

## Minimize hazards from tree branches

Trees can conduct electricity, and when tree branches grow into overhead power lines they can cause a power outage or a potential safety hazard to anyone contacting the tree. Wind-blown tree branches can also damage the service line that provides electricity to your home, possibly rubbing away the weather coating on the line or affecting the connection to your home.

Because electricity can arc several feet to reach a pathway to the ground, only professionally trained and certified individuals should trim trees that are touching or in close proximity to power lines.

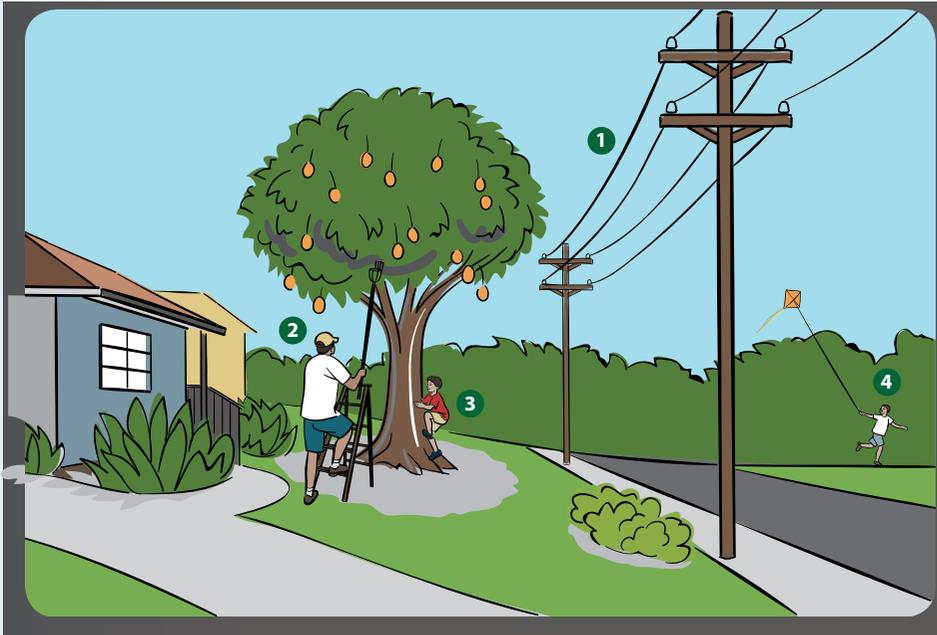
It is your responsibility to inspect and, if necessary, hire a line clearance qualified contractor to trim trees on your property that are in contact with or in close proximity to power lines or to the service line that delivers power to your home.

Upon request, electric utility staff can assist by de-energizing and lowering your service line.

For your safety use caution around overhead power lines.

- 1 Avoid coming into contact with overhead power lines, either directly or indirectly.
- 2 Keep yourself and any ladder, tool, pole, or fruit picker, at least ten feet away from power lines.
- 3 Do not let children climb a tree that has a power line running through its branches or near its branches.
- 4 Keep items such as antennas, kites, model airplanes, and metallic balloons away from power lines.

If you see something caught in a power line, do not try to free it. Call your utility's trouble line for help. If someone has received an electric shock from being too close to a power line, call 9-1-1 for immediate assistance.



## Useful resources and phone numbers

### O'ahu

[www.hawaiianelectric.com](http://www.hawaiianelectric.com)  
Trouble Line, Power Outages: 1-855-304-1212  
Trees in Power Lines: 543-7836

### Hawai'i Island

[www.hawaiianelectric.com](http://www.hawaiianelectric.com)  
Trouble Line, Power Outages,  
Trees in Power Lines: 969-6666

### Maui County

[www.hawaiianelectric.com](http://www.hawaiianelectric.com)  
Trouble Line, Power Outages,  
Trees in Power Lines  
Maui: 871-7777  
Moloka'i and Lāna'i toll-free: 1-877-871-8461

### Hawai'i One Call Center

Call Before You Dig Utility Notification Center  
[www.callbeforeyoudig.org](http://www.callbeforeyoudig.org)  
811 or 1-866-423-7287

### Kaulunani Urban and Community Forestry Program

State of Hawai'i Department of Land and Natural Resources,  
Division of Forestry and Wildlife  
<http://dlnr.hawaii.gov/forestry/lap/kaulunani>  
(808) 395-7765

### Arbor Day Hawai'i

[www.arbordayhawaii.org](http://www.arbordayhawaii.org)

### University of Hawai'i at Mānoa

College of Tropical Agriculture and Human Resources (CTAHR)  
[www.ctahr.hawaii.edu](http://www.ctahr.hawaii.edu)

### University of Hawai'i at Mānoa

CTAHR Cooperative Extension Service  
UH Urban Garden Center  
[www.ctahr.hawaii.edu/ougc](http://www.ctahr.hawaii.edu/ougc)

### University of Hawai'i at Mānoa

CTAHR Cooperative Extension Service  
Statewide UH Master Gardener Program  
[www.ctahr.hawaii.edu/UHMG](http://www.ctahr.hawaii.edu/UHMG)

### O'ahu Master Gardeners

[OahuMg@ctahr.hawaii.edu](mailto:OahuMg@ctahr.hawaii.edu)  
(808) 453-6055

### Kaua'i Master Gardeners

[jhsilva@hawaii.edu](mailto:jhsilva@hawaii.edu)  
(808) 274-3478

### Maui Master Gardeners

[MauiMg@ctahr.hawaii.edu](mailto:MauiMg@ctahr.hawaii.edu)  
(808) 244-3242 ext. 228

### East Hawai'i Master Gardeners

[marisolq@hawaii.edu](mailto:marisolq@hawaii.edu)  
(808) 981-5199

### West Hawai'i Master Gardeners

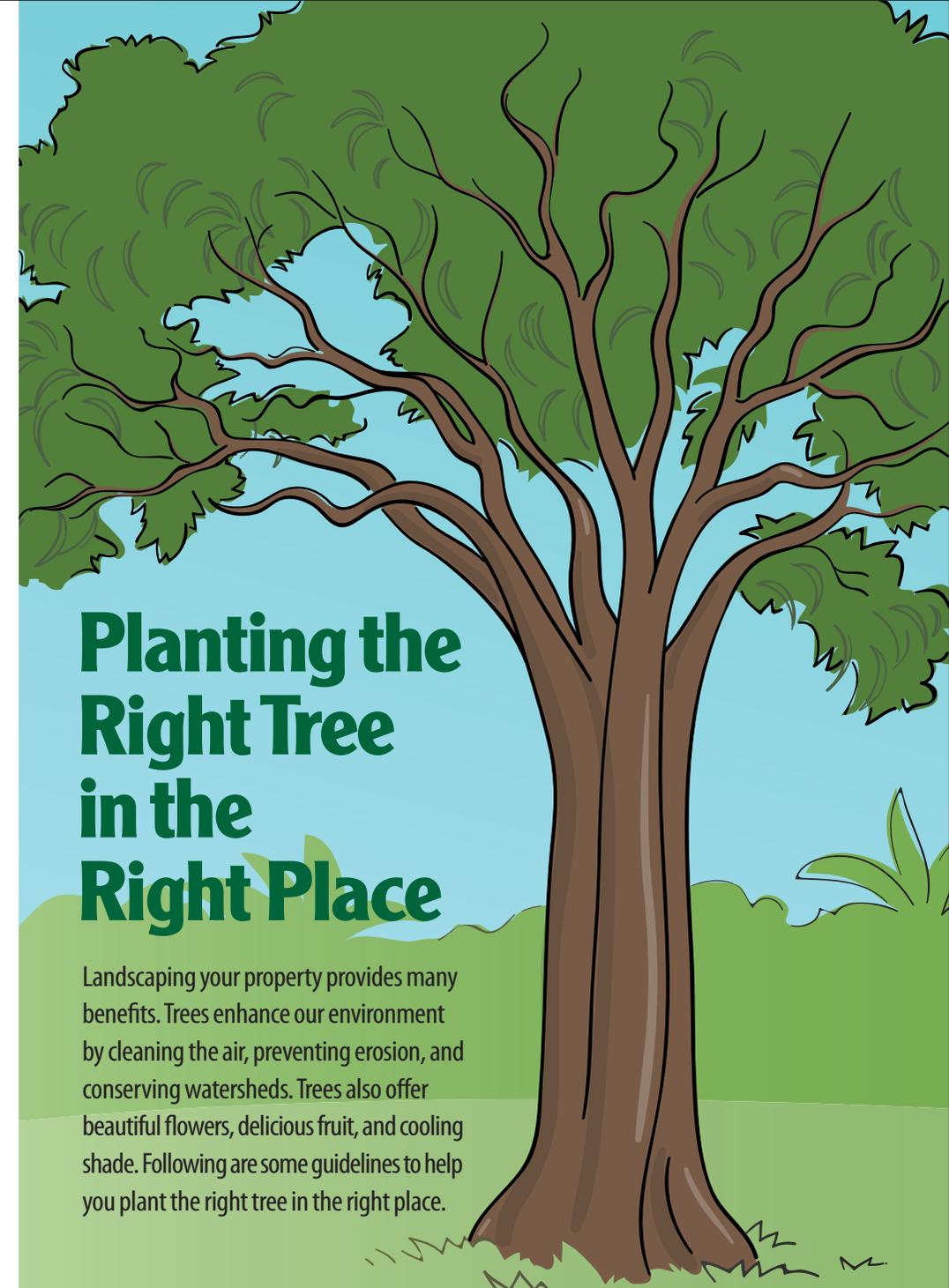
[KonaMg@ctahr.hawaii.edu](mailto:KonaMg@ctahr.hawaii.edu)  
(808) 322-4892



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## Planting the Right Tree in the Right Place

Landscaping your property provides many benefits. Trees enhance our environment by cleaning the air, preventing erosion, and conserving watersheds. Trees also offer beautiful flowers, delicious fruit, and cooling shade. Following are some guidelines to help you plant the right tree in the right place.



## Maximize the cooling effect from trees

A tree's shade and the evaporation of moisture on its leaves can reduce surrounding air temperatures by as much as 9° F. A well-planned landscape can make a home more comfortable and can reduce an unshaded home's summer air-conditioning costs by 15 percent to 50 percent.

To select a tree that meets your needs, is right for your area, and is not invasive to our environment, consult a landscaper, arborist, nursery, or reference book. Estimate the full height and shape of the tree when it reaches maturity to help you determine the best location to plant it.

To provide cooling shade year-round, select trees that don't lose their leaves seasonally. To use shade effectively, you need to know the size, shape, and location of the moving shadow a tree will cast. Note the sun's angle in the summertime, as well as the wintertime.

**1** To help cool the trade winds entering your home, plant trees along the windward side of your home.

**2** When planting trees close to your home, driveway, or retaining wall, select trees with nonaggressive roots.

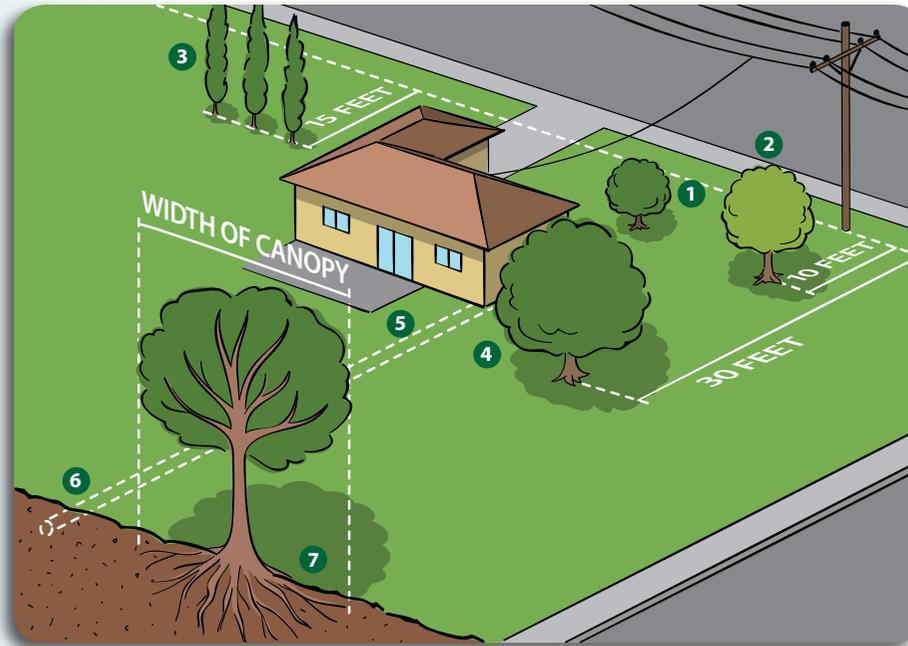
**3** Plant tall trees with spreading crowns to the south of your home to provide maximum shade over your home's roof, taking care to not shade solar panels.

**4** Plant medium-sized trees on the west side of your home to shade it from the lower afternoon sun angles.

**5** Hedges or shrubs can also shade your home's walls. However, avoid having dense foliage growing immediately next to your home, especially if wetness or continual humidity is a problem. It is best to allow winds to flow around your home.

**6** To reduce heat radiation and cool the air around your home, plant trees, shrubs, and groundcover to shade the ground and pavement near your home; perhaps shade your driveway, a sidewalk, or your lanai.

If you have an air conditioner, shade it to increase its efficiency by as much as 10 percent, but avoid blocking air flow around the condenser.



## Safely site trees on your property

There are important safety considerations when deciding where to plant trees. As trees grow, their branches and roots spread out, so you need to avoid planting them too close to overhead power lines or over underground power, gas, water, or sewer lines.

*If you are planting a tree near overhead power lines, keep these guidelines in mind.*

- 1** Trees that mature at heights below 10 feet may be planted under power lines.
- 2** Trees that mature at heights between 20 and 30 feet should be planted at least 10 feet, horizontally, away from overhead lines.
- 3** Taller column-shaped trees should be planted at least 15 feet from overhead lines.
- 4** Taller trees with spreading crowns that mature at heights greater than 30 feet should be planted at least 30 feet from overhead lines.

*Also take underground utility lines into consideration when planting a tree.*

- 5** Locate and identify all underground utility lines before you start digging. For help call the Hawai'i One Call Center, a week in advance, toll-free at 8-1-1.
  - 6** Do not plant any trees or shrubs directly over underground power lines.
  - 7** Plant a tree at enough distance from an underground line that at maturity the canopy of the tree does not extend over the line. The roots with the greatest potential to cause damage are usually situated in the area under the tree's canopy.
- Consider the location of sidewalks, driveways, and walls that also could be damaged by the tree's roots. And to avoid potential damage to your house caused by wind knocking the tree down, plant it at a distance greater than its expected height at maturity.

## Plant your tree properly

In our tropical to subtropical climate, trees can be planted any time of year as long as sufficient water is available. If providing enough water to your new tree is a consideration, plant it at the beginning of the rainy season, which starts in November and continues into March.

Following are some pointers to help you successfully plant a tree.

- 1** Dig a shallow, wide planting hole. To allow new roots to spread out, the hole should be three times as wide as the diameter of the tree's root ball. To provide a firm base for the tree, only dig the hole as deep as the height of the root ball.
- 2** Remove the container and all wrappings or ties from around the tree. Handle the tree by the root ball, not the trunk. If the roots are circling the root ball, carefully straighten them. If necessary, vertically cut the root mass in three or four locations to separate the roots and allow them to grow outward.
- 3** Set the tree in the hole so that the trunk flare, where the roots start to spread

out at the base of the tree, will be slightly visible once the hole has been filled. Make sure the tree is set straight in the hole.

**4** Gradually fill the hole with soil, gently and firmly packing the soil as you do. To make sure there are no air pockets, add the soil a few inches at a time and settle it with water. Ensure the tree is firmly planted. Do not fertilize the tree when planting it.

**5** Support the tree with stakes only if it is planted in a windy area. If necessary, place two stakes at opposite sides of the tree and use ties made of a wide, flexible material. Position the ties around the lower half of the tree to support it without damaging the trunk. Remove the ties and stakes after one year.

**6** Put a two-inch to four-inch layer of mulch around the base of the tree. You can use composted wood chips, peat moss, or leaf litter. Be sure to leave a couple of inches of space around the tree's trunk without mulch to avoid decaying the trunk.

Water the tree at least once a week, or more frequently if necessary, to keep the soil moist. Take care not to over-soak the soil, which will cause the tree's leaves to turn yellow or to fall off.

