

"Never doubt that a small group of thoughtful committed citizens can change the world. It's the only thing that ever has."

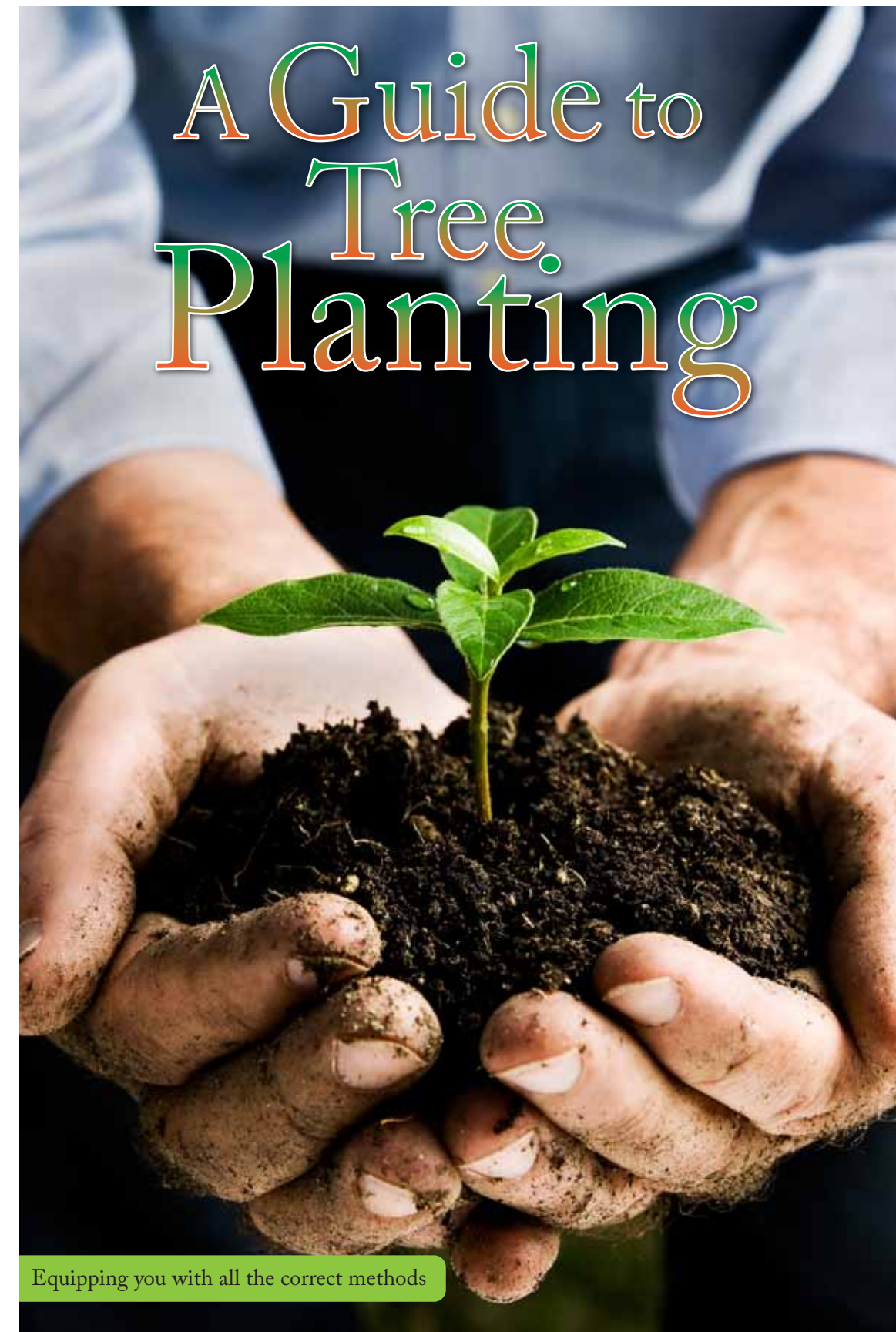
Margaret Mead



Compiled by:



NATIONAL CONSERVATION
COMMISSION




*Created to help you do a better job
planting and caring for your trees.*

*Following these basic guidelines,
your trees will grow faster and live longer,
while providing many benefits to you,
your home and your community.*

*Adapted from:
“A Tree Planting Guide for Puerto Rico
& Other Caribbean Countries”*

*by
USDA Forest Service
Department of Agriculture*



I think that I shall never see
a poem as lovely as a tree.

A tree whose hungry mouth pressed
against the earth's sweet flowing breast.

A tree that looks at God all day
and lifts her leafy arms to stay.

A tree that may in summer wear
a nest of robins in her hair.

Upon whose bosom dew* has laid
who intimately lives with the rain.

Poems are made by fools like me,
but only God can make a tree.

by: Joyce Kilmer

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What are trees?

Trees are living organisms - many tiny micro-scopic cells bond to form what we see as a large plant with a tall wood stem called a trunk. The trunks of most trees range from 12 to 15 feet in height and support a canopy of leaves high above the soil. Roots anchor them into the soil. The roots also take nutrients from the soil. These are necessary for the tree to grow.

Why do we plant trees?

Trees-

- Add beauty
- Create an environment beneficial to our peace of mind
- Reduce air pollution
- Save energy by reducing air-conditioning needs
- Create a habitat for wild life
- Reduce noise
- Increase the value of your property, and cool the earth.



A single tree improves any surroundings. Likewise, a street planted with trees has a good character and become a desirable place to live. The cool shade cast from their leaves and picturesque shadows that result, beautify our houses and communities.

Trees also release oxygen into the atmosphere which we breathe. Their leaves absorb pollutant gases and cleanse our air. Their roots prevent soils from eroding and stabilize our environment. Further, trees provide homes for a multitude of other organisms that share our planet.

- Thin the tree crown to let more sunlight through to the ground.
- Thin the tree crown to reduce wind resistance, preventing damage during storms.

Branch Removal

Learn to recognize the branch collar - a swollen area where the branch attaches to the trunk of the tree. The branch collar is a natural barrier to the spread of decay into the trunk. Any final branch cut should be made just outside the branch collar.

Heavy branches should be removed in a three-step method to prevent peeling of the wood and bark down the side of the trunk, below the final cut.

Step 1

Undercut the branch about twelve inches from the trunk. This cut should be about half way through the branch.

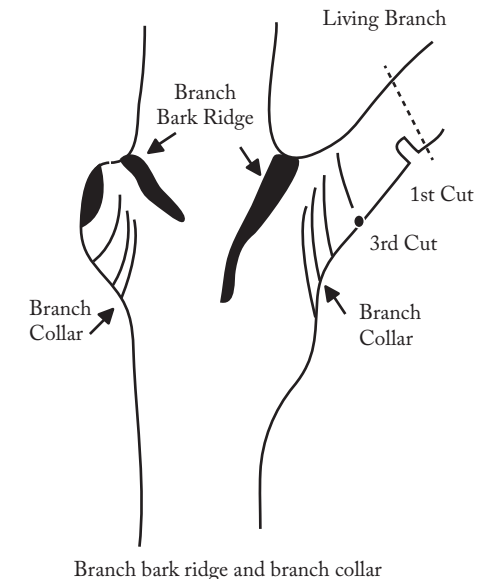
Step 2

Make the next cut two inches farther out on the branch from the top side. This will drop the branch without damage to the trunk.

Step 3

Make the final cut by removing the branch stub. Make this cut next to the branch collar. Never cut off any of the swollen area where the branch attaches to the trunk.

When removing dead branches, do not disturb the living wood which is in the branch collar. **Do not paint the cuts.** Tree paint does not provide any protection to the tree.



Reduces the potential for property damage.

Homeowners can do their own pruning on smaller trees. However, larger trees should be pruned by trained arborists who are tree-care professionals. Pruning large trees often require special equipment such as ropes, tree climbing equipment and hydraulically operated bucket trucks.



When pruning trees, do not prune any limbs that could come in contact with electrical wires. Tree limbs conduct electricity and could cause a fatal shock. Call your utility representative and arrange for their crews to remove these branches.

Avoid topping trees - it is best to remove it and plant the right tree for the site. Get professional advice from your local plant Nursery or Garden Centre.

Properly Applied Pruning Techniques -

- Remove dead, dying and diseased branches.
- Remove the least desirable branch when two branches are crossing or rubbing.
- Remove branches growing towards the centre of the tree.
- Remove sucker branches or water sprouts near the base of the trunk
- Remove branches competing with the central leader branch.

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How do trees grow?

Tree growth occurs in specialized parts of the plant called *meristems*. Meristems are found in the root and shoot tips and inside the tree's bark. Here, cells divide and allow the tree to increase in size, height and width.

Cell division, the basis of plant growth, requires energy. Plants make their own food, called *carbohydrate*, by *photosynthesis*, which occurs in the green leaf. Carbohydrate break-down, or *respiration*, releases energy for growth to occur.

The requirement for *photosynthesis* and *respiration* become the requirements for growth. Photosynthesis requires carbon dioxide, water, sunlight and a



favourable temperature. *Respiration* needs oxygen. Both processes use nutrients like - nitrogen and iron - from the soil.

Trees require sunlight, water, carbon dioxide from the atmosphere, oxygen, various nutrients and a favourable air temperature for survival and growth. When we plant and maintain a tree, we must ensure that it receives these commodities in optimum quantities for good growth to occur.

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How to plant a tree

Planting Stock

Trees that come from a Plant Nursery are usually container grown or bareroot stock. Bareroot stock are plants dug directly from the Plant Nursery Field and the roots are covered with a moist material and enclosed in a package or paper bag. Container-grown means that the plant had been grown in a container above ground for most of its life.

Steps to Tree Planting

1. Plant trees during the rainy season. Dig a hole about 6 to 12 inches wider and deeper than the root mass of the plant. Pile the soil nearby to amend and use for the backfill. Loosen the soil at the bottom of the hole to improve drainage.



2. Add and mix organic matter, such as compost or well-rotted manure, to both the backfill and loosened soil at the bottom of the hole. Mix about 3 inches for the organic matter with the loosened soil at the bottom of the hole. The soil volume of the stockpile will increase about one-third.

Organic matter is necessary to lighten clay soils that are common in Barbados and to hold water in coastal sandy soils. It does this by increasing soil pore spaces where oxygen and water can collect. It also stores nutrients for the plant to use and nourishes soil animal life.

3. Remove the tree from its container. Gently loosen tangled root masses and prune away broken and damaged roots.
4. Return some soil to the hole. Create a mound to place the tree on so that it will sit higher than the adjacent soil level when planted. Place the tree on top of the mound. Roots should have plenty of space to grow.

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the year. Prune trees growth rates are faster during wet seasons, and pruning can occur most of the year. Prune trees grown solely for the foliage almost anytime. Avoid pruning them at the beginning of a long dry spell, especially when supplemental water is unavailable.

Prune trees that flower on the wood produced during the previous growth season, such as Flamboyant (*Delonix regia*), Frangipani (*Plumeria rubra*), and Rose of Sharon (*Cochlospermum vitifolium*), after they finish flowering. These trees become dormant early in the new year, drop their leaves, and then begin to flower with the first spring rains. Prune flowering cassias such as *Cassia biflora*, *Cassia multijuga* and *Cassia spectabilis*, at the beginning of the rainy season.

When pruning, first remove dead, diseased or damaged branches. Make cuts back to the main branch with clean, sharp tools. Do not leave stubs or snags. Short stubs never heal and provide as source for insects and disease infection. Next, remove limbs that cross one another or rub against each other. Also, remove limbs that grow from the plant's exterior into its interior.

Pruning Established Trees

Properly pruned trees will usually live longer and remain healthier than unpruned trees.

Periodic Pruning -

- Improves the tree's appearance and form
- Reduces hazards and damage during storms.
- Helps prevent insect and disease problems.
- Reduce hazards to the general public.

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Pruning

Some pruning may be needed at the time of planting to remove:

- a. Dead or damaged branches
- b. Crossed or rubbing branches
- c. Narrow or v-shaped crotches
- d. Multiple main systems (try for only one main stem).



After one growing season, prune the tree to desired form. As a young tree develops, periodic pruning can be used to control the height and shape of the tree.

The time to prune is dependent on the kind of plant. Seasonal boundaries - such as temperature, day-length and rainfall - are less defined in the Caribbean than in temperate climates. Plants can grow all year, although growth rates are faster during wet seasons, and pruning can occur most of

5. Backfill three-quarters of the hole with amended soil. Tamp down soil to remove large air pockets. Water. Add more amended soil. Tamp again. Add more. Mound up soil 6 inches high, two feet out from the trunk to form a ring or a basin to hold water.
6. Place a 3-inch layer of shredded organic matter or compost around the base of the tree as mulch. Bagasses from the sugar industry is available, but is best only after it is turned into well rotted compost. Lawn clippings should be dried before use. Mulches conserve soil water, cool soil temperatures, inhibit weed growth and improve soil structure upon their decomposition. Always mulch!!

Where to Plant

- Remember that most trees grow between 12 - 15 feet, so give trees plenty of room to grow. Place trees where they will not be crowded after they reach full size.
- Stay away from phone and power lines.
- Plant a good distance away from houses. Do not block views at street corners and traffic signs.
- Give roots room to grow. Different trees have different root-growth patterns. Some trees are much better suited than others for planting along street curbs and sidewalks. If in doubt, consult your local Plant Nursery.

Do not plant trees over or beside underground sewage and water lines.

Maintenance of Newly Planted Trees

Water newly transplanted trees at regular intervals throughout the year. Crumble soil through your fingers to test if it is dry. Apply water to the dry soil surface. The amount of water needed is the amount that the soil will absorb. Stop water application when it no longer seeps into the soil. Fewer deep



waterings are better than more frequent shallow waterings. *Fertilize* trees the second wet season after planting. Incorporate a complete fertilizer (N-P-K), like 12-12-17+2, at the rate of 2 pounds for each one inch of trunk diameter. Trunks with diameters of less than 3 inches require one-half pound for each one-inch of diameter. Make hole 15 to 24 inches deep and 18 to 24 inches apart around the drip line of the tree (the area beneath the ends of the longest

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branches) with a soil auger or crowbar.

Weed regularly. Weeds steal water and nutrients from the trees. Constant removal is necessary.

Staking the Tree

Stake newly planted trees only if needed.

Trees usually do better if they can become established without staking. But in many cases trees need staking because of one or more of the following reasons.

- a. To protect the trunk from equipment
- b. To anchor the root system from the wind
- c. To support a limber trunk in an upright position.

Usually two wooden stakes are placed on opposite sides of the tree:-

- Use 2 x 2 inch stakes and keep them as short as possible, but long enough so the tree stands upright.
- Tie the tree at only one level.
- Trunk and branches should not be allowed to rub against the stakes.
- Use old garden hose with wire running through them, nylon bands or other non-abrasive material, wrap loose enough to allow for growth.
- Use stakes for shortest possible time - usually one year.

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