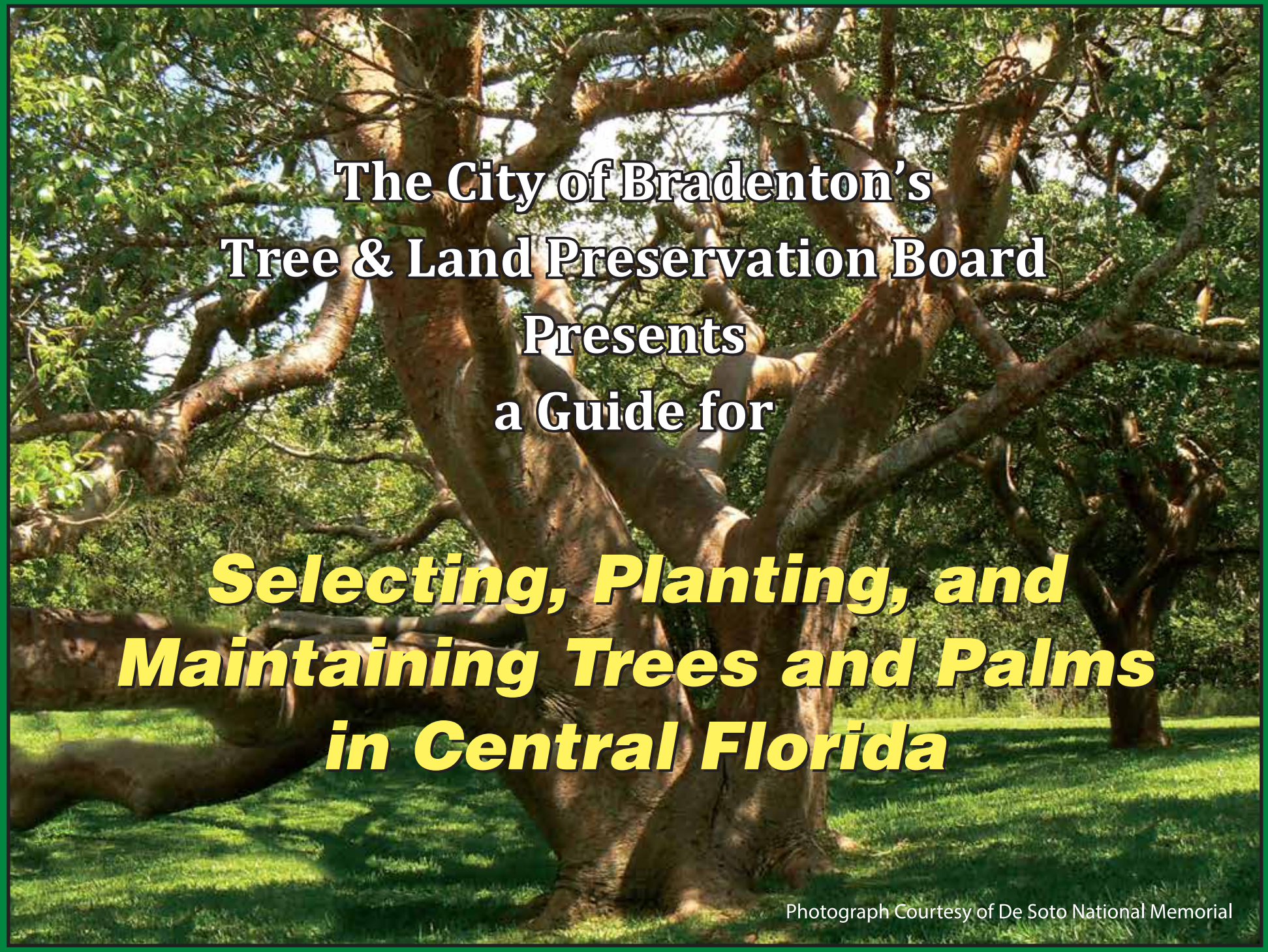


The City of Bradenton's
Tree & Land Preservation Board
Presents
a Guide for

Selecting, Planting, and Maintaining Trees and Palms in Central Florida

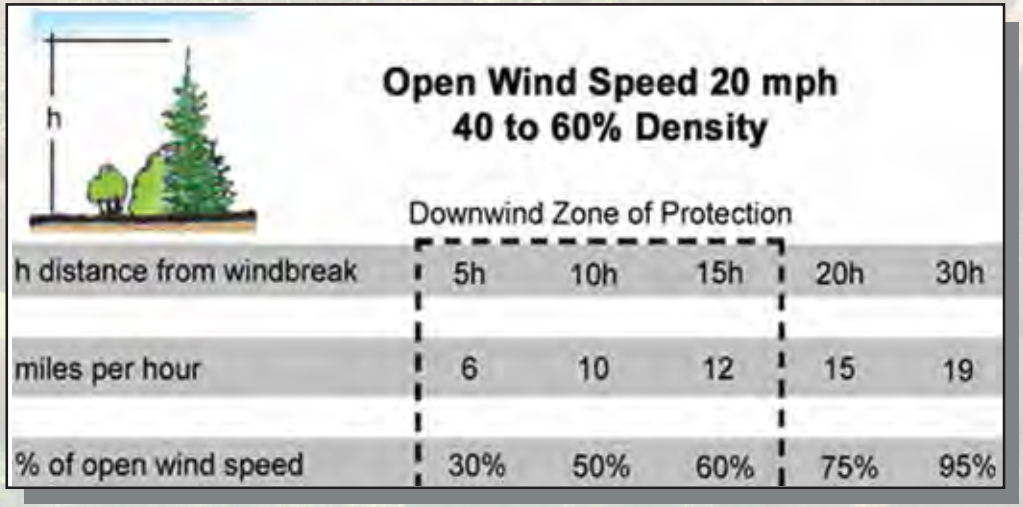
Photograph Courtesy of De Soto National Memorial

Selecting, Planting, and Maintaining Trees and Palms in Central Florida

This Presentation Will Discuss:

- The Importance of Trees and Palms
- Differences between Them
- Selecting Nursery Trees and Palms
- Planting Them
- Establishing Them
- Maintaining Them

Why Do We Plant Trees?



h distance from windbreak	5h	10h	15h	20h	30h
miles per hour	6	10	12	15	19
% of open wind speed	30%	50%	60%	75%	95%

Image Courtesy of USDA National Agroforestry Center

Groups of trees create windbreaks that divert the wind . . . producing a zone of protection called a wind shadow.

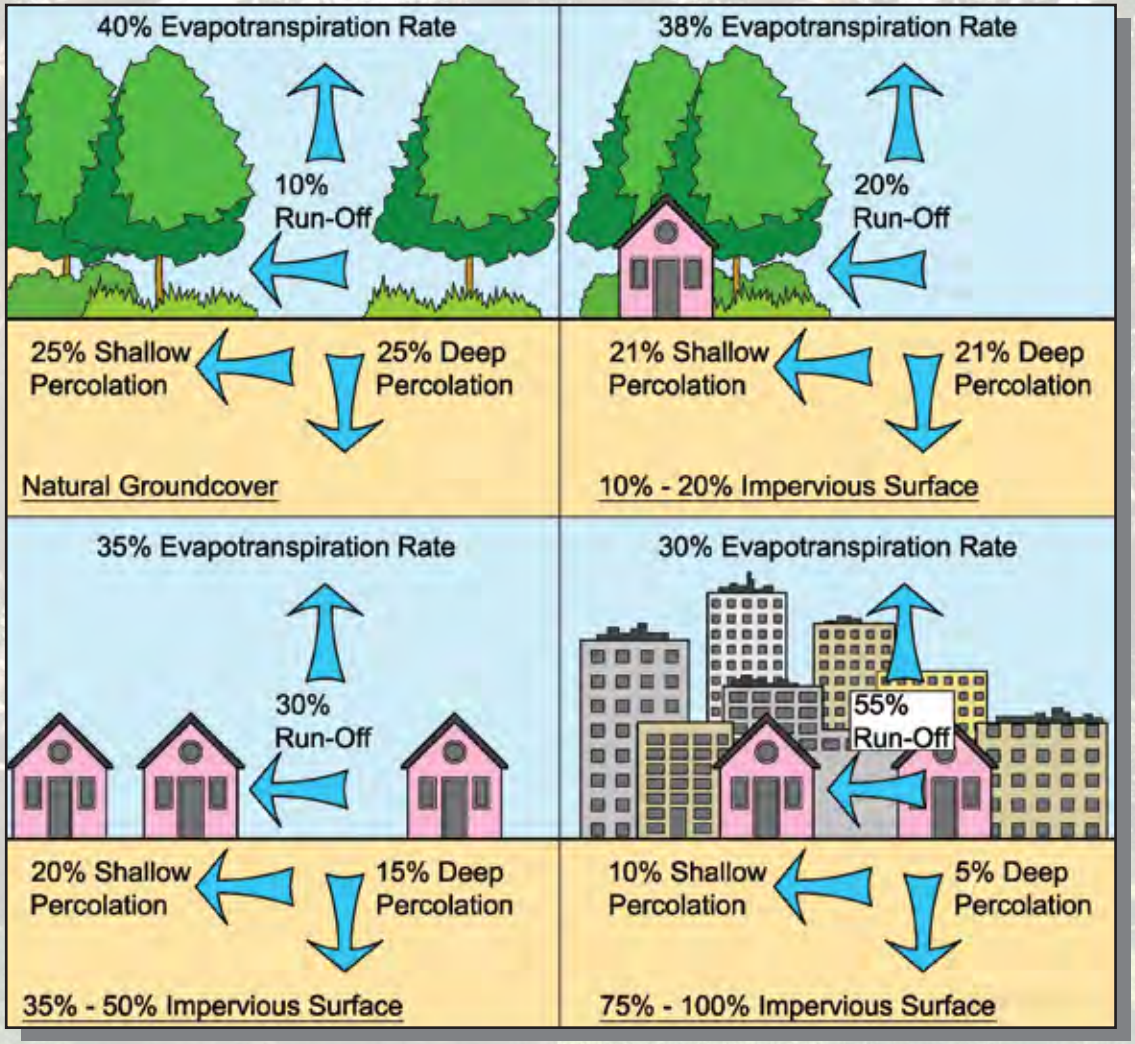
This helps protect us from strong winds produced by storms and weather events.

The Importance of Trees and Palms

Why Do We Plant Trees?

Trees intercept rainfall . . . thus reducing runoff into our streams and water bodies.

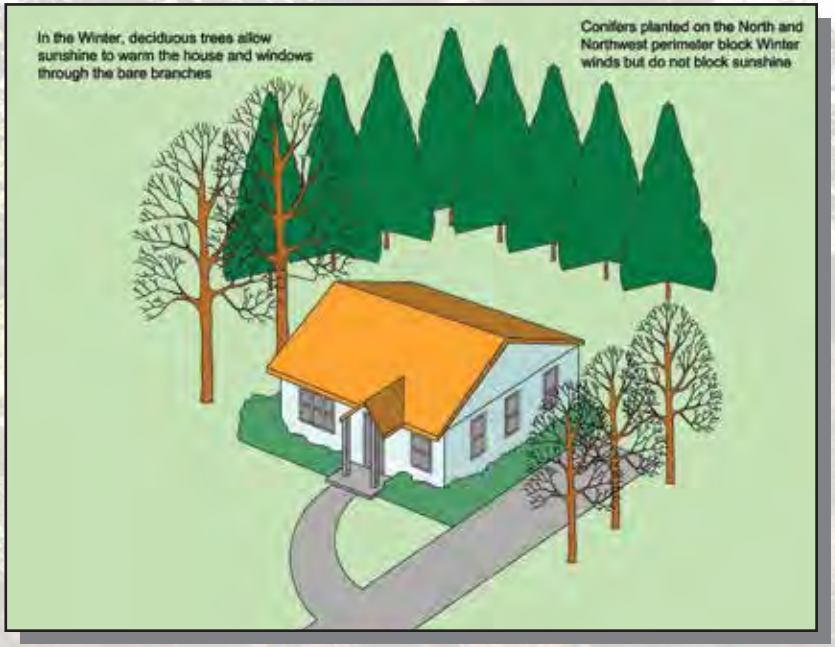
This conserves valuable water resources and maintains water quality.

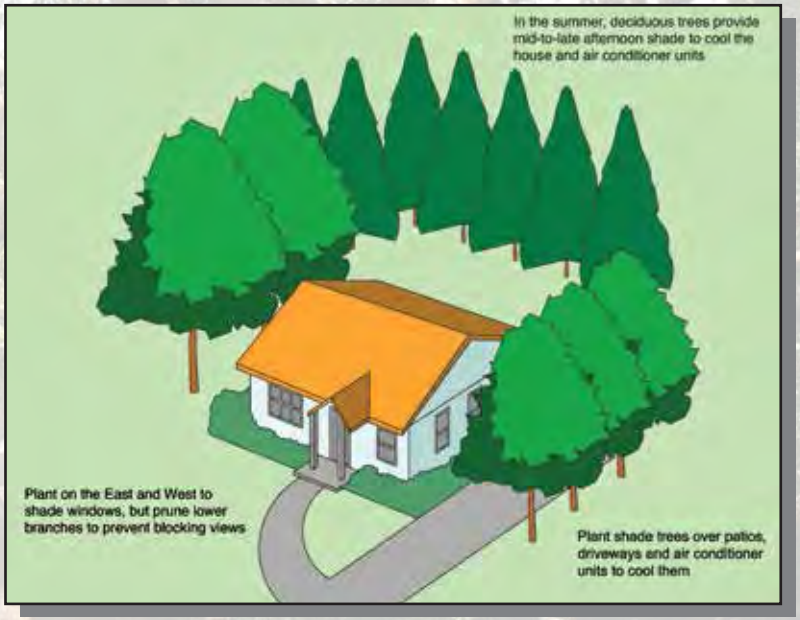


The Importance of Trees and Palms

Why Do We Plant Trees?

Trees reduce cooling costs in summer . . .





Deciduous trees reduce heating costs in winter . . . by allowing sunlight to help heat the home.

How much energy savings is that?

While the amount of savings depend on many factors . . . generally:

- Large trees shading the house and AC unit can reduce air conditioning costs by up to 30%.
- Shade trees can reduce the heat island effects of paved areas by 12% or more.
- And evergreen trees used to block winter winds can reduce heating costs by 10% to 50%.

The Importance of Trees and Palms

Why Do We Plant Trees?

Trees groups block noise . . . producing a noise shadow zone.

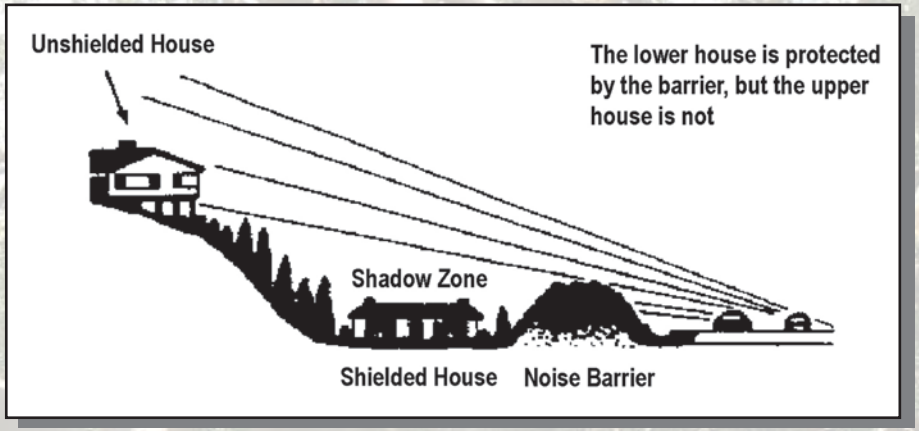


Image Courtesy of Federal Highway Administration

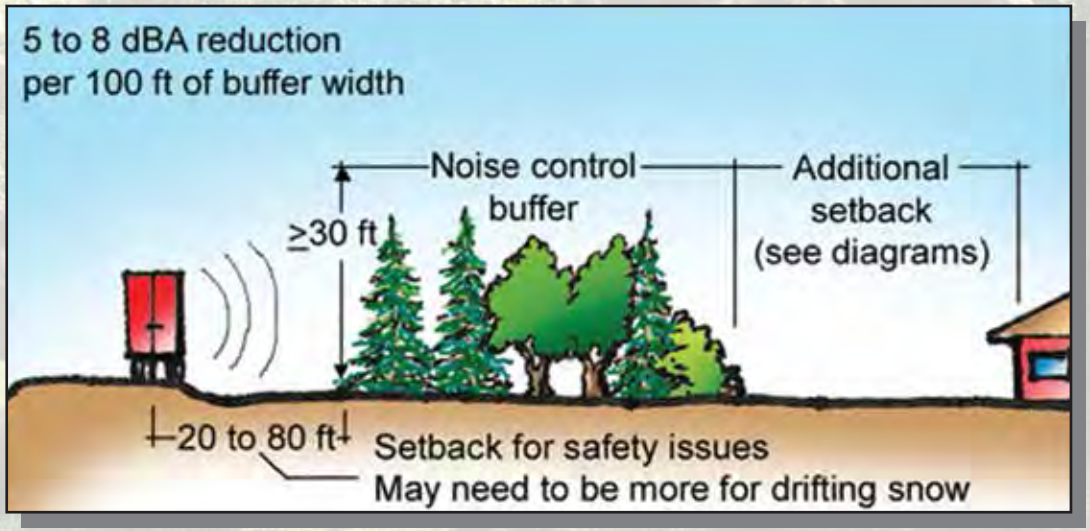


Image Courtesy of USDA National Agroforestry Center

The larger the tree grouping or buffer . . . the greater the noise reduction.

The Importance of Trees and Palms

Why Do We Plant Trees?

Trees improve air quality . . . by producing oxygen while trapping carbon dioxide and pollutants.

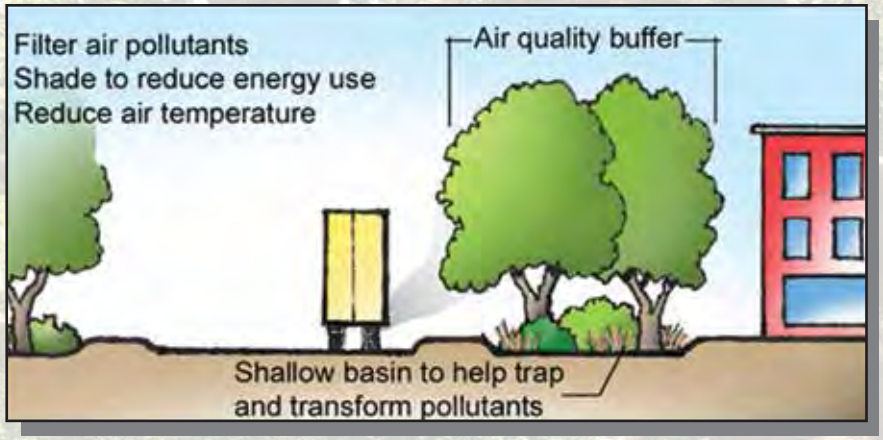


Image Courtesy of USDA National Agroforestry Center

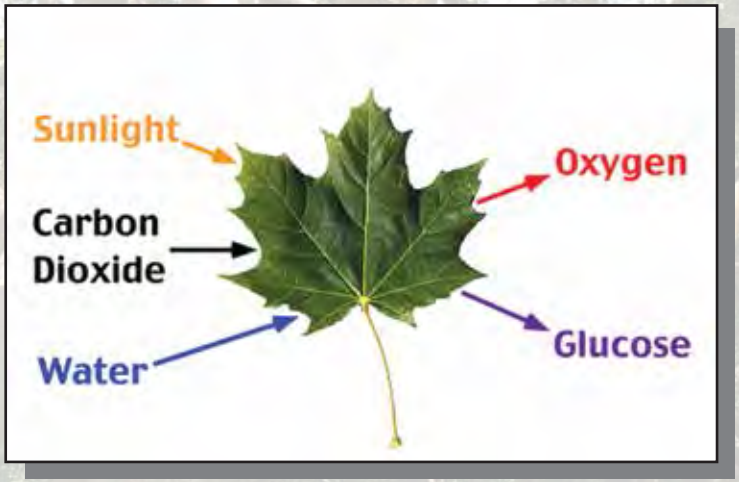


Image Courtesy of Teacher's Website

This is necessary to sustain life on earth . . . It is a symbiotic relationship we have with trees!

How much oxygen and carbon dioxide is that?

While the amount of oxygen produced by a tree depends on its species, age, health and surroundings...generally:

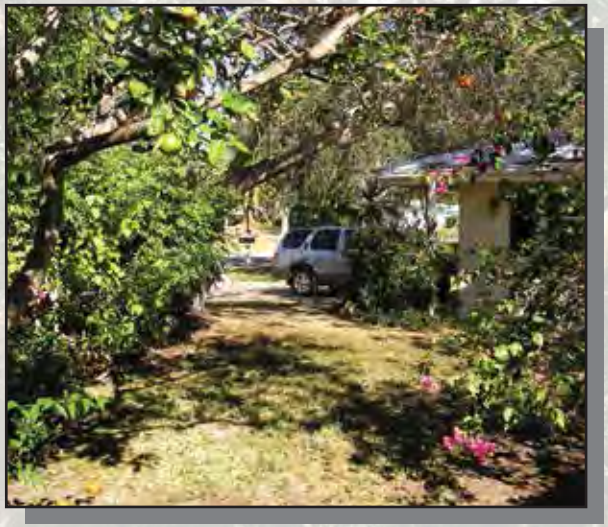
- One acre of trees annually consumes the amount of carbon dioxide produced by driving an average car up to 8,700 miles.
- That same acre of trees annually produces the amount of oxygen consumed by 18 people for 1 year.

The Importance of Trees and Palms

Why Do We Plant Trees?

Trees help to screen objectionable views...
and sometimes nosey neighbors.

This gives us privacy for relaxation...which helps to reduce stress.



Trees are aesthetically pleasing...which helps create curb appeal and increase property values.

How Trees Affect Property Value	
Increase in Property Value	**Tree Conditions**
2%	Mature Trees in Yard (Greater than 9 In. DBH)
3% - 5%	Trees in Front Yard Landscape
6% - 9%	Neighborhood has Good Tree Cover
10% - 15%	Mature Trees in High Income Neighborhood Yards

The Difference Between Trees and Palms

What exactly is a Tree?

Definitions for Trees:

- A tree is a perennial woody plant with many branches supported off the ground on a single or multiple trunk.
- A tree canopy refers to the crown or outer layer of leaves of an individual tree or group of trees.
- A shade tree refers to a large tree with a dense or spreading canopy specifically grown for its ability to provide shade.
- Trees are the longest living organisms on earth!

Types of Trees?

- **Deciduous Trees** lose all of their leaves during winter, providing shade in the summer and solar exposure in the winter months.
- **Evergreen Trees** retain their leaves all year long, and provide excellent blockage of wind and noise.
- **Broad-Leaf Evergreen Trees** lose some of their leaves in winter...but retain most throughout the year, providing dappled shade year-round.

Differences Between Trees and Palms

What is a Palm Tree?

Definitions for Palms:

- Palm Trees are non-woody perennials distinguished by large, compound, evergreen leaves arranged at the top of an un-branched stem (with some exceptions).
- There are roughly 200 genera with more than 2,000 species of palm trees worldwide.
- Palms are among the best known and most extensively cultivated plant families.

Palmate Palm

Types of Palm Trees?

Palmate Palms:

- Have fan-like leaves that resemble fingers around the palm of a hand – hence the name.

Pinnate Palms:

- Have fronds that resemble feathers, with a center stem from which many smaller leaves grow out.

Pinnate Palm

Differences Between Trees and Palms

Differences in Trunks

Trees (Dicots) are woody with some deadwood in the center.

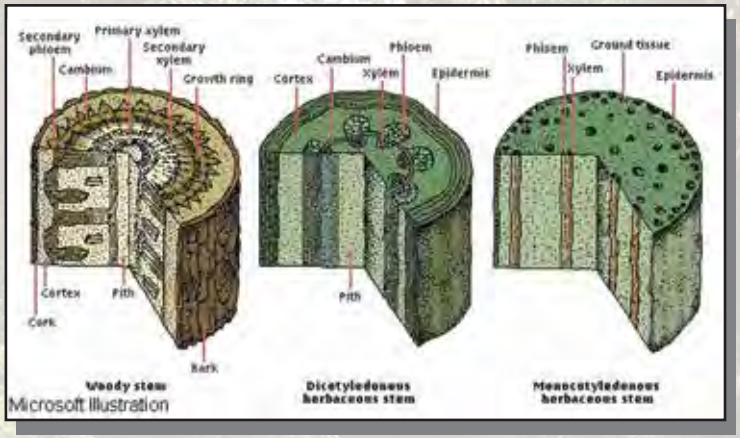


Image Courtesy of Microsoft Corp.

Palms (Monocots) are herbaceous with living tissue throughout the trunk.

Palm Trunks are Alive:

- Puncture wounds DON'T heal.
- Palms become susceptible to disease and trunk rot.

Differences Between Trees and Palms

Differences in Roots

Trees:

- 90% of tree roots are located in the top 18 inches of soil.
- They can extend 2 to 3 times the dripline diameter.

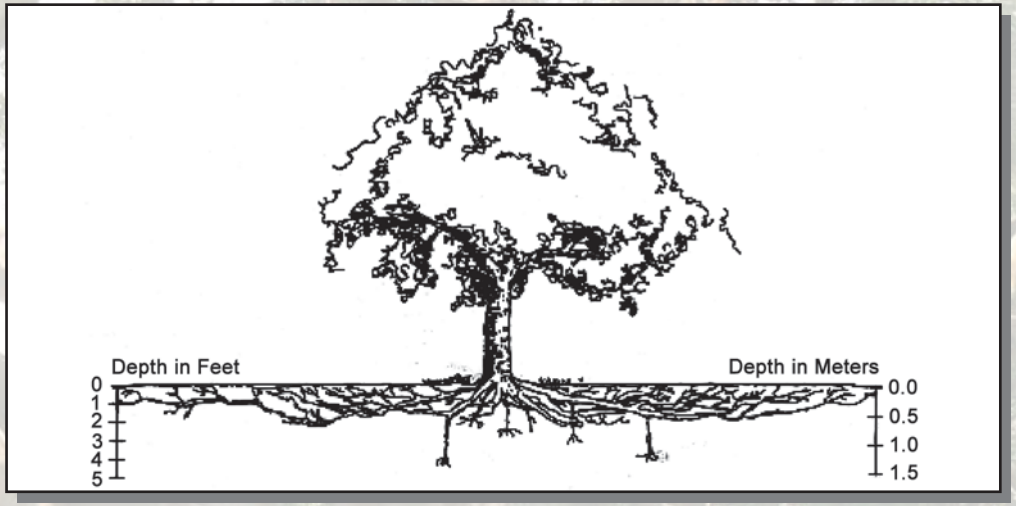


Image Courtesy of City of Santa Monica Community Maintenance Department

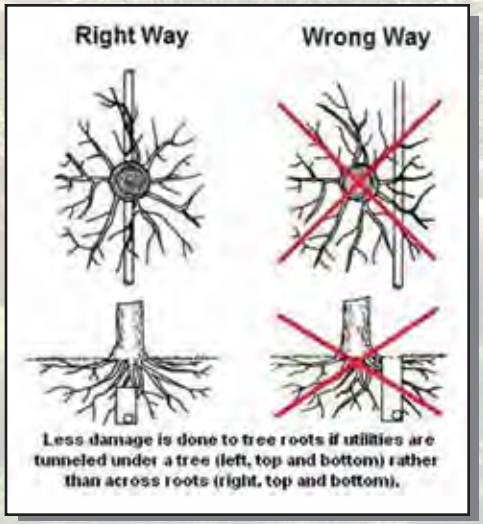


Image Courtesy of UF/IFAS Extension

Protecting Tree Roots:

- PROTECT roots by tunneling utility lines under trees.

PREVENT root damage caused by trenching!

Image Courtesy of Colorado State University Extension

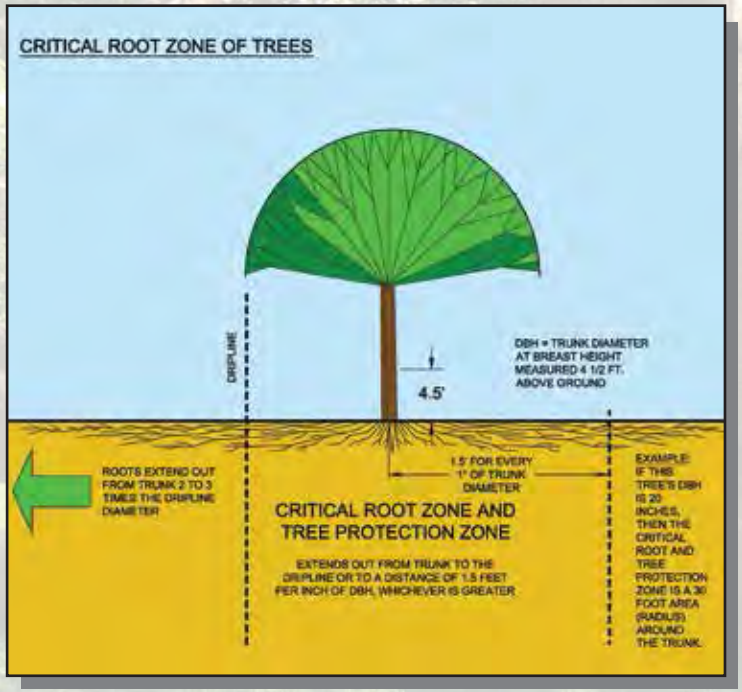
The Difference Between Trees and Palms

Difference in Roots

Trees Take a Long Time to Die:

- It often starts with crown dieback.
- And continues to progress until the tree is dead.

Protecting Trees During Construction:



CRITICAL ROOT ZONE = 1.5 ft. radius per 1 in. trunk DBH.

Protect Against:

- Trunk or root damage.
- Soil compaction.
- Raising the natural ground level.

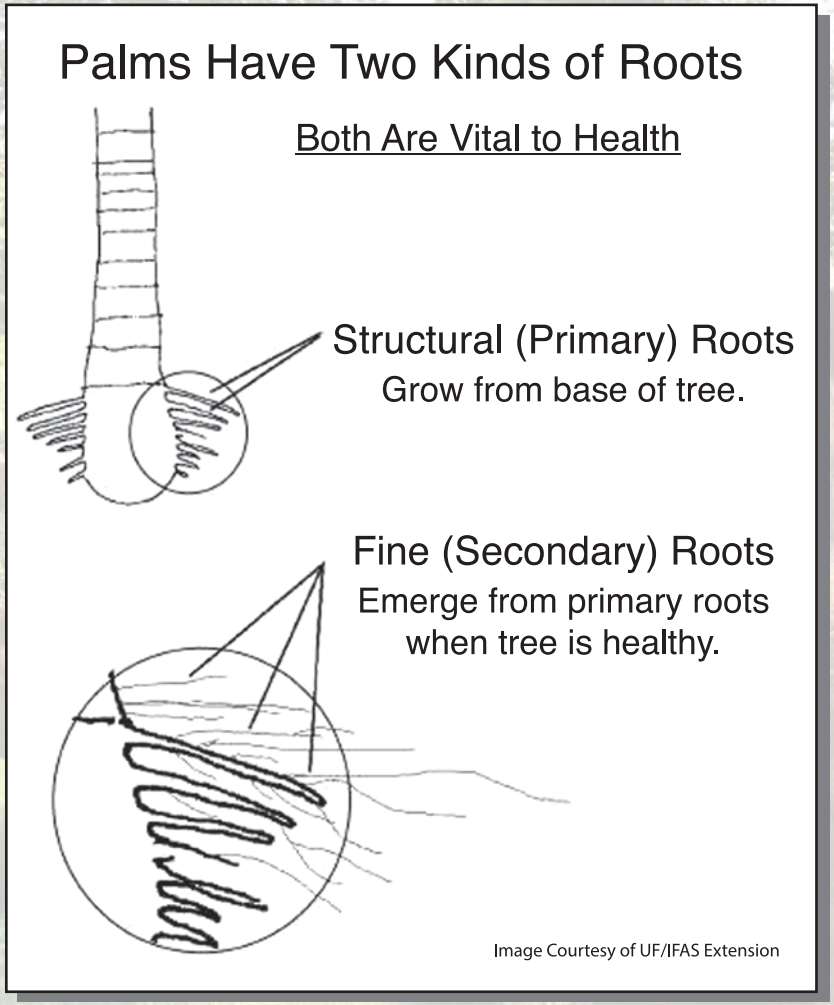
Things To Do:

- Protect root zone with fences.
- Consult with a Certified Arborist.

The Difference Between Trees and Palms

Difference in Roots

Palm Trees:



Primary Structural Roots:

- Must be near the surface.
- Hold the tree up.
- Need Oxygen.

Secondary Fine Roots:

- Absorb nutrients.
- Need Oxygen.

The Palm will NOT grow if planted too deeply or watered too much.

Image Courtesy of UF/IFAS Extension

Selecting Nursery Trees and Palms

Evaluating Tree Trunks and Branches

Image Courtesy of UF/IFAS Extension

Florida Dept. of Agriculture's Grades and Standards for Nursery Plants

Good Quality Trees have:

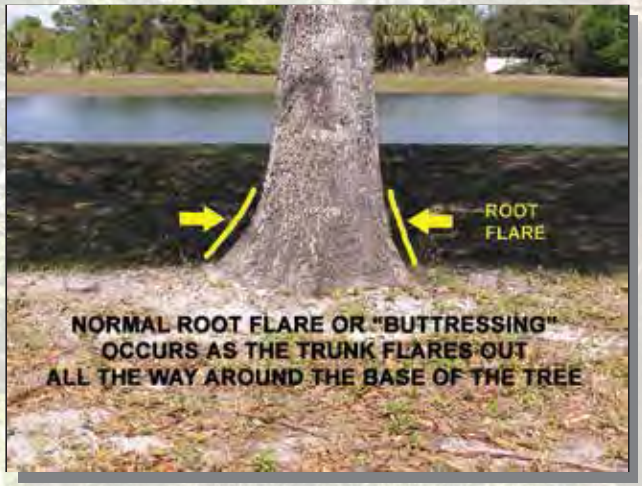
- A dominant trunk or central leader up to the canopy top.
- Branches are smaller than 1/2 to 2/3 the trunk diameter.
- Branches are fairly evenly spaced along the trunk.
- Some branches in the lower 1/2 of the tree.

Poor Quality Trees have:

- Multiple trunks or stems originating from one point.
- Two or more dominant leaders or trunks.
- Branches are unevenly spaced along the trunk.
- No branches in the lower 1/2 of the tree.

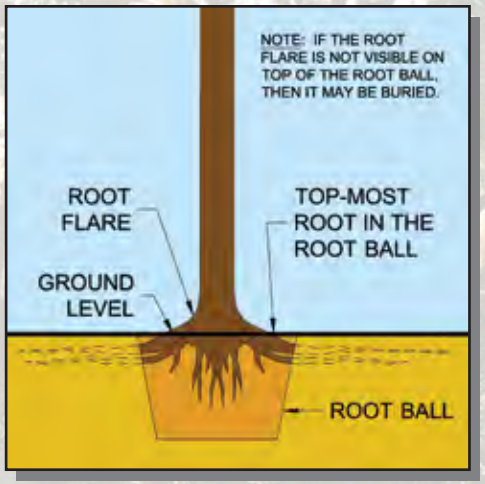
Selecting Nursery Trees and Palms

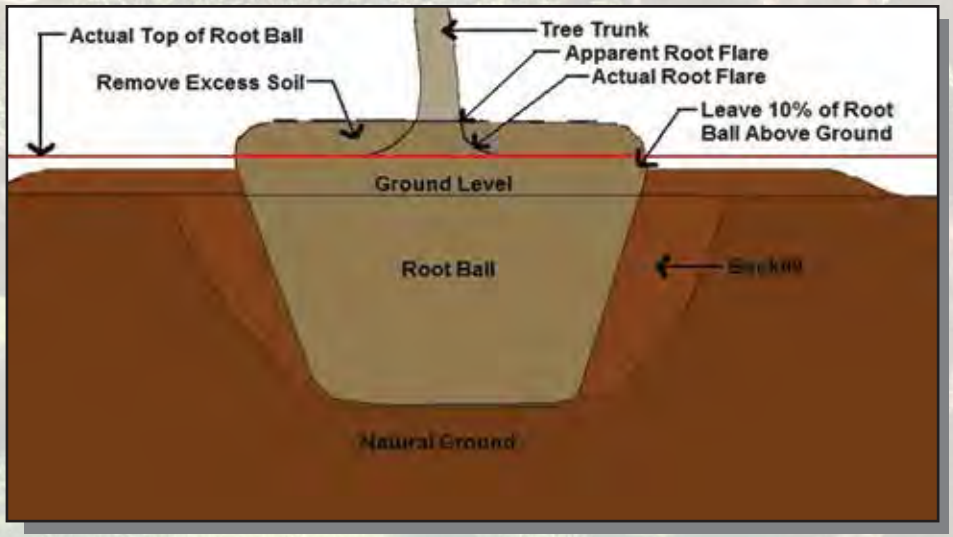
Evaluating Tree Trunks and Branches



Root Flare:

- Root flare is often obvious in mature trees as shown in the photo to the left.
- Root flare must be above ground level for the tree to survive.





Identify the Root Flare and the Root Ball:

- In nursery grown trees, the root flare may be buried with soil in the container.

Find and expose the root flare before planting!

Selecting Nursery Trees and Palms

Evaluating Tree Root System

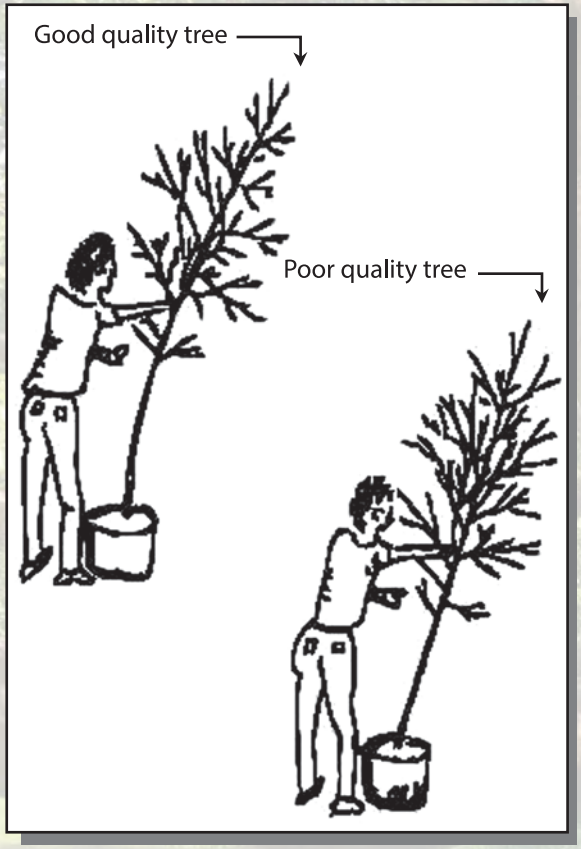


Image Courtesy of UF/IFAS Extension

Good Quality:

- Trees bend along the trunk when pushed to the side.

Poor Quality:

- Trees pivot at the base of the trunk, because they are planted too deeply.
- Or their roots may be circling.

Encircling Roots Kill Trees:

- Break up and inspect the root ball before planting.
- Cut or straighten any encircling roots.

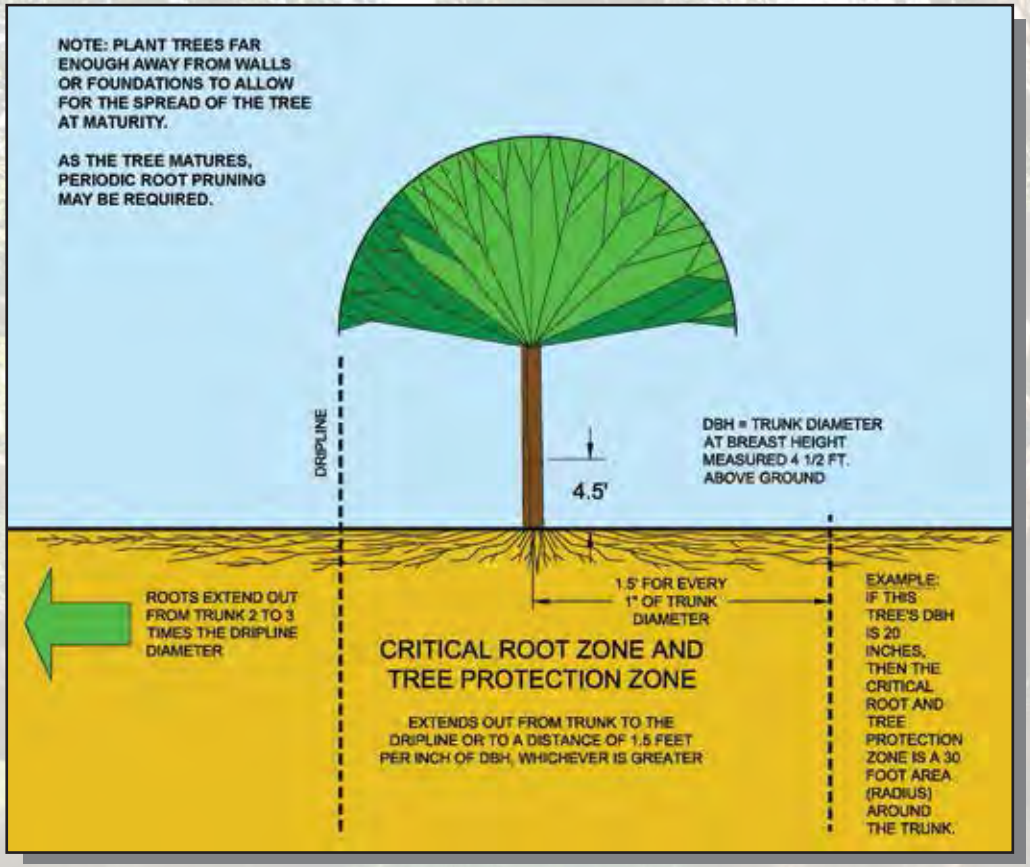
Image Courtesy of UF/IFAS Extension

If unattended, these will choke and kill the tree several years later!

Planting Trees or Palms

The Right Tree for the Right Place

When Planting Near Buildings or Structures



Things to Consider When Selecting a Tree:

- Size at maturity
- Rate of growth
- Life span
- Evergreen or deciduous
- Aggressive root systems
- Sun or shade requirements
- Drought and cold tolerance
- Water needs
- Pest and disease susceptability
- Flowers and fragrance

Depending on tree location, periodic root pruning may be required to prevent damage to structures or underground utility lines.

Planting Trees or Palms

The Right Tree for the Right Place

BASIC TREE SPACING GUIDE			
Tree Size	**Spacing Mass Plantings**	**Min. Spacing from 1-Story Bldg. Walls**	**Min. Spacing from 1-Story Bldg. Corners**
Small Trees (30 Ft. Or Less)	6 – 15 Ft.	8 – 10 Ft.	6 – 8 Ft.
Medium Trees (30 – 70 Ft.)	30 – 40 Ft.	15 Ft.	12 Ft.
Large Trees (70 Ft. or More)	40 – 50 Ft.	20 Ft.	15 Ft.

Allow for Future Growth . . . and Periodic Maintenance

EXAMPLES SHOWN ARE TOO CLOSE TO BUILDING!

Planting Trees or Palms

The Right Tree for the Right Place

When Planting Near Overhead Utility Lines

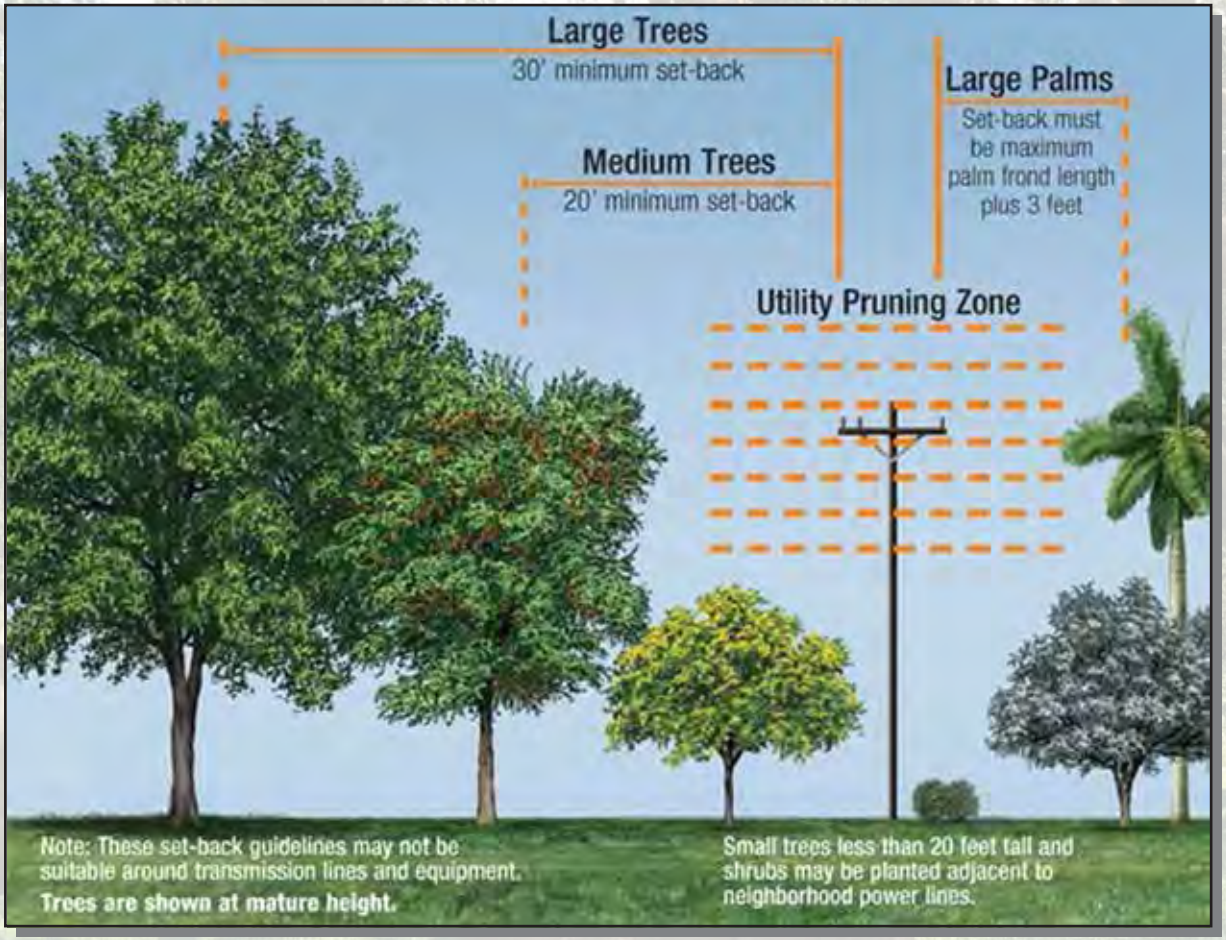


Image Courtesy of Florida Power & Light

Based on Florida Power & Light Guidelines

Planting Trees or Palms

Planting:

The Right Way

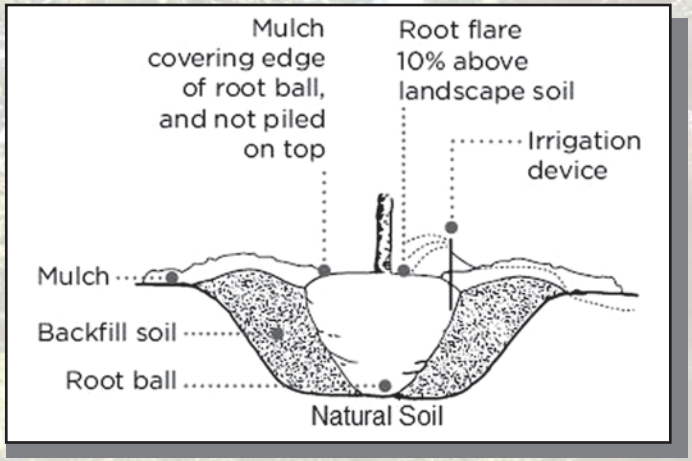


Image Courtesy of UF/IFAS Extension

- Root Flare visible and above ground.
- Root Ball resting on natural soil.
- Backfill with excavated soil.

The Wrong Way

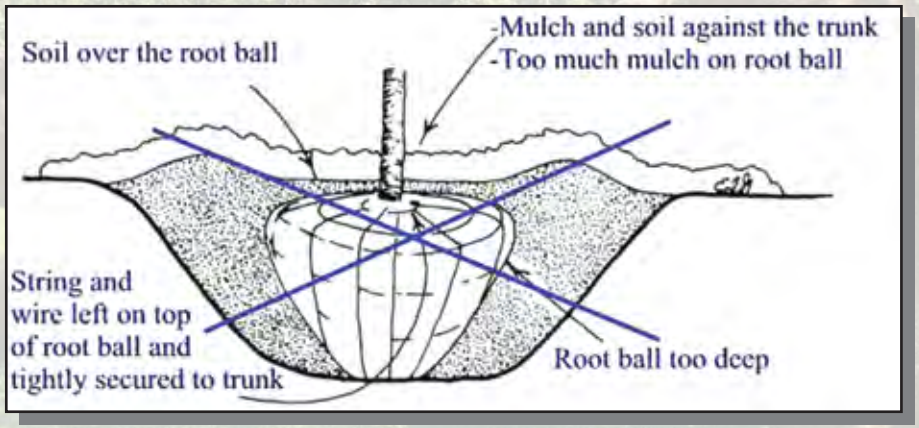


Image Courtesy of UF/IFAS Extension

Image Courtesy of Florida Energy Pipeline Association

Call SUNSHINE
(Underground Utility Location Service)
before you dig.

The biggest cause of tree failure is planting too deeply.

Planting Trees or Palms

Planting Practices

At Time of Planting:

Establishment rate is determined by many factors.

ENCOURAGES GROWTH	LIMITS GROWTH	LITTLE OR NO EFFECT
loose soil	compacted soil	peat or organic matter addition as backfill
proper irrigation management	little or no irrigation	root stimulant products
mulch 8 feet in diameter or more around planting hole	grass and weeds close to trunk	fertilizing at planting
root flare slightly above soil surface	planting too deeply	water absorbing gels
leaving top of tree intact	pruning at planting	

Image Courtesy of UF/IFAS Extension

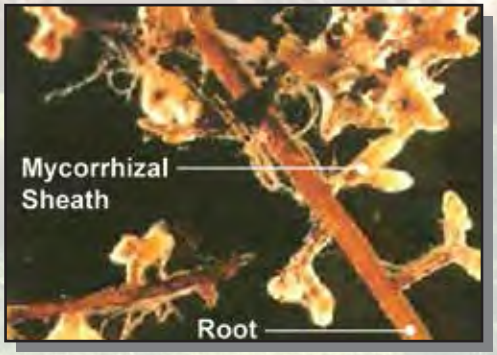


Image Courtesy of Florida Dept. of Agriculture and Consumer Services

This organism breaks down minerals and organic matter in the soil for plants to use.

Research Shows:

- Proper practices encourage growth.
- Improper practices limit growth.
- Some practices have little or no effect.
- This fungi can be added at time of planting.

Mycorrhizal Fungi:

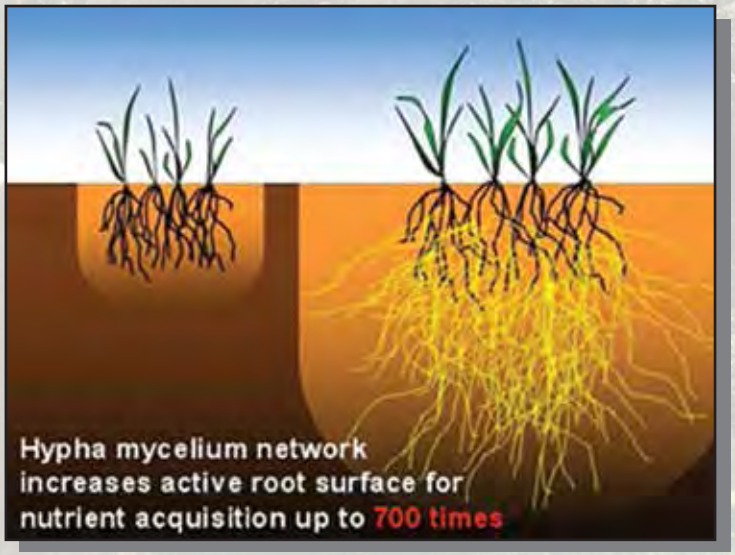


Image Courtesy of Pixshark.com

Mycorrhizal fungi is the oldest fungi on earth and is found worldwide.

Planting Trees or Palms

Mulching

MULCHING BMPS

- When feasible, use mulches made from environmentally friendly sources or recycled materials.
- Do not pile mulch against a tree or around the bases of shrubs. Burying the crowns can lead to crown and root rot. Leave a clear space for air to reach the trunk.
- Maintain a 2"-3" depth of mulch after settling.

Image Courtesy of UF/IFAS Extension

During Establishment Period:

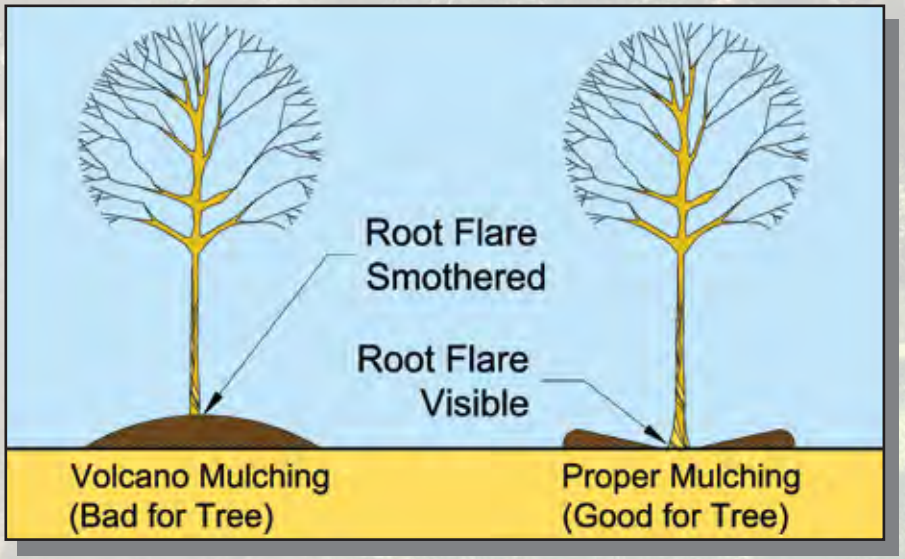
- Apply a layer of mulch up to the root ball.
- Keep mulch away from the trunk.
- Maintain 2 Ft. of mulch diameter for each 1 inch of tree trunk diameter.
- Use a minimum of 6 Ft. mulch diameter f or trees with trunk less than 3 inches.

After Establishment Period:

- Once established, the mulch area can be reduced in size.
- Even established trees are healthiest when grown in large mulched areas.

Image Courtesy of UF/IFAS Extension

Weed and turf suppression during establishment is essential!



Planting Trees or Palms

Mulching

Fresh wood mulch
can enhance pathogens.
Use only in areas that are already mulched.

Pine bark mulch
does not hold nitrogen.

FloriMulch
is made from recycled Melaleuca (an invasive tree) and is cured to eliminate pests.

Image Courtesy of Florida Native Plants Nursery

Hardwood mulch
may need additional nitrogen to prevent nitrogen deficiencies in nearby plants.

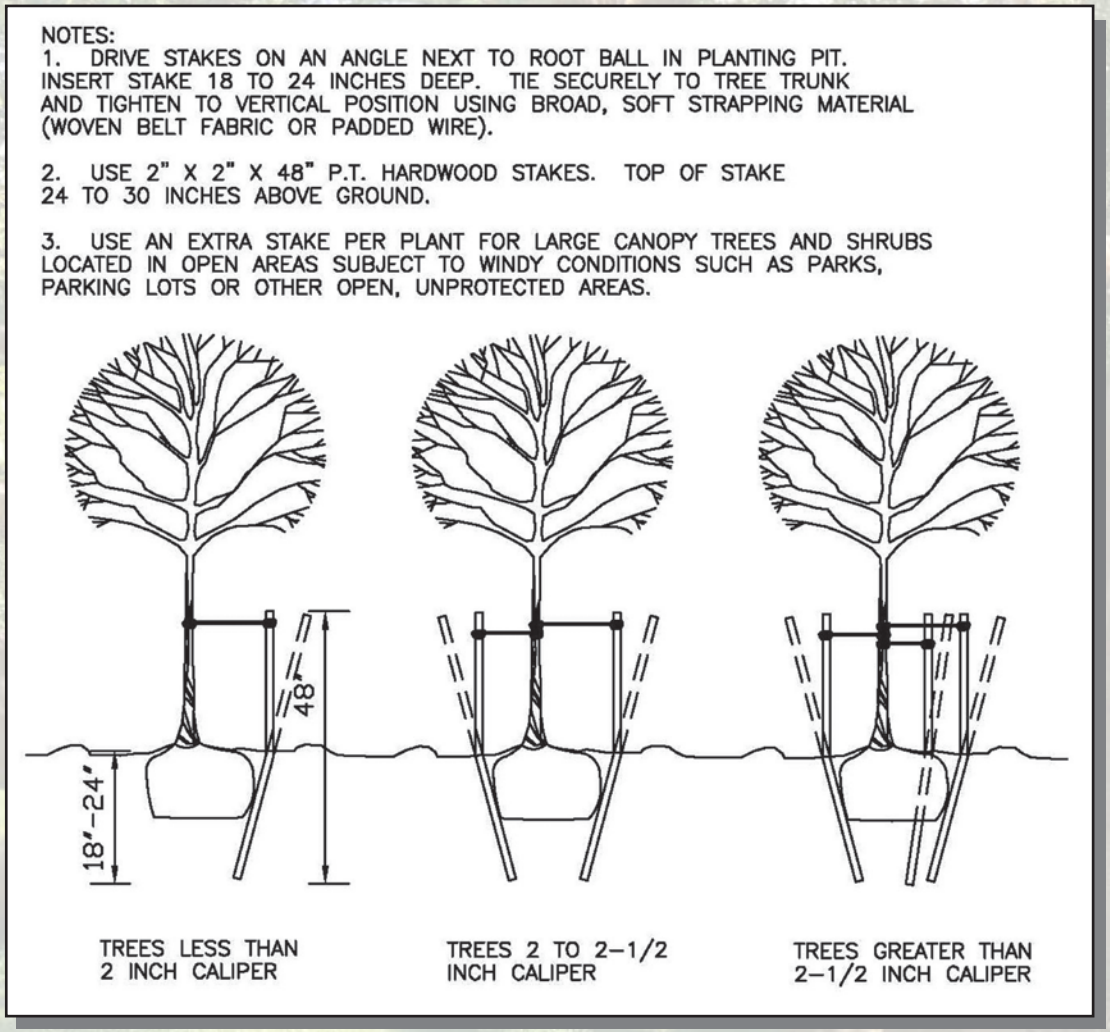
Free County mulches
are not sterilized and may contain seeds, pests or pathogens.

Composted yard waste
makes great mulch and may suppress infection.

Planting Trees or Palms

Staking Trees

At Time of Planting:



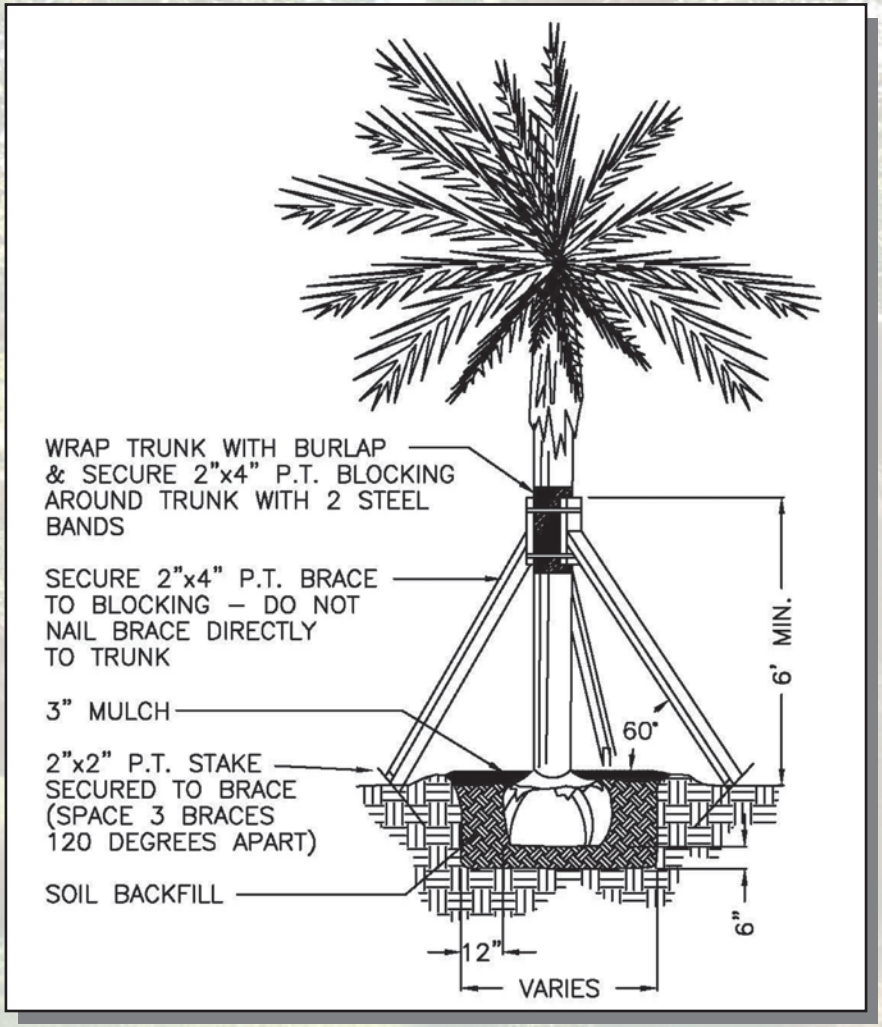
Remember:

- Use an extra stake for trees planted in windy areas.
- Tighten ties to secure tree.
- Remove stakes after tree is established.

Planting Trees or Palms

Staking Palms

At Time of Planting:



Remember:

- Wrap trunk with burlap for protection during staking.
- Use wooden blocks strapped to trunk for securing palm.
- Use 2 x 4's nailed to blocks for bracing palm.
- Remove braces after palm is established.

Establishing Trees and Palms

Irrigation

For Proper Establishment:

Irrigation schedules depend on size of nursery stock and desired objective*.

SIZE OF NURSERY STOCK	IRRIGATION SCHEDULE FOR	
	VIGOR	SURVIVAL
Less than 2 inch caliper	**Daily**: 2 weeks **Every other day**: 2 months **Weekly**: until established	Twice weekly for 2-3 months
2-4 inch caliper	**Daily**: 1 month **Every other day**: 3 months **Weekly**: until established	Twice weekly for 3-4 months
greater than 4 inch caliper	**Daily**: 6 weeks **Every other day**: 5 months **Weekly**: until established	Twice weekly for 4-5 months

* Establishment takes approximately 3 months (hardiness zones 10-11) to 4 months (hardiness zones 8-9) per inch trunk caliper.

Image Courtesy of UF/IFAS Extension

Research Shows:

- Trees establish quickest with light, frequent irrigation.
- Trees need 3 months of irrigation per 1 inch of trunk diameter to establish good root systems.
- Apply 2 gallons of water per 1 inch trunk diameter per each irrigation.
- Irrigation encourages and maintains a dominant leader.

Frequency:

- Establishment takes 3 to 4 months per 1 inch of caliper.
- Watering less than shown may adversely affect tree health and growth.

Establishing Trees and Palms

Irrigation

Improper Establishment:

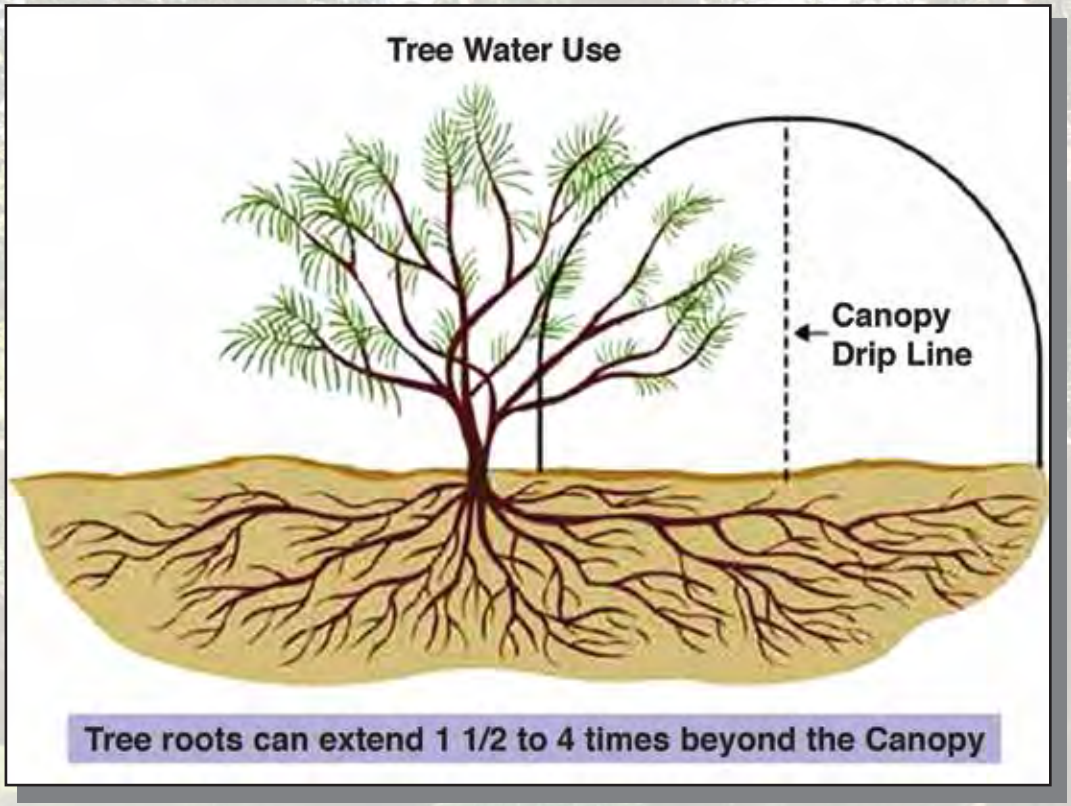


Image Courtesy of The Britton Fund, Inc. & ISA

Under-Irrigated Trees:

- Require more time to establish because roots grow slower.
- Develop co-dominant stems and double leaders that can split from the tree later.

Image Courtesy of UF/IFAS Extension

Most trees are under-irrigated during the establishment.

Maintaining Trees and Palms

Fertilizing

After Trees are Established:

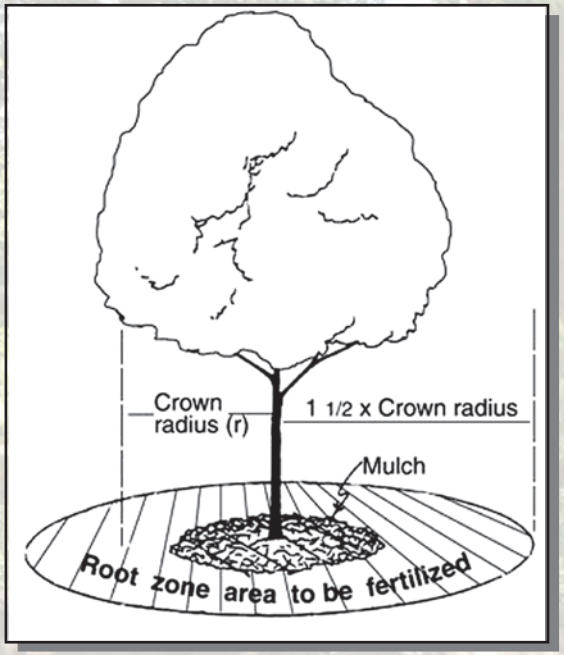


Image Courtesy of University of Minnesota Extension

Use Manganese Sulfate to treat "Frizzle Top".

Research shows that:

- Slow-release fertilizers are best.
- Trees use more fertilizer during the growing season.
- Properly fertilized trees may develop fewer dead branches.

After Palms are Established:

Recommended:

- Slow-release fertilizers.
- Fertilize 2 to 4 times per year.
- Palm specific fertilizers with micro-nutrients such as:
  - Iron
  - Manganese
  - Zinc
  - Copper
  - Boron

Adding soluble fertilizer to newly planted trees may injure or kill them.

Maintaining Trees and Palms

Fertilizer Certification:

On June 18, 2009: Florida Governor signed into law SB 494 requiring all commercial fertilizer applicators be licensed by January 1, 2014.

On May 24, 2011: the Manatee County Commissioners passed Fertilizer Ordinance 11-21 requiring all commercial applicators be certified by June 1, 2012.

This ordinance also requires that all other employees in the company (except clerical) take a Landscape Best Maintenance Practices class for Certification.

For More Information:
http://www.mymanatee.org/home/government/departments/parks-and-recreation/natural-resources/new-fertilizer-ordinance-root/commercial-fertilizer-info.html

Maintaining Trees and Palms

Fertilizer Restrictions

Seasons: No Nitrogen or Phosphorus allowed between June 1st and September 30th.

Weather: No Nitrogen or Phosphorus allowed if Severe Thunderstorms, Floods, Tropical Storms, Hurricanes or Heavy Rains are forecasted.

Application:

Phosphorus: DO NOT USE unless soil tests show deficiency and are filed with the County Administrator.

Nitrogen: USE LOWEST RECOMMENDED RATES in BMP Guidelines.

All granular fertilizers shall contain no less than 50% slow release nitrogen.

No nitrogen use for first 30 days after installation of new turf or landscape plants.

No fertilizer use within 10 Ft. from top of bank of any water body, wetland, or seawall.

Grass and landscape debris MUST NOT be washed, swept, blown, or deposited into storm water conveyance systems or roadways.

Immediately remove fertilizer applied, spilled, or deposited on impervious surfaces.

Maintaining Trees and Palms

Why Prune Trees:

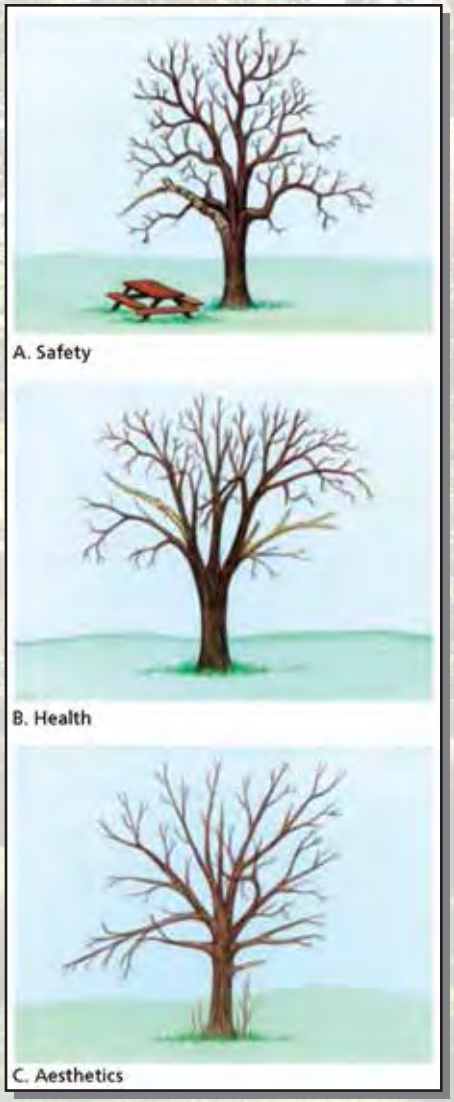


Image Courtesy of
USDA Forest Services

Safety (Fig. A.) Remove branches that:

- Cause injury or property damage.
- Interfere with lines of sight.
- Grow into utility lines.

Health (Fig. B.) Prune:

- Diseased or insect-infested wood.
- Crown to increase airflow.
- Crossing and rubbing branches.

Aesthetics (Fig. C.) Prune to:

- Enhance natural form and character.
- Stimulate flower production.

Maintaining Trees and Palms

Why Prune Trees:

Young Trees:

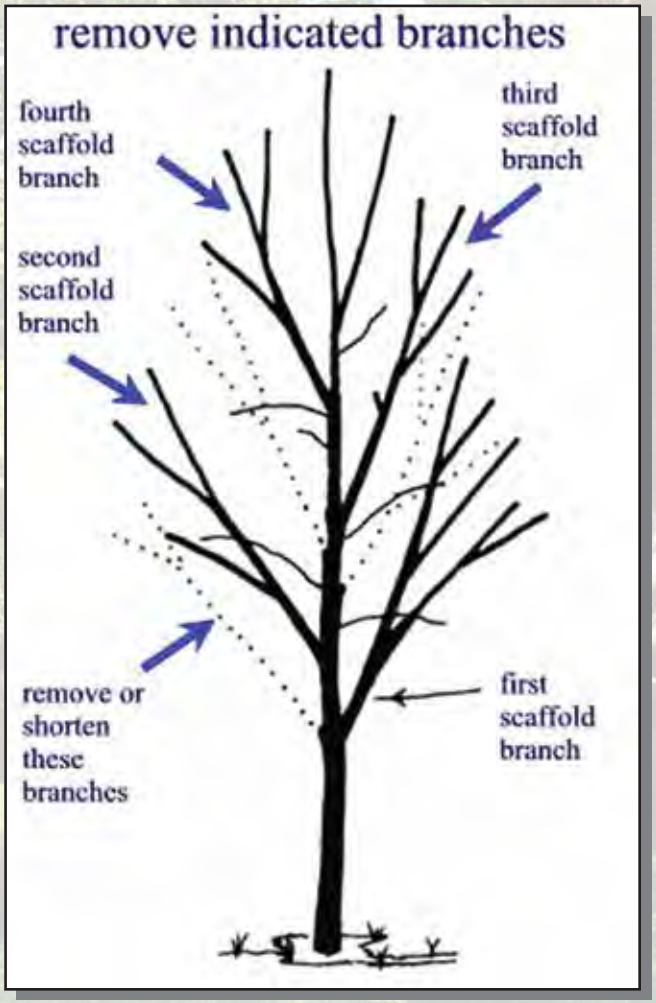


Image Courtesy of UF/IFAS Extension

Prune to Emphasize:

- Good structure.
- Dominant central leader.

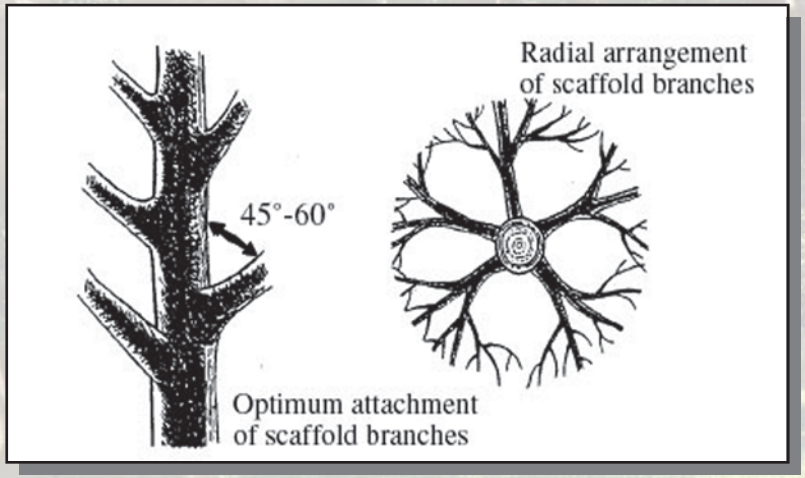


Image Courtesy of Virginia State University Extension

Maintaining Trees and Palms

Why Prune Trees:

Mature Trees:

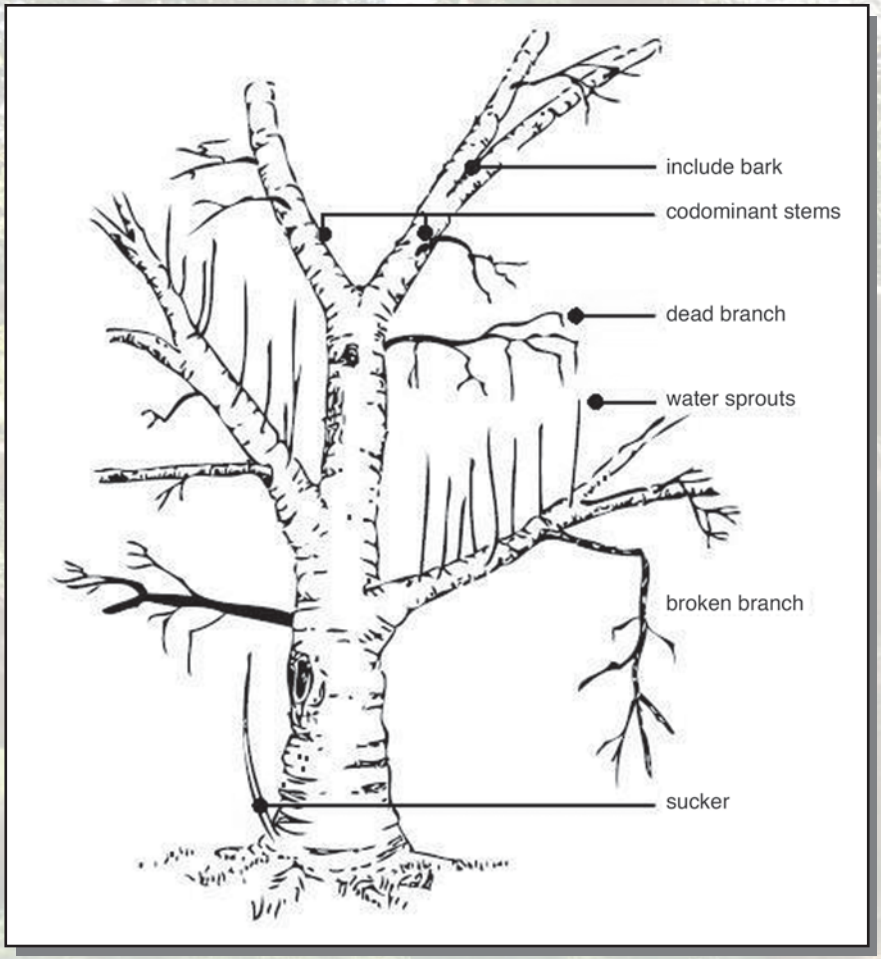


Image Courtesy of UF/IFAS Extension

Prune to Emphasize:

- Tree structure.
- Form.
- Health.
- Appearance.

Structural issues that cause trees to fail
Codominant stems
Included bark
Unbalanced canopy
Lions-tailing or over-lifting
Large lower limbs

Image Courtesy of UF/IFAS Extension

Maintaining Trees and Palms

When to Prune Trees:

Perform Pruning:

- At regular intervals throughout the life cycle of the tree.
- NOT just once in awhile!

Suggested minimum pruning cycle
Year 2 or 3
Year 5 or 6
Year 8 to 10
Year 13 to 15

Image Courtesy of UF/IFAS Extension

Uses of high and low pruning	
LOW PRUNING (5–20% of foliage removed)	**HIGH PRUNING (>20% of foliage removed)**
Mature or recently planted	Young, established trees
Cooler climates with short growing seasons	Warm climates with long growing seasons
Decay-prone species (poor compartmentalizers)	Decay-resistant species (good compartmentalizers)

Image Courtesy of UF/IFAS Extension

DO NOT remove more than 25% of tree crown . . . It robs the tree of energy!

Maintaining Trees and Palms

When to Prune Trees:

Hardwoods:

Prune hardwoods in dormant season:

1. Tree structure is easily seen.
2. Wound closure is maximized during growing season.
3. Reduces chance of disease transmission.
4. Discourages excessive sap flow from wounds.

Conifers:

Prune conifers any time.

Maintaining Trees and Palms

Common Types of Pruning for Trees:

4 Types:

1. Crown Cleaning.
2. Crown Thinning.
3. Crown Raising.
4. Crown Reduction.

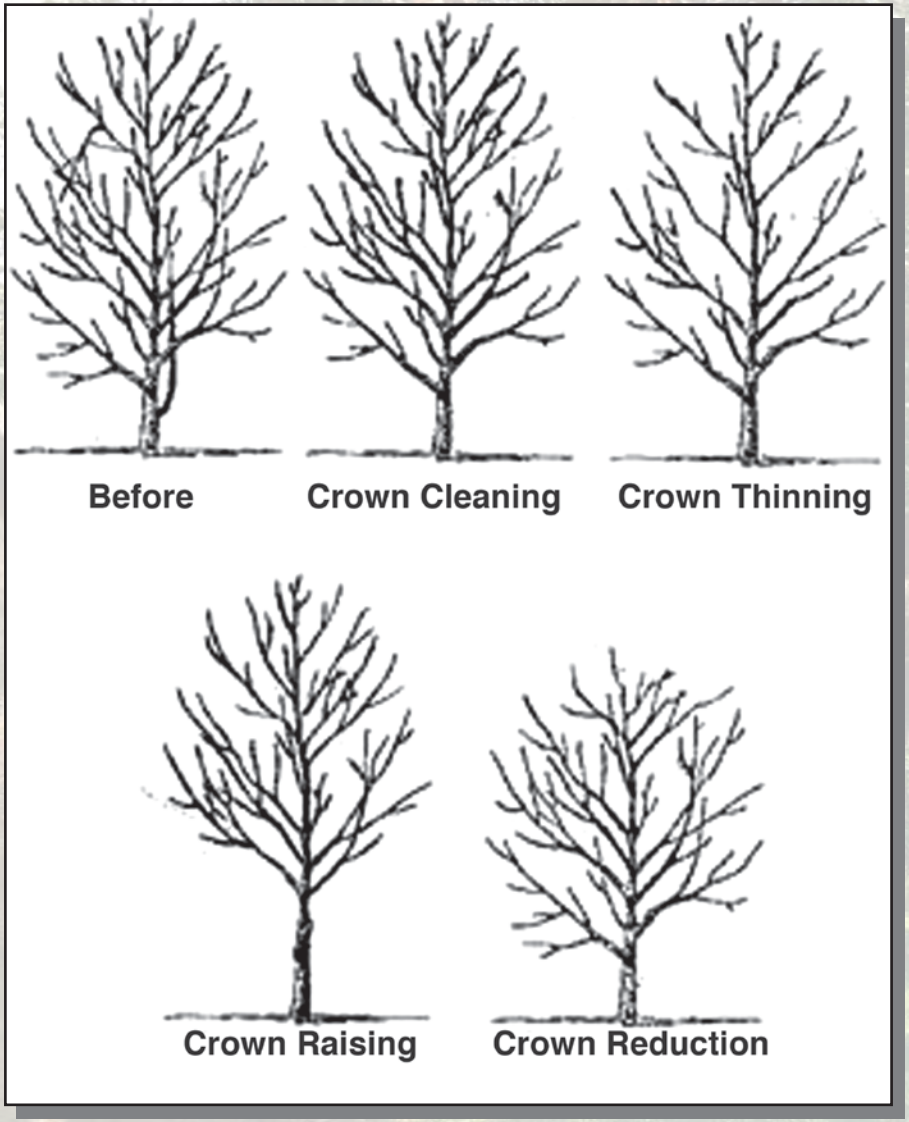


Image Courtesy of
Reading Borough Council, UK

Maintaining Trees and Palms

Common Types of Pruning for Trees:

1. **Crown Cleaning:**

Remove:

- Rubbing and crossed branches.
- Water sprouts.
- Broken and dead branches.
- Sucker growth around the trunk

Crown Cleaning and Thinning are often performed together.

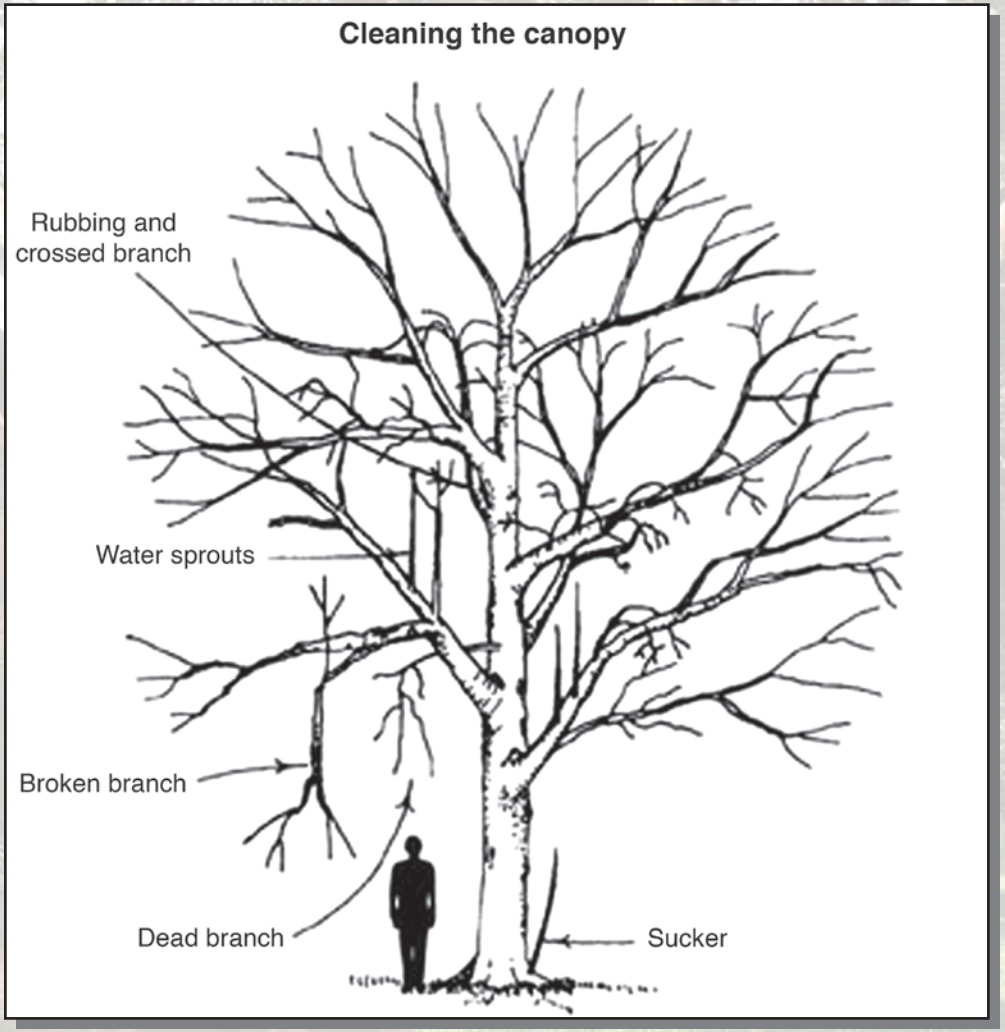


Image Courtesy of UF/IFAS Extension

Maintaining Trees and Palms

Common Types of Pruning for Trees:

2. **Crown Thinning:**

Perform to:

- Reduce Crown Density.
- Reduce Mechanical Stress on Limbs.
- Allow Air Flow and Sunlight.

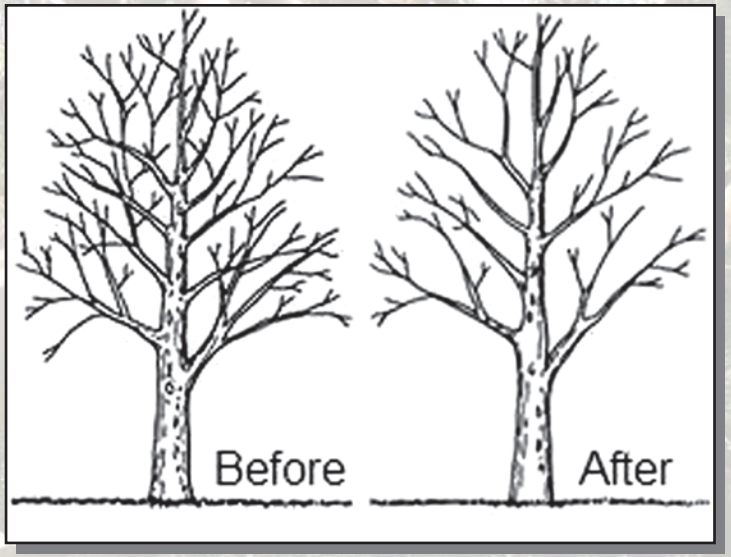


Image Courtesy of Iowa State University Extension

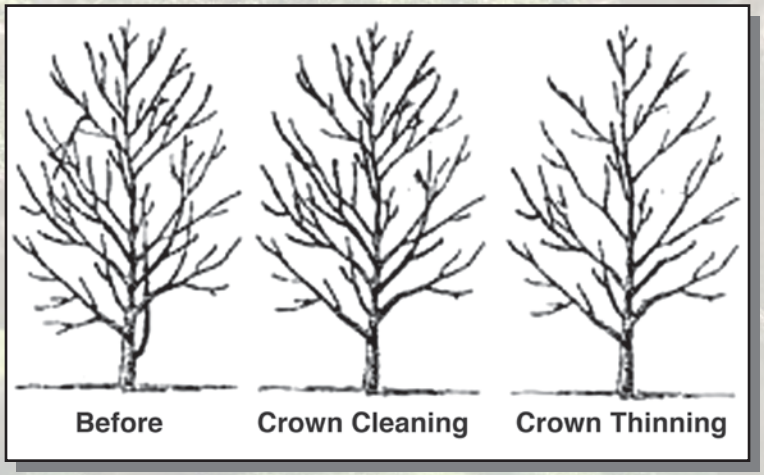


Image Courtesy of Reading Borough Council, UK

This is common practice for pruning mature trees in some regions.

Maintaining Trees and Palms

Common Types of Pruning for Trees:

3. **Crown Raising:**

Provides Clearance for:

- Pedestrians and Vehicles.
- Buildings and Structures.
- Lines of Sight.

Image Courtesy of Los Angeles Public Works Dept.

Maintaining Trees and Palms

Common Types of Pruning for Trees:

4. **Crown Reduction:**

Perform to:

- Reduce Tree Height.
- Avoid Conflicts with Overhead Utilities.

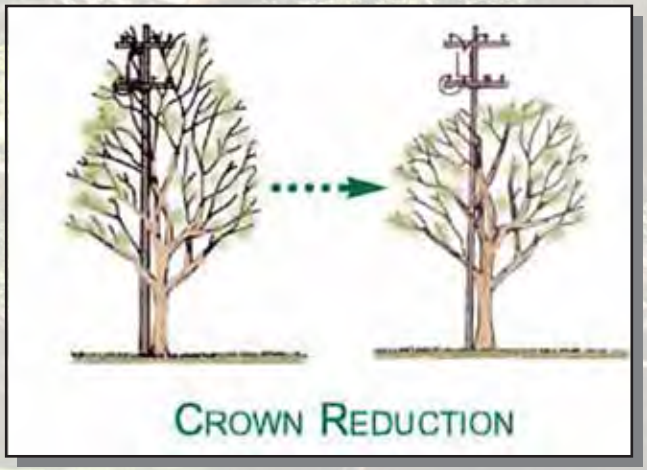


Image Courtesy of Los Angeles Public Works Dept.

Preferred alternative to TOPPING trees.

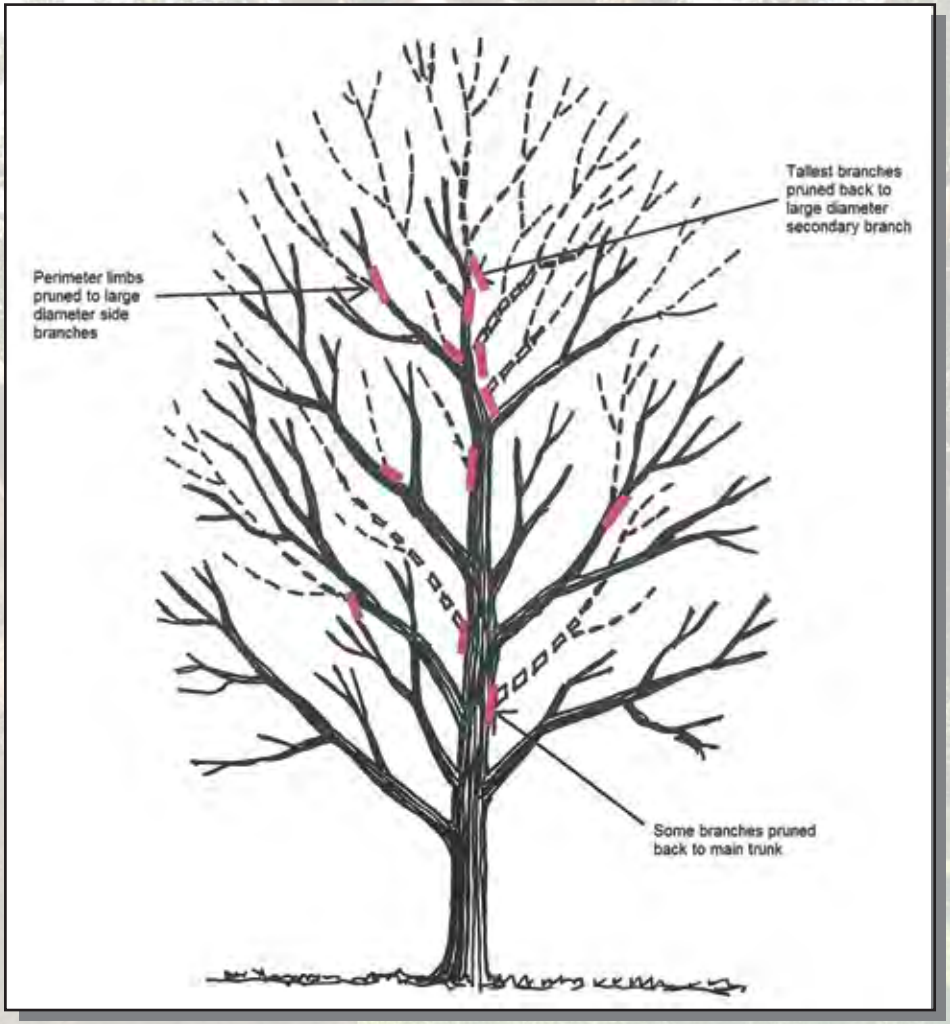


Image Courtesy of Tennessee Tech University

Maintaining Trees and Palms

Pruning Methods for Trees:

Important to:

- Use Proper Tools.
- Follow Proper Procedures.
- Obtain Professional Services.

Small Cuts:

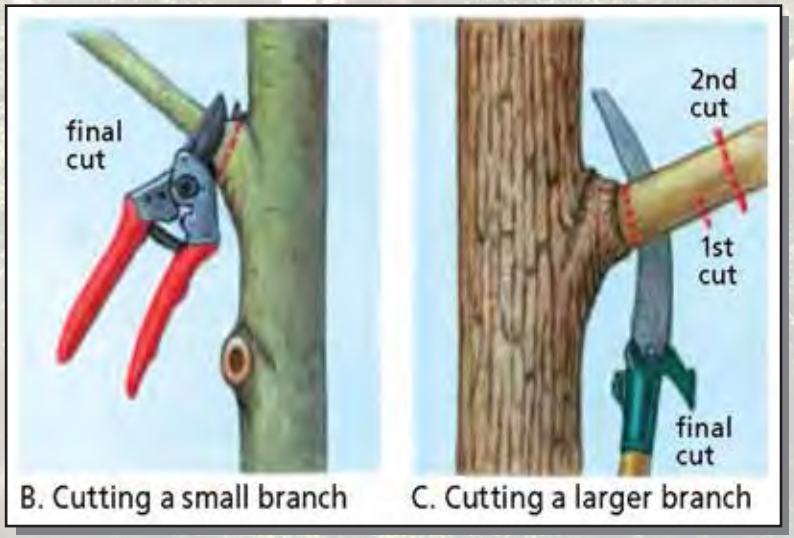


Image Courtesy of USDA Forest Services

Large Cuts:

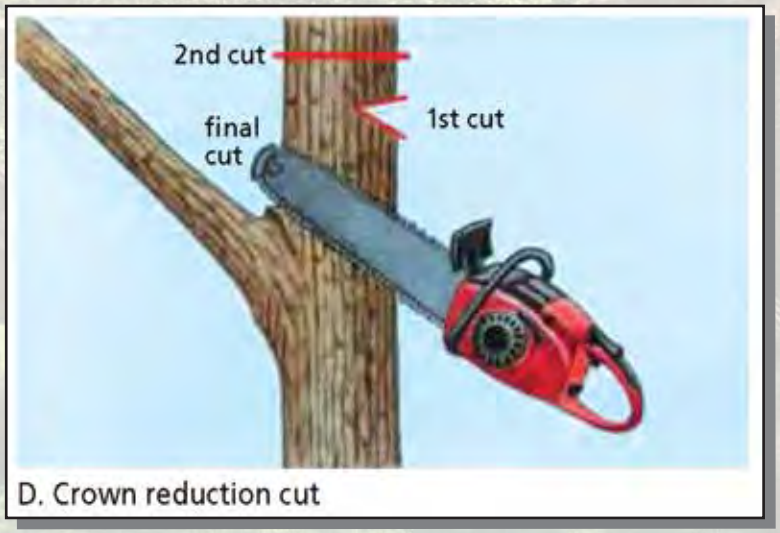


Image Courtesy of USDA Forest Services

A concentric ring of "woundwood" will form from proper pruning cuts after one growing season.

Maintaining Trees and Palms

Pruning Methods for Trees:

Live Branches:

Important to:

- Protect Branch Bark Ridge and Branch Collar.

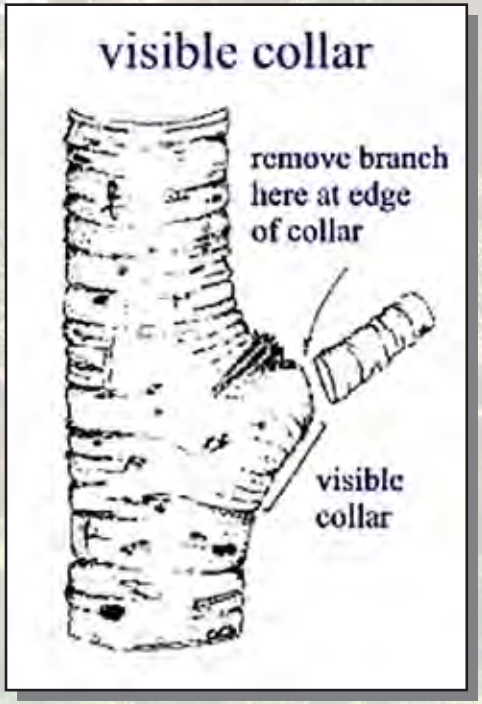


Image Courtesy of UF/IFAS Extension

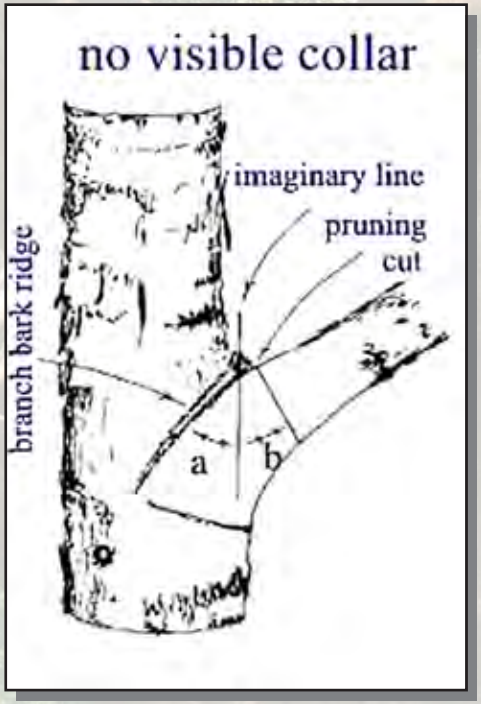


Image Courtesy of UF/IFAS Extension

Image Courtesy of UF/IFAS Extension

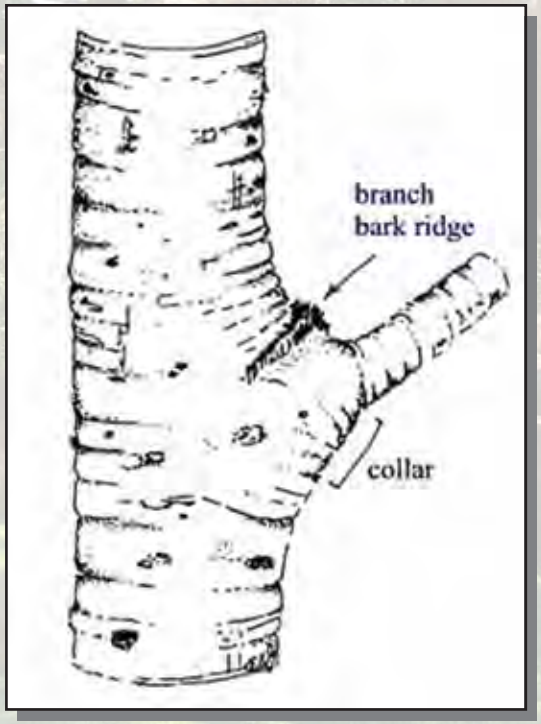
Maintaining Trees and Palms

Pruning Methods for Trees:

Dead Branches:

Cut Similar to Live Branches:

- Branch Bark Ridge and Branch Collar are usually easily identified.



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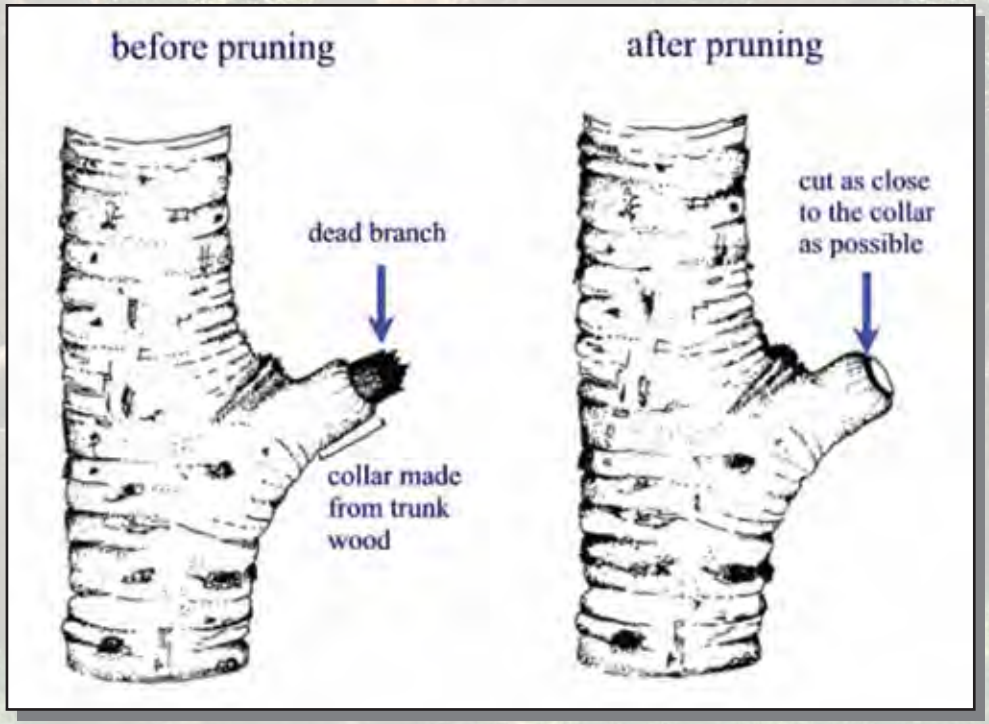


Image Courtesy of UF/IFAS Extension

Maintaining Trees and Palms

Improper Pruning Methods:

These Harm Trees:

Topping:

- Pruning large upright branches between nodes (Fig. A).

Tipping:

- Cutting lateral branches between nodes (Fig. B) .

Invariably result in improper growth or the death of branch.

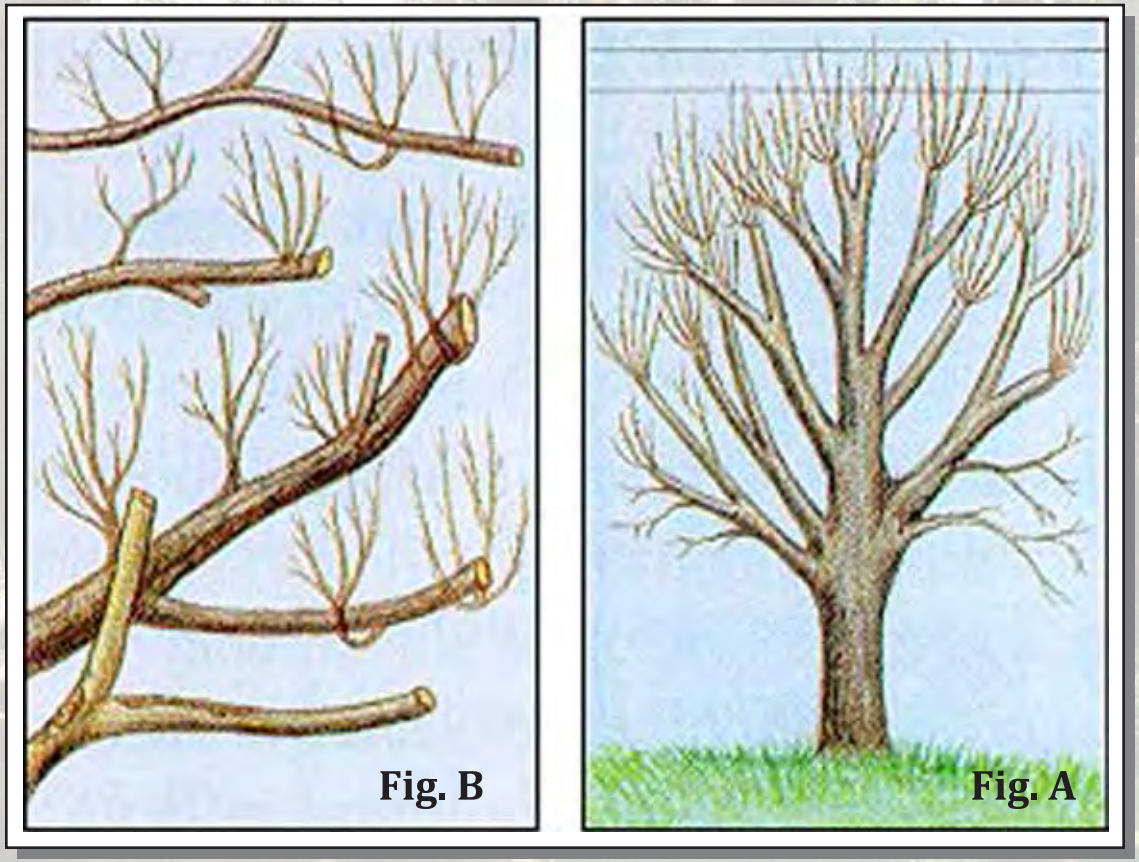


Image Courtesy of USDA Forest Services

Crown reduction pruning is the preferred method.

Improper Pruning Methods:

Improper Cuts:

- Cause bark ripping (Fig. C).

Flush Cuts:

- Injure stems and result in decay (Fig. D).
- Close with a slit; proper cuts close with a circle.

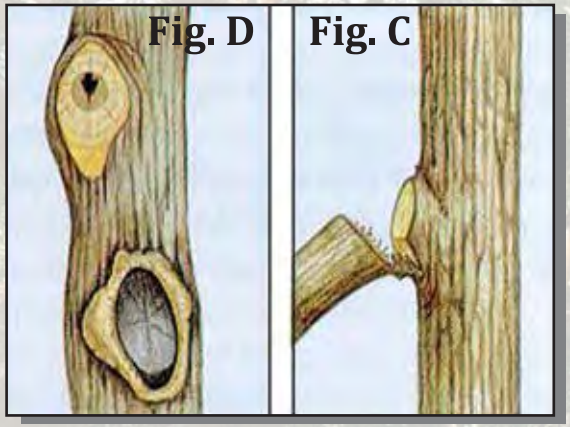


Image Courtesy of USDA Forest Services

Image Courtesy of UF/IFAS Extension

Freshly Cut

Old Wound

Maintaining Trees and Palms

Improper Pruning Methods:

These Harm Trees:

Stub Cuts:

- Delay wound closure (Fig. E).
- Provide entry to fungi that kills tissue.
- Delays or prevents “woundwood” formation.

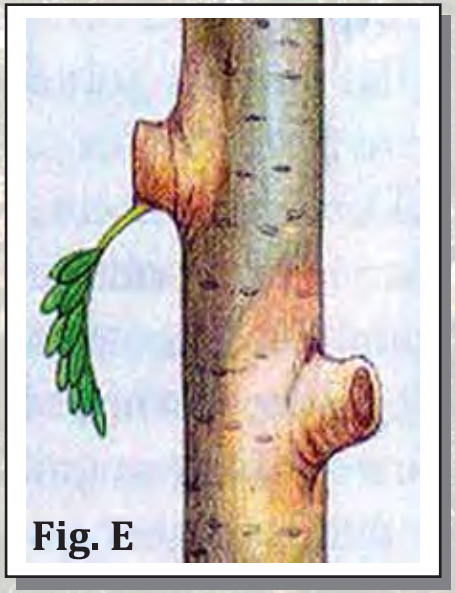


Fig. E

Image Courtesy of
USDA Forest Services

Old Wound

Old Wound

Maintaining Trees and Palms

Branch Protection Zone:

Branch to Trunk Size Ratio Matters for Pruning Cuts.

Small Branches:

- Decay from pruning cuts compartmentalize before reaching the main trunk.

Large Branches:

- Decay can continue to the main trunk and affect the trees health.

Proper Pruning Cuts Heal Properly!

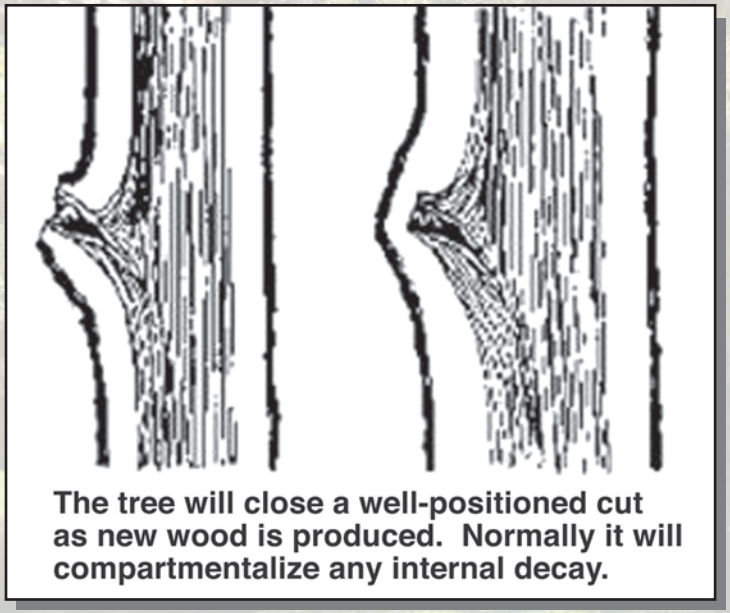


Image Courtesy of International Society of Arboriculture

Consult with a Certified Arborist before pruning!

Maintaining Trees and Palms

Pruning Palms:

Branch to Trunk Size Ratio Matters for Pruning Cuts.

Reasons to Prune:

- Remove Dead/Dying Fronds.
- Safety and Visibility.
- Prevent Damage to Buildings and Structures.
- Reduce Fire Hazard.
- Remove Fruit and Seeds.

Remember:

- **Save** Green and Yellow Fronds.
- **Remove ONLY** Brown Fronds.

AVOID Pruning Whenever Possible!

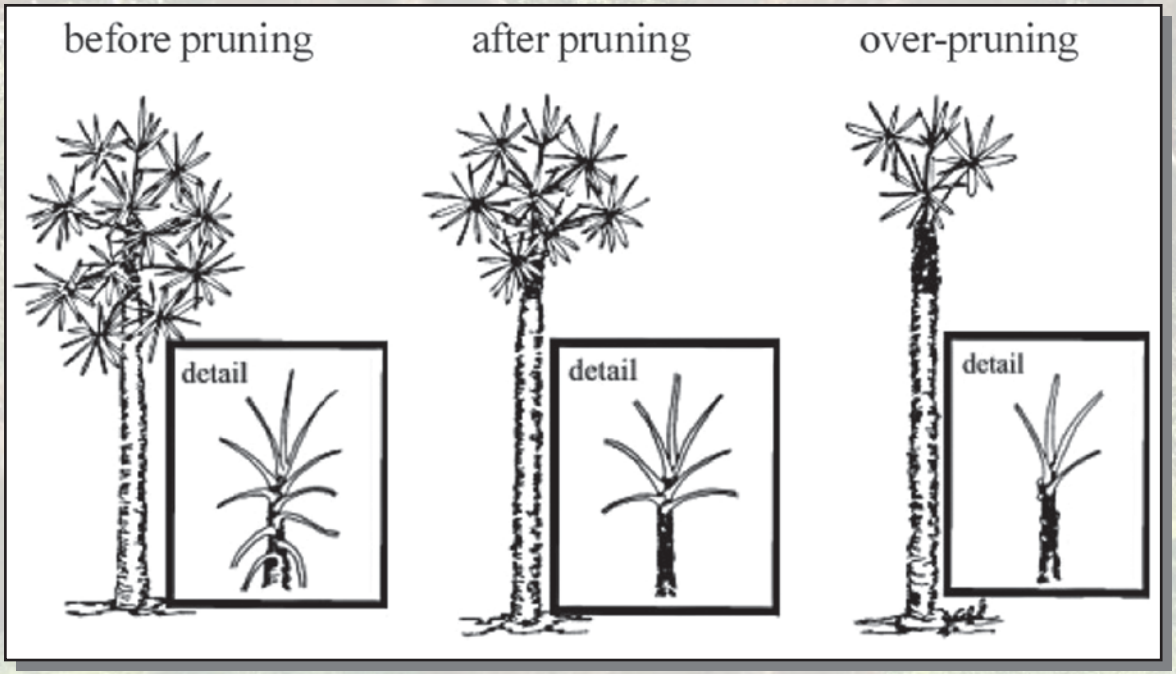


Image Courtesy of UF/IFAS Extension

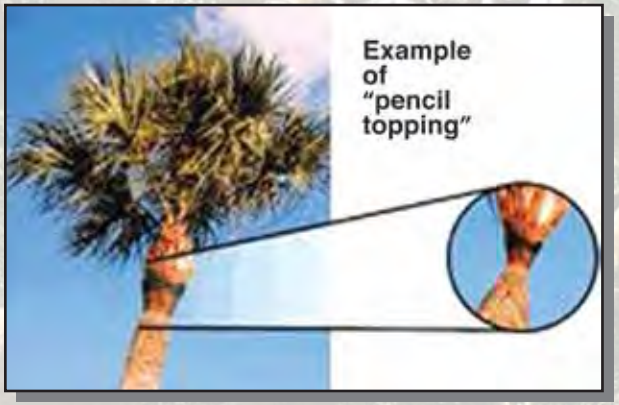
NEVER Top Palms – It Kills Them

Maintaining Trees and Palms

Pruning Palms:

Over-Pruning Results in:

- Slower Growth.
- Slower Maturation.
- Narrowing of Trunk.
- Decline in Frond Size.
- Nutrient Loss.

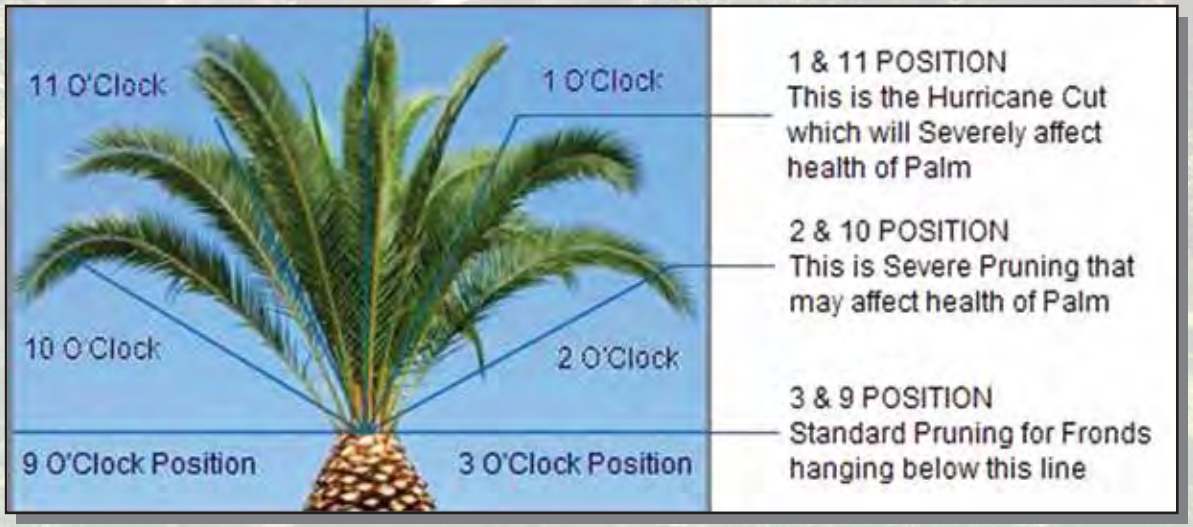


Over-Pruning
Robs Palms of Nutrients and Compromises Growth!

NEVER
Over-Prune Palms!

Palm fronds are naturally cantilevered to survive high winds.

DO NOT
storm prune!



The City of Bradenton Tree & Land Preservation Board

Selecting, Planting, and Maintaining Trees and Palms in Central Florida

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