge Rose	American Elm
Laurel Leaf Willow	Sharp Leaf Willow	Siberian Larch	Green Ash
Manitoba Maple	Red Maple	Saskatoon (smoky)	Siberian Elm
Black Currant (Ben Nevis)	Red Currant	5 Honeyberry Species (tundra, aurora, borealis +	
Raspberry - Boyne	Raspberry – Red Mammoth	Paper Birch	Pussy Willow
Bur Oak	Hazelnut	Cotoneaster	Forsythia

Steps to establish trees

1. Site selection – slope, exposure, drainage, soil, wind, roads. et
2. Design – linear or in cluster
3. Species selection – variety of species the better
4. Site preparation – you may need do some site preparation
5. Tree/shrub planting – manual or mechanical
6. Watering
7. Weed control
8. Wildlife control
9. Insect and diseases issues
10. Environmental issues
11. Long Term Maintenance

Site Selection: Environmental Conditions

- Soil types- clay, peat, sand, loam and salinity, dry or wet
- Sun light and exposure- low, shade, full sunlight
- Prevailing wind direction
- Topographic features – hills, creeks, lakes, sloughs, depressions, ridge, etc
- Drainage and ponding – how long area stay wet after spring melt or heavy rain
- Water quality and quantity
- AND very important - Visit already established shelterbelts and properties

Draw a map of:

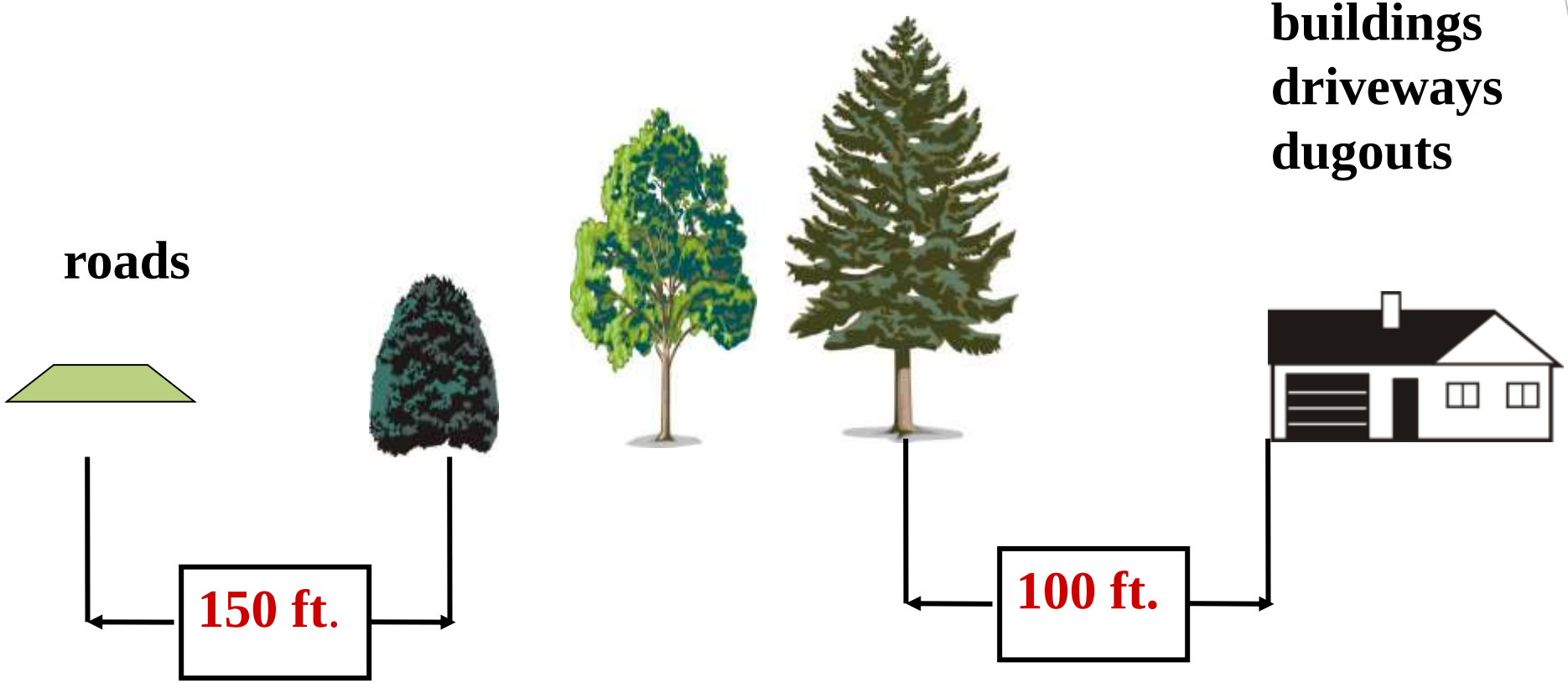
- Roads, buildings, corals, fences, power lines, pipelines, existing shelterbelts,
- Locate building in relationship with trees
- Keep 100 feet from buildings and 75-100 feet from road
- Future buildings, storage, parking, bins, field access

Physical structures checklist - MUST

- Power lines ABOVE and BELOW ground
- Cable Lines ABOVE and BELOW ground
- Water and sewer lines and outflow area
- Telephone lines
- Gas and propane lines
- Sidewalks, pathways
- Pipelines, and valves including right of ways and easements

buildings
driveways
dugouts

roads



Common tree issues


Root collar damage


Horrible planting


Human damage


Deep planting


Root cutting


Deep planting

Good tree at wrong place

- Proximity to buildings, roads, power lines, dugouts, gardens, water/sewer systems

Key factors to choose tree/shrubs species

- **Soil types** – clay vs sand vs saline
- **Moisture requirements** – Willow vs Caragana
- **Form and maturity size** – pyramidal, round, columnar, etc
- **Sun vs shade** – eg pine loves sun while spruce/fir likes shade
- **Growth** – faster growth shorter life span
- **Flowers** – None vs too many or colour of the flowers
- **Fruits** – just for birds or for human consumption
- **Maintenance** – low to baby sitting
- **Wildlife** – none to bees, birds and ungulates
- **Native vs introduced**

NETPlant Search Tools

- Every tree nursery in Alberta have this tool
- Very useful tool where you can really search trees, shrubs and perennials by variety of options
- http://search.eaglelakenurseries.com/11050003/
- This is NOT endorsement of Eagle Lake Tree nursery – it is just example of NETPlant Search web site

Canada Plant Hardiness Zone

"A hardiness zone is a geographical area defined to encompass a certain range of climatic conditions relevant to plant growth and survival" -Wikipedia

- Choose right tree and shrub that are hardy to survive cold and harsh climate
- Visit places such as arboretums, parks, town and city boulevard or private property where introduced trees and shrubs are surviving and thriving
- **Choosing the right plant for the right place**
- Understand your soil, sunlight, and moisture
- Providing long term care and maintenance will help trees and shrubs to survive
- Understand local weather conditions and events such as rain, hail, drought, earl/late snowfalls, extreme freezes and chinook winds

Warner is 4b Zone

TREE FORMS

ROUND

SPREADING

PYRAMIDAL

OVAL

CONICAL

VASE

COLUMNAR

OPEN

WEEPING

IRREGULAR

1

Paper Birch

Betula papyrifera

Add To My **Wish List** ☐

Plant Type: tree
Height: 40 feet
Spread: 25 feet
Sunlight: partial shade to full sun

The king of the northern birches, with snow-white peeling bark and gold fall colour; needs adequate moisture and well-drained...

2

Clump Paper Birch

Betula papyrifera '(clump)'

Add To My **Wish List** ☐

Plant Type: tree
Height: 40 feet
Spread: 30 feet
Sunlight: partial shade to full sun

Stunning multi-stemmed form of paper birch shows off snow-white peeling bark and gold fall colour; needs adequate moisture and...

Salt tolerant species

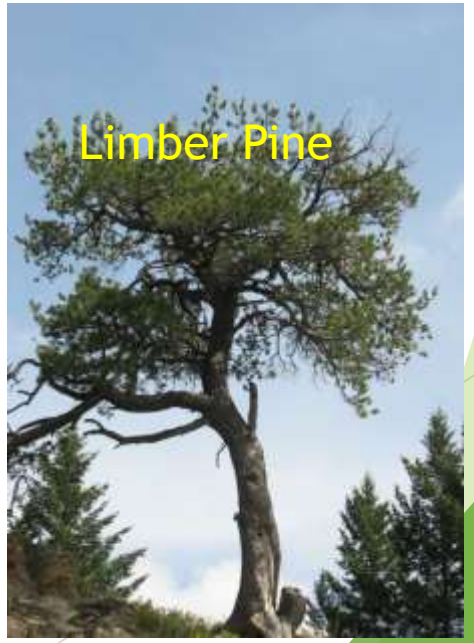
- Caragana –very invasive
- Sea Buckthorn
- Silver Buffaloberry
- Russian Olive –very invasive
- Common Lilac
- Green Ash
- Ponderosa pine
- Chokecherry
- Hawthorn
- Siberian elm
- Laureleaf Willow
- Rocky Mountain Juniper

What you can do about salt and saline soils

- Plant trees and shrubs tolerant to salinity
- Plant further way from road -keep trees at least 60 feet from roads
- Trees are more sensitive at establishment and young
- Plants are less tolerant in dry and hot climate
- Salt reduce growth and survival
- Mulching can help in area where there is salt spraying not in salty soils
- Wash salt off trees in early spring to reduce the extent of injury to sprayed branches.

Pines

- Scots, Bristlecone, Lodgepole, Ponderosa, Whitebark, Swiss stone, Austrian Limber and Mugo
- All pines love full sunlight
- Long lived, drought tolerant and fast growing
- Can withstand wind



Spruces

- It grows best on well drained, moist, silty soils
- The root system grows fairly flat, but on deep soils will form a ‘heart’ root system
- Prefer northern/western, colder exposure
- Excellent windbreak
- Grow slow
- Colorado blue can sustain saline soils

Tamarack and Siberian Larch

- Tamarack/Larch sheds its needles every year.
- Tamarack is usually found on moist, organic soils but will grow on a wide range of soil types and moisture conditions.
- Subalpine larch may be found in high elevation locations along the BC-Alberta border.
- Siberian larch will grow on drier sites.
- Low tolerance to shade

Douglas fir

Firs

- Balsam, Douglas and Subalpine fir
- Douglas fir is fire resistant. Grow in cold and moist area. Grow in very rocky and poor soils
- Douglas fir has very strong, wide spreading root system. It is quite windfirm tree
- Subalpine fir grows on higher elevations. It has a shallow root system. Prefers cold moist, and well drained sandy soils. Can tolerate dry conditions.

Subalpine Fir

Balsam fir

Coniferous shrubs


Yew


Pine


Fir

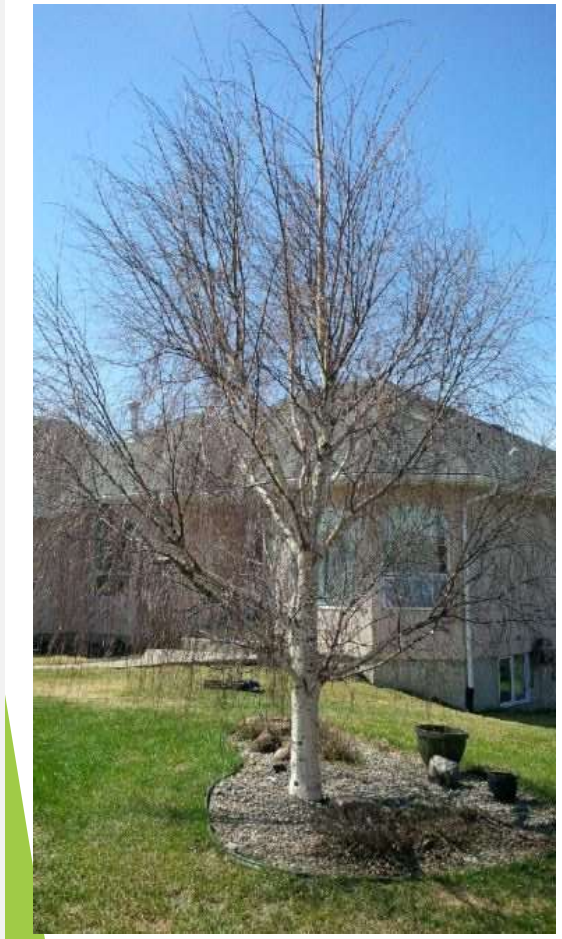

Spruce


Junipers and cedars

Aspen and Black poplar

- They are all native trees
- Trembling aspen is the most widely distributed tree in North America. It grows on almost every soil type.
- Black poplar along creeks, rivers and wet areas
- Cottonwood along large southern rivers
- They are a fast-growing, moderately short-lived tree. It often occurs in pure stands after fires, where it can act as a “nurse” to spruce and fir
- Suckering is the most common way to reproduce

Birch



Variety: **Paper,** White, Weeping cutleaf birch, Dakota Pinnacle, and Chickadee paper birch

- It grows on most soil types and in most moisture conditions, from sand dunes to heavy organic and acidic ‘bog’ sites.
- Most of birches are not drought tolerant and grows best on moist, well-drained sandy or silty-loam soils.
- They are pioneer species, has shallow, vigorous and fibrous roots system
- Birch borer and drought are biggest threat to birch

Maples

Variety: Manitoba, Amur, Flame Amur,Silver, Hotwings Tatarian, Crimson and many other

- They last well 50 years
- Variety of moisture requirements
- Relatively fast growth rate
- They are prolific seed producer
- Winter stem dieback
- Drought

Ash

Variety: Green, Black, Patmore, Foothills, Mancana Manchurian, and Fallgold black ash

- Lasts > 50 years
- Moderate moisture requirements
- Moderate growth rate
- Prolific seed
- Deep rooted
- Susceptible to 2,4-D damage
- Slow growing under dry conditions
- Cottony psyllids, aphids, cankerworms are a major pest. Invasive Emerald ash borer NOT here yet

Oaks and Ohio buckeye,

Oaks: Burr oak

- Slow growing but long living
- They prefer full sunlight
- Moist and deep soils
- leaf and twig anthracnose, leaf curl

Ohio buckeye

- Moderate moisture requirements
- Moderate growth rate
- Very hardy but not drought tolerant
- nuts contain tannic acid that can kill turf grass

Elms

Variety: American, Brandon, and Siberian

- Fast growing and long living
- They prefer full sunlight
- Moist and deep soils
- Shade can kill turf grass
- Dutch Elm Disease is constant threat
- Winter dieback is common

Willows

Variety: Golden, Laureleaf and Sharp Leaf, and Acute

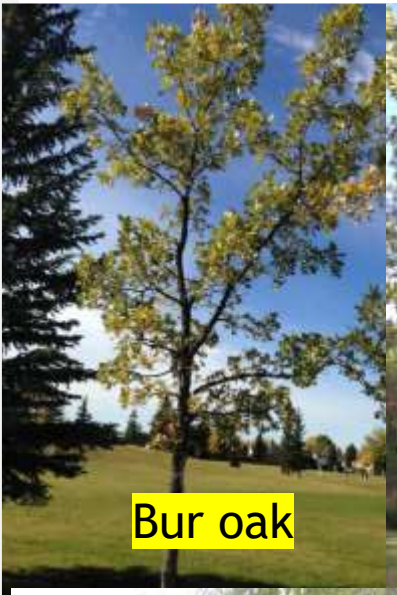
- Very wet area
- Prolific flow and seed producer
- They prefer full sunlight
- Moist deep soils
- Can sustain very heavy clay soils
- Root suckering is common
- Avoid planting near buildings

Lindens

Variety: American, True North, Dropmore and Morden Littleleaf

- Prolific flow and seed producer
- They prefer full sunlight
- Moist and deep soils
- Prefers deep moist fertile aerated and loam/clay soils
- Stump sprouts
- very few serious pests

Small trees


Bur oak


Amur cherry


Ivory silk lilac


Tatarian Maple


Mt. Ash


Cork tree


Ohio buckeye


Red Hot Wing Maple

Columnar trees


Purple Spire
Columnar
Crabapple


Cleveland Select
Ornamental Pear

Top Gun Oak


Columnar Norway Maple


Emerald Spire
Flowering Crab


Swedish Aspen


Red Rocket
Red Maple


Parkland Pillar
Japanese White Birch

Photo credits: NetPS

Hawthorns – Snowbird and Toba

- Lasts 30 – 50 years
- Suckers - lots
- Low moisture requirements
- Large thorns
- Edible fruit
- Moderate growth rate




Lilacs

- Long lived
- Spreads by seed
- Moderate moisture requirements
- Shade intolerant
- Performs poorly on sandy soils
- Moderate growth rate
- Very extensive root system

Buffaloberry

- Lasts 30 – 50 years
- Suckers - lots
- Low moisture requirements
- Edible red fruit
- Moderate growth rate
- Can be difficult to establish
- Needs good drainage

Sea buckthorn

- Lasts 30 – 50 years
- Suckers
- Low moisture requirements
- Edible orange fruit
- Moderate growth rate
- Can be difficult to establish
- Needs good drainage and lots of sun

Chokecherry and Pincherry

- Lasts 30 – 50 years
- Suckers
- Moderate moisture requirements
- Shade intolerant
- Moderate growth rate





Ninebarks

- Multi-stemmed deciduous shrub with a more or less rounded form
- Zone 2-7
- 5-7 feet height and up to 10 feet wide
- Various leaf colors with attractive flowers and bark,
- Can withstand tough conditions,
- few if any pests or diseases,
- Low maintenance, easy to grow, and attractive group of large shrubs.





Spiraea (Rosacea family

- Fast growing means spiral, it refers to their wreath-like display of showy, small flowers.
- Zone 3
- Pollinators are attracted to shrub
- 3-5 feet height and up to 7 feet wide
- Various leaf colors with attractive flowers and bark,
- Deadhead flowers after blooming to tidy up plants
- Aphids, spider mites, powder mildew
- Drought tolerant once established and deer tolerant





Potentilla
(Shrubby cinquefoil)

- A very hardy and widely used
- Flowers during late summer and early fall
- Zone 2
- Pollinators are attracted to shrub
- 3-4 feet height and up to 3 feet wide
- Leaf spot and mildew diseases and spider mites
- Drought tolerant




Saskatoon's

(Smokey, Thiessen, Northline Regent, Honeywood, etc)

- Zone 2a
- Native and fast growing, good soil and drainage
- Pollinators are attracted to shrub
- Up to 15 feet height and up to 10 feet wide
- Disease : blackleaf/witch's broom, saskatoon berry/juniper rust and Cytospora canker.
- Aphids, spider mites, powder mildew
- Do not like wet area

Site preparation - Chemical and tilling

Planting stock for spring

Coniferous Plugs

Poplar whips

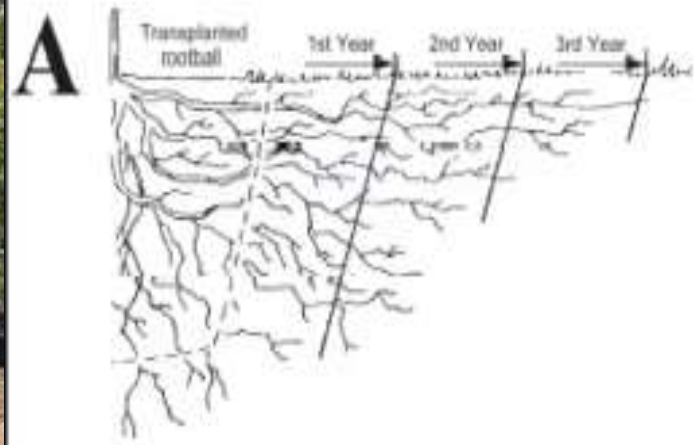
Bare root

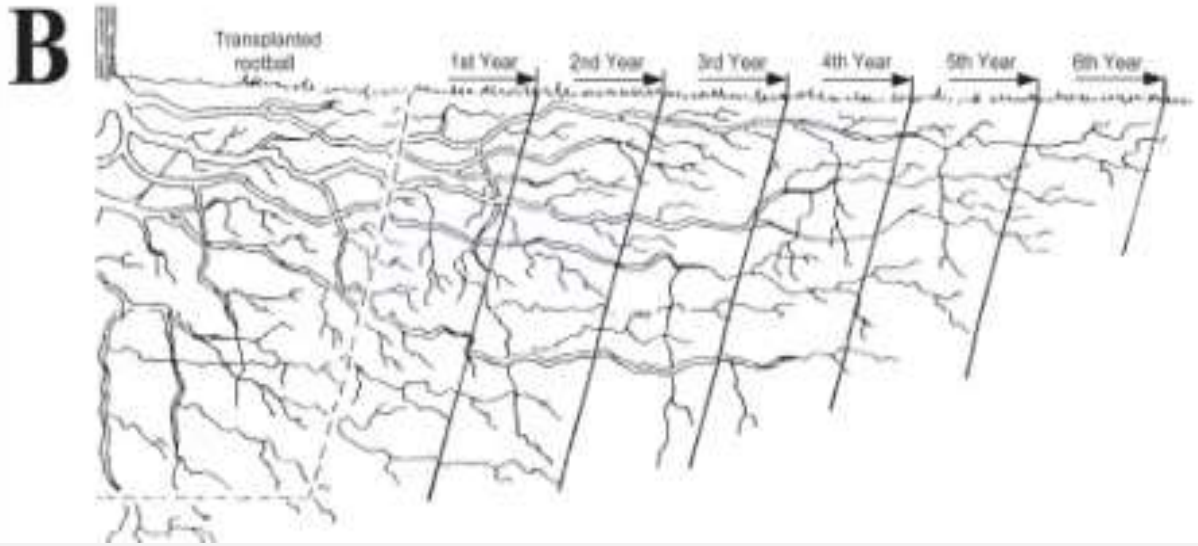
Hardwood Plugs

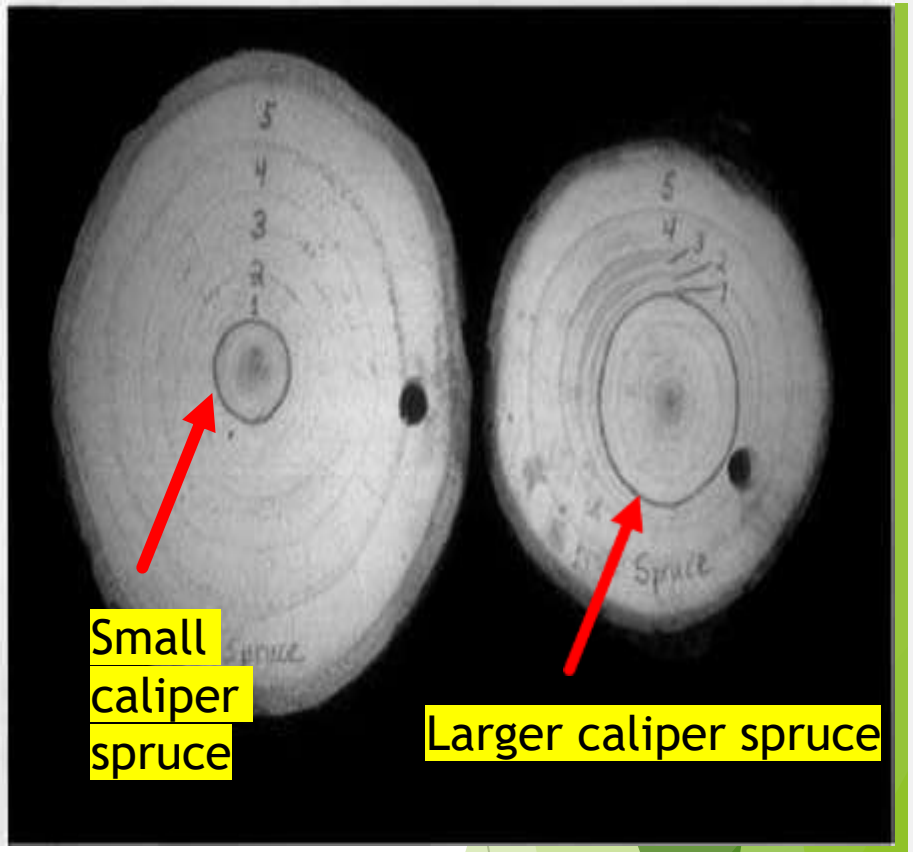
Poplar cuttings

Fall planting stock

Big tree become little- little tree become big







Source: Influence of Tree Size on Transplant Establishment and Growth

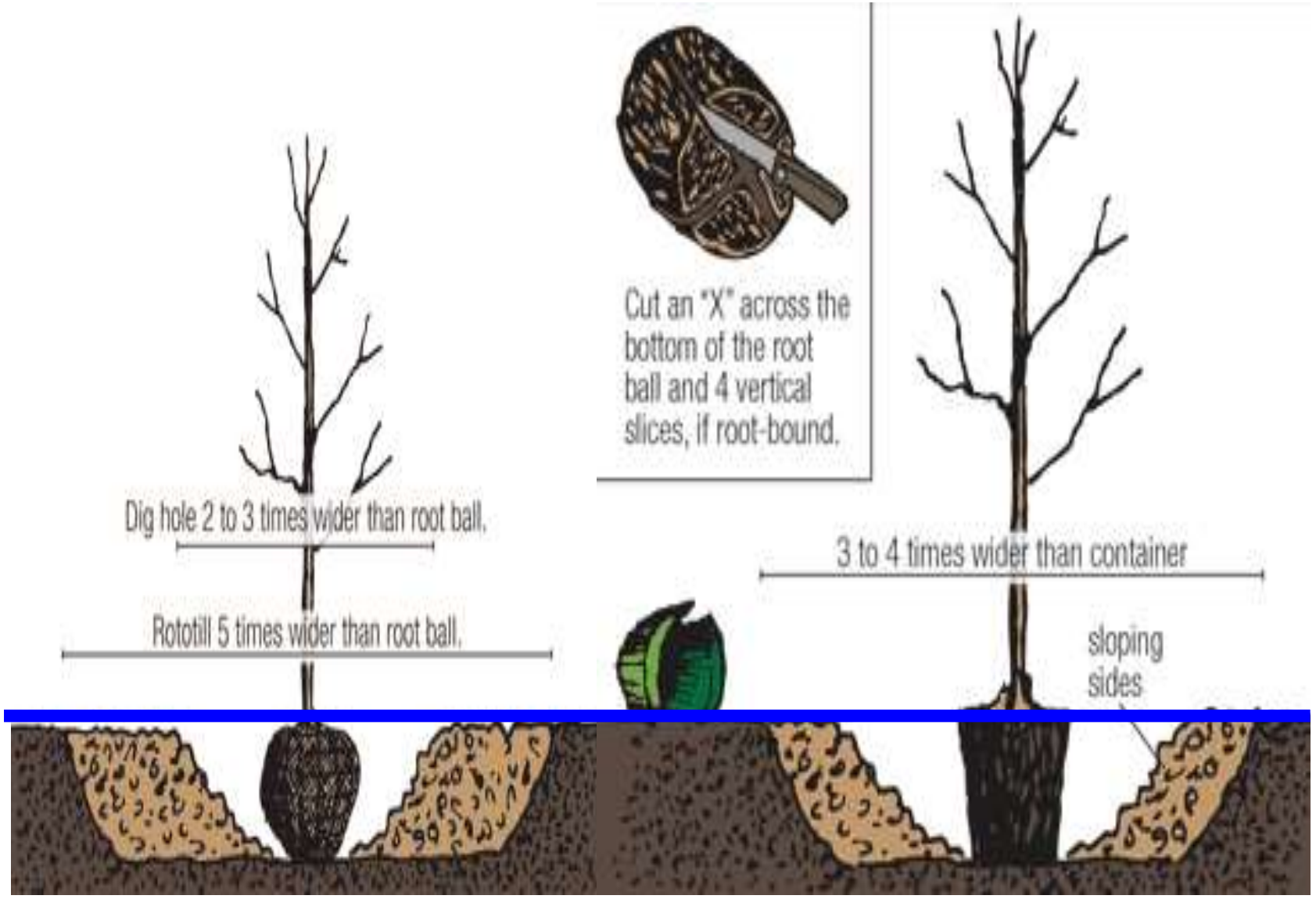
W. T. Watson
Published 2005
Biology
Horttechnology


Burlap and basket roots
Bare roots
“Nina Bassuk, Urban Horticulture Institute, Cornell University’

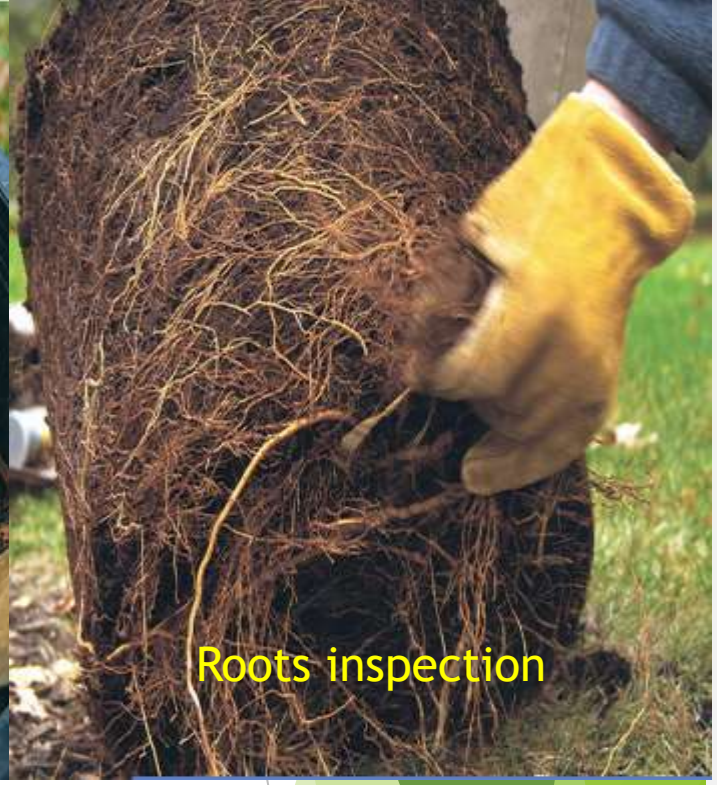
How take care of your newly planted or young trees

- Do site preparation
- Plant correctly
- Weed properly and regularly
- Mulch correctly
- Water correctly
- Fertilize little or nothing
- Do not prune unless is necessary

Tree planting depth

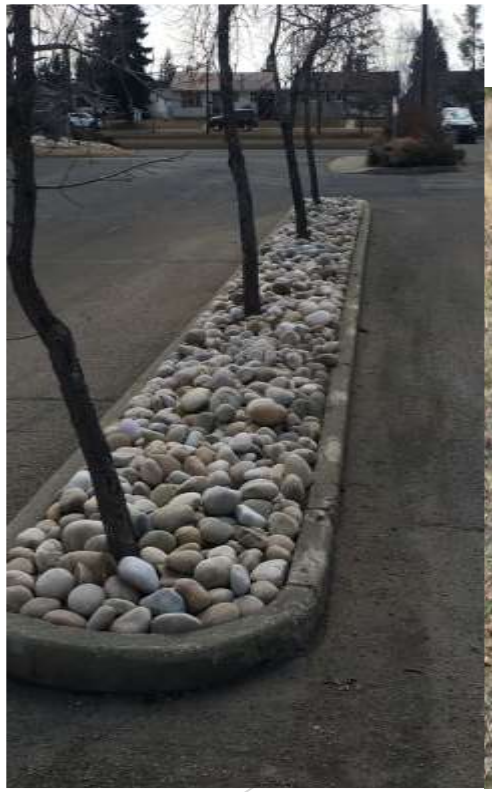


Source: Arborday - https://www.arborday.org/trees/planting/containerized.cfm



Source: https://www.gardengatemagazine.com/articles/how-to/plant/how-to-plant-a-tree-in-four-easy-steps/

Type of mulch



Wood Chips

Arborist wood chips

Benefits of wood chips in fall and winter

- Soil benefits
  - improve structure and enhance gas transfer
  - **enhance water infiltration and retention especially during dry fall**
  - prevent erosion and compaction
  - **moderate temperature and reduce root stress**
- Tree benefits
  - provide nutrients (rocks, and plastic do not provide any nutrients to soil or plants)
  - **Protect roots from cold air and winter freezing**
- Environmental benefits
  - suppress pathogens and pests
  - enhance beneficial organisms
  - increase biodiversity
  - neutralize pollutant
  - Excellent weed control

Watering systems

Watering

- Test your water for sodium levels
- Prioritize watering – young and newly planted requires the most watering
- Frequency of watering is the most important to remember
- Water will depend on the size of your tree, soil conditions, and weather conditions
- Water immediately after planting
- Water in early morning or evening
- Soak them but don't flood them
- How to check moisture in soil: use a garden trowel/knife to a depth of 4-6 inches.
- For large trees rule of thumb is 10 gallons per inch diameter
- Slow and deep water is best
- Water large mature trees in fall before freezing
- Mulch is your best friend to keep moisture

How much to water newly planted trees based on size of trunk

Caliper of tree trunk	Root establishment time	Gallons of water at each irrigation
1 inch	1.5 years	1–1.5 gallons
2 inches	3 years	2–3 gallons
3 inches	4.5 years	3–4.5 gallons
4 inches	6 years	4–6 gallons
5 inches	7.5 years	5–7.5 gallons
6 inches	9 years	6–9 gallons

- 1-2 weeks after planting, water daily.
- 3-12 weeks after planting, water every 2 to 3 days.
- After 12 weeks, water weekly until roots are established.

Source: University of Minnesota Extension
https://extension.umn.edu/planting-and-growing-guides/watering-newly-planted-trees-and-shrubs

Drip Line - Where to water

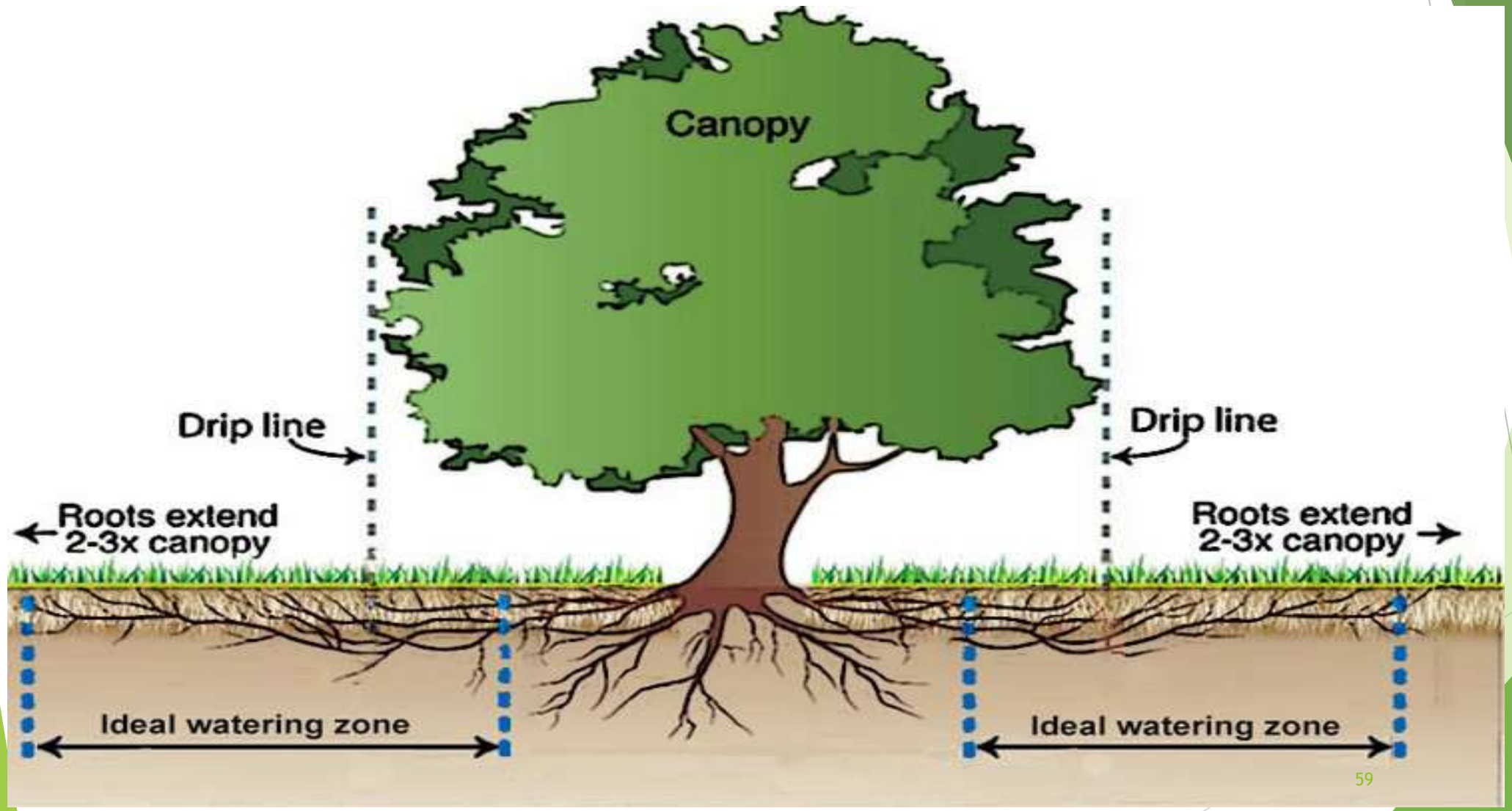
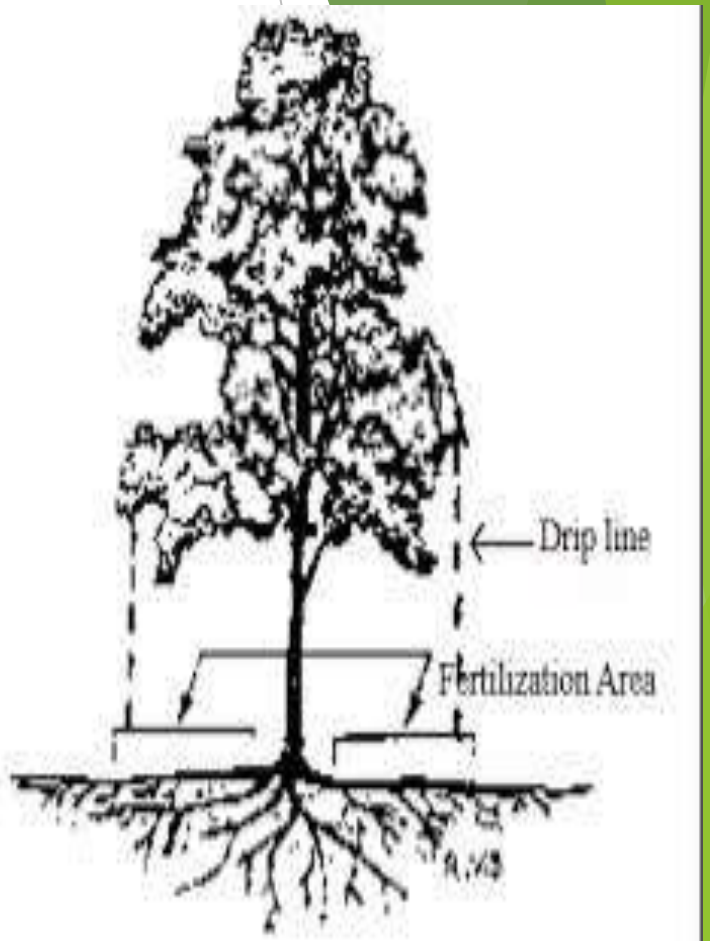


Photo source : Trees for Missoula - https://www.treesformissoula.org/watering-trees

Fertilizing Your Trees

- Do soil testing prior to fertilizing to see if you have any nutrient deficiency
- Not necessary and not recommended for newly planted shelterbelts
- Use caution when applying fertilizers with weed-killing additives
- You can use fertilizer spikes, liquid, granular, surface or deep drill application



Key Messages

- *Understand the purpose of planting the trees and how tree works*
- *Be creative*
- *Develop plan during the wintertime – draw maps, collect information on sites, order trees, budget and time*
- **You must understand local environmental conditions**
- *Choose as many as possible different trees and shrub species*
- Do proper site preparation
- Any kind of weed control is crucial within first 3-5 years –
- Mulching/wood chips is the most recommended
- Watering after planting is recommended
- Visit at least once a week your trees to see for any sign of problems
- Be prepared for insect and disease

Thank You

Blog:
https://yardwhispers.ca/blog/

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