# Species Selector (Beta) Utility


Tools for assessing and managing
Community Forests

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A cooperative initiative between:





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## Introduction

To optimize the environmental benefits of trees, an appropriate list of potential tree species needs to be identified based on the desired environmental effects. To help determine the most appropriate tree species for various urban forest functions, a database of 1,585 tree species (see Appendix A) was developed by the USDA Forest Service in cooperation with Horticopia, Inc (2007). Information from this database can be used to select tree species that provide desired functional benefits. This information, in conjunction with local knowledge on species and site characteristics, can be used to select tree species that increase urban forest benefits, but also provide for long-tree life with minimal maintenance.

## Purpose of Species Selection Program

The purpose of the species selection program is to provide a relative rating of each tree species at maturity for the following tree functions, based on a user's input of the importance of each function (0-10 scale):

- Air pollution removal
- Air temperature reduction
- Ultraviolet radiation reduction
- Carbon storage
- Pollen allergenicity
- Building energy conservation
- Wind reduction
- Stream flow reduction

This program is designed to aid users in selecting proper species given the tree functions they desire.

## Methods

### Tree Information

Information about the plant dimensions, and physical leaf characteristics (e.g., leaf size, type, and shape) of 5,380 trees, shrubs, cactus and palms were derived from the Horticopia database (www.horticopia.com). Based on this database and literature searches, the species were classified by type, and all plants that were not classified as a tree or large shrub / small tree were removed, leaving 2,236 plant species classified as trees. Of these trees, data (either from the species itself, or genera, family, order or class averages) were obtained for all necessary variables for 1,585 species. The following information was obtained for each tree species.

**Hardiness zone**. Of the 1,585 species, 527 species had hardiness zone information in the Horticopia database based on USDA hardiness zones. As the database contained both maximum and minimum hardiness zones information that sometimes contained fractional zone information (e.g., 4.5), the zones with fractions were rounded up (e.g., 5) for minimum

hardiness and down (e.g., 4) for maximum hardiness to be conservative in the hardiness zone information.

For species without hardiness zone information, literature was searched for hardiness zone values. Information for an additional 70 species was found in Dirr (1990) and Sunset (1985). However, the hardiness zones information in these publication did not match exactly with the USDA hardiness zone classes and extrapolations were made to the closest corresponding zone. As there is some uncertainty to these hardiness zone, species with these hardiness values are denoted with one asterisk.

For 983 of the remaining species, the hardiness zone was estimated based on genera average of minimum and maximum hardiness zone based on Horticopia database and information from Dirr (1990) and Sunset (1985). The average value was rounded to nearest hardiness zone class (1 -11). These species are denoted with two asterisks due the moderate uncertainty of the hardiness zone.

For the last 5 species, the hardiness zone was estimated based on family average of minimum and maximum hardiness zone based on Horticopia database and information from Dirr (1990) and Sunset (1985). The average value was rounded to nearest hardiness zone class (1 -11). These species are denoted with three asterisks due the high uncertainty of the hardiness zone.

As hardiness zone is not used in any of the calculations, the uncertainty of the estimate is not an issue for the species ranking. However, the hardiness zone information is used to limit the amount of species given in the final list, based on the hardiness zone of the city selected in the program. Thus, the hardiness of the actual species listed in the final output should be viewed based on the certainty of the hardiness zone information. Users should use their local knowledge of the plants hardiness to a region and the plants appropriateness for the area (e.g., invasive characteristics, maintenance needs, etc.) to help make the selection of the right species for the right location that include information on desired ecosystem services.

**Tree size and shading coefficients**. Median species height and crown width (midpoint between maximum and minimum estimates) at maturity were derived from the Horticopia database. Crown height of each tree species was estimated as 0.78 of median tree height based on field measurements of urban trees.

Species shading coefficients (percent light intensity intercepted by foliated tree crowns) were derived from Nowak (1996). If data on individual species were not known, genus averages were applied. If genus data were not available, family average data were applied.

**Leaf area and leaf biomass**. Leaf area and leaf biomass of individual tree species were calculated using regression equations for deciduous urban species (Nowak 1996). For deciduous trees that were too large to be used directly in the regression equation, average leaf-area index (LAI: $m^2$ one-sided leaf area per $m^2$ projected ground area of canopy) was calculated by the regression equation for the maximum tree size based on the appropriate height-width ratio and shading coefficient class of the tree. This LAI was applied to the ground area ($m^2$) occupied by the tree to calculate leaf area ($m^2$).

The regression equation was derived for trees with a height-to-width ratio between 0.5 and 2.0. For deciduous trees with height-to-width ratios that were too large or too small to be used directly in the regression equations, tree height or width was scaled downward to allow the crown to the reach maximum (2) or minimum (0.5) height-to-width ratio. Leaf area was calculated using the regression equation with the maximum or minimum ratio; leaf area was

then scaled back proportionally to reach the original crown volume. Leaf area index was not allowed to exceed 15 or be less than 1.

For conifer trees (excluding pines), average LAIs per height-to-width ratio class for deciduous trees with a shading coefficient of 0.91 were applied to the tree's ground area to calculate leaf area. The 0.91 shading coefficient class is believed to be the best class to represent conifers as conifer forests typically have about 1.5 times more LAI than deciduous forests (Barbour et al. 1980). As the average shading coefficient for deciduous trees is 0.83 (Nowak 1996), 1.5 times the 0.83 class LAI is equivalent to the 0.91 class LAI. Because pines have lower LAIs than other conifers and LAIs that are comparable to hardwoods (e.g., Jarvis and Leverenz 1983; Leverenz and Hinckley 1990), the average shading coefficient (0.83) was used to estimate pine leaf area.

Leaf biomass was calculated by converting leaf-area estimates using species-specific measurements of g leaf dry weight/$m^2$ of leaf area based on the literature and field measurements (e.g., Bacon and Zedaker, 1986; Box, 1981; Cregg, 1992; Gacka-Grzesikiewicz, 1980; McLaughlin and Madgwick, 1968; Monk et al., 1970; Reich et al., 1991; Shelton and Switzer, 1984)

**Relative transpiration rates**. As actual transpiration rates are highly variable depending upon site or species characteristics, and very limited data exist on transpiration rates for various species under comparable conditions, relative transpiration factors were estimated for each species based on estimated monthly water use (Costello and Jones, 1994). Each species was classified into one of seven categories in a "water need" classification scheme: High water need (H); High to Moderate need (MH); Moderate need (M); Moderate to Low need (ML); Low need (L); Low to Very Low need (LVL); and Very Low need (VL). If the species was not included on water use species list, the water need was estimated from water use classifications of other species in the same genus or family.

A relative transpiration factor scale (Table 1) was developed, following an assumption that trees requiring greater amounts of water (e.g., species in "H" or "MH" water use classes) transpire at higher rates than those needing less water ("L" to "VL" classes). The relative transpiration factors were generated from the maximum estimated species water need (inches per month) associated with each water use classification (Costello and Jones, 1994).

**Table 1. Relative transpiration factors corresponding to tree species' water use classification.**

| Water Use Classification | Max. Water Use (in. per month) | Relative Transpiration Rate | Transpiration Factor |
|---|---|---|---|
| High need (H) | 0.9 | High | 1.50 |
| High to moderate need (MH) | - | Moderate to high | 1.25 |
| Moderate need (M) | 0.6 | Moderate | 1.00 |
| Moderate to low need (ML) | - | Moderate to low | 0.75 |
| Low need (L) | 0.3 | Low | 0.50 |
| Low to very low need (LVL) | - | Low to very low | 0.35 |
| Very low need (VL) | 0.1 | Very low | 0.20 |

**Physical characteristics of leaves.** To help rate relative differences in particulate pollution removal by trees (particulate matter less than 10 microns; PM10), leaf and crown characteristics of each species were summarized from the literature and given a score between 0 and 2, with the higher the score indicating a higher probability of particle capture. The basic premise was that dense and fine textured crowns and complex, small, and rough leaves would capture and

retain more particles than open and coarse crowns, and simple, large, smooth leaves (Little, 1997; Smith, 1981). Six crown and leaf characteristics were assessed:

Crown density (from Horticopia database): Open crown = 0; medium density = 1; dense crown = 2.

Crown texture (from Horticopia database): Coarse = 0, Medium = 1, Fine = 2.

Leaf complexity (from Horticopia database): Simple = 0, pinnately or palmately compound, trifoliate, or palmate = 1, bi- or tri-pinnately compound = 2. This variable is used as a proxy for leaflet size, as the compoundness of the leaf increases, the leaflet size tends to decrease relative to the entire leaf size.

Leaf Size (from Horticopia database): Median leaf size was calculated as the average of the minimum and maximum leaf size classes. If leaf size > 4″ = 0; 2-4″ = 1, <2″ = 2

Leaf Surface Roughness (Dirr 1990; Elias 1980; Stein et al 2003; Williamson et al 1985; University of Connecticut 2005): For surface ratings, average surface characteristics were used if surface characteristics differed between young and old leaves. Dull, smooth, glossy, lustrous, shiny, glabrous = 0; Ciliate, silky, velvety, pubescent, glaucous, pilose, felty, waxy, downy, sometimes hairy, slightly hairy, fuzzy = 1; Rough, resinous, hairy, tomentose, scabrous, sticky, sticky hairs, setose, floccose, scaly, villous, scurfy, glutinous, tufts (in axils of veins), "with hairs", long hair, or densely hairy = 2. Conifers were given a score of 1, unless noted as shiny or notably smooth surface (0) or scale-like, ridged or glacous (2).

Leaf Margins (from Horticopia database): Entire, terminal spine, spiny, sinuate, or undulate = 0; Cleft, crenate, dentate, incised, lobed, parted, pectinate, revolute, serrate, or unknown = 1; Ciliate, serrulate, double serrate, or filamentous =2.

Leaf and crown scores were added to produce a potential leaf score between 0 and 12. Leaf scores were standardized between 0 and 100. These leaf / crown scores will be used to help determine standardized removal rates (per leaf surface area) among species. These standardized rates will vary based on the assumption of scoring system, which is highly subjective and uncertain, but assumes that denser crowns, with rougher and textured leaves, and smaller leaves or leaflet will increase particulate removal relative to more open crowns with smoother, larger leaves. Little (1977) notes that rough or hairy leaf discs collected 5 micron particles seven times more effectively than smooth leaves, and that leaves of complex shape with large circumference to area ratio could be expected to collect particles most efficiently. More recent unpublished work with PM2.5 particles indicate that crown density may only have minimal to no impact on particle removal; leaf veins and margins influence particulate removal; and that dense pubescence on leaves may act similar to smooth leaf surfaces in terms of removal (Whitlow, pers. comm., 2007). Thus, estimating relative particulate removal based on leaf characteristics is an approximation based on the assumptions given. Much more research is need on how species leaf and crown differences affect particulate removal rates.

**Species VOC emissions**. Base species emission factors (isoprene and monoterpene) were derived from Benjamin et al., 1996; Geron et al., 2001; Kesselmeier and Staudt, 1999; and Isebrands et al 1999. If species data were not available, the genera average for the species values in the literature were averaged with genera values from Geron (1994) (if available) to produce a mean genera value. If genus-specific information were not available, average emission values from the next lowest taxon were used to estimate family, order, subclass, or class values (e.g., average genera values were used to produce family values). For isoprene

estimates, 36% of the species used family, order, subclass, or class values; for monoterpene, 37% of the species used family, order, subclass, or class values.

Species leaf biomass was multiplied by corresponding emission factors to produce emission levels standardized to 30°C and photosynthetically active radiation (PAR) flux of 1,000 µmol $m^{-2}$ $s^{-1}$. Standardized emissions are converted to actual emissions based on light and temperature correction factors (Geron et al. 1994) based on average in-leaf daytime weather and pollution concentration data from 53 U.S. cities in 1994 (Table 2).

VOC emission (E) (in µgC $tree^{-1}$ $hr^{-1}$ at temperature T (K) and PAR flux L (µmol $m^{-2}$ $s^{-1}$)) for isoprene and monoterpenes are estimated as:

$$E = B_E \times B \times \gamma$$

where $B_E$ is the base genus emission rate in µgC (g leaf dry weight)$^{-1}$ $hr^{-1}$ at 30°C and PAR flux of 1,000 µmol $m^{-2}$ $s^{-1}$; $B$ is species leaf dry weight biomass (g) and:

$$\gamma = [\alpha \cdot c_{L1} L / (1 + \alpha^2 \cdot L^2)^{\frac{1}{2}}] \cdot [\exp[c_{T1}(T - T_S) / R \cdot T_S \cdot T] / (0.961 + \exp[c_{T2}(T - T_M) / R \cdot T_S \cdot T])]$$

for isoprene where L is PAR flux; α = 0.0027; $c_{L1}$ = 1.066; R is the ideal gas constant (8.314 $K^{-1}$ $mol^{-1}$), T(K) is leaf temperature, which is assumed to be air temperature, $T_S$ is standard temperature (303 K), and $T_M$ = 314K, $C_{T1}$ = 95,000 J $mol^{-1}$, and $C_{T2}$ = 230,000 J $mol^{-1}$ (Geron et al. 1994; Guenther et al. 1995; Guenther 1997).

For monoterpenes: $\gamma = \exp[\beta(T - T_S)]$ where $T_S$ = 303 K, and β = 0.09.

**Table 2. U.S. cities used for national average estimates for temperature, wind speed, photosynthetically active radiation (PAR) flux, transpiration, and pollutant flux (1994). These cities represent the top 50 most populated cities in the United States having adequate meteorological and EPA air quality data for UFORE analyses (Nowak and Crane 2000). Additional cities were also added to the list to sufficiently cover all geographic regions of the country.**

| CITY | POLLUTANTS |
|---|---|
| Albuquerque, NM | CO, $NO_2$, $O_3$, $PM_{10}$ |
| Atlanta, GA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Baltimore, MD | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Baton Rouge, LA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Boston, MA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Bridgeport, CT | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Buffalo, NY | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Charleston, WV | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Chicago, IL | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Cincinnati, OH | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Cleveland, OH | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Columbia, SC | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Columbus, OH | CO, $O_3$, $PM_{10}$, $SO_2$ |
| Dallas-Ft. Worth, TX | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Denver, CO | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Detroit, MI | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| El Paso, TX | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Fresno, CA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |

| | |
|---|---|
| Honolulu, HI | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Houston, TX | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Indianapolis, IN | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Jacksonville, FL | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Jersey City, NJ | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Kansas City, KS-MO | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Los Angeles, CA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Louisville, KY | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Memphis, TN | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Miami, FL | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Milwaukee, WI | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Minneapolis, MN | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Nashville, TN | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Newark, NJ | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| New Orleans, LA | CO, $NO_2$, $O_3$, PM, $SO_2$ |
| New York, NY | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Norfolk-Virginia Beach, VA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Oklahoma City, OK | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Omaha, NE | CO, $O_3$, $PM_{10}$, $SO_2$ |
| Philadelphia, PA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Phoenix, AZ | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Pittsburgh, PA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Portland, OR | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Providence, RI | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Sacramento, CA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| St. Louis, MO | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Salt Lake City, UT | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| San Diego, CA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| San Francisco, CA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| San Jose, CA | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Seattle, WA | CO, $O_3$, $PM_{10}$, $SO_2$ |
| Tampa, FL | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Tucson, AZ | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Tulsa, OK | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |
| Washington, DC | CO, $NO_2$, $O_3$, $PM_{10}$, $SO_2$ |

As the emission of volatile organic compounds from a species varies with air temperature, the extent to which a tree lowers air (canopy, and therefore leaf) temperatures through transpiration can have a direct effect on its VOC emissions. The change in air temperature per hour due to transpiration (in degrees Celsius) was estimated, and the adjusted temperature was used to recalculate the net emission of VOCs from each species.

To estimate differences in individual species temperature effects, an estimate of average tree cover effects on air temperature was used. Given reported reductions in mid-day air temperatures from an aggregate effect of all trees in a local area ranging from 0.036°C to 0.2°C per percent increase in cover (Simpson 1998) and a national average urban tree cover of 27.4% (Nowak et al. 2001a), the average decrease in mid-day air temperatures due to urban tree canopies would be about 1°C, assuming the minimum estimate of 0.036°C. The base

estimate of change of 1°C assumes an average species transpiration factor of 1 and an average leaf area index (LAI) of 6 (Nowak 1994).

To adjust for temperature changes due to individual species, the temperature change was adjusted based in individual species transpiration factors and LAI, such that:

$$NewTempAdj = -1^{o}C \times (LAI/6) \times (TF)$$

Where NewTempAdj = the new temperature adjustment; and TF = transpiration factor (Table 1).

The new air temperatures were input into the calculations for isoprene and monoterpene emission equations for the species.

**Leaf persistence.** Each species was classified as deciduous, semi-deciduous, or evergreen to estimate leaf persistence during a year. For functions where length of in-leaf season has a significant impact on the tree effect, tree species values were weighted by a leaf persistence value. Deciduous trees were multiplied by a factor of 1; evergreen trees were multiplied by a factor of 365 / length of in-leaf season (days); and semi-deciduous were multiplied by a factor of the midpoint between 365 and length of in-leaf season divided by length of in-leaf season. For general comparison, an average length of in-leaf season of 180 days was used. As one increases the length of growing season (moving farther south), impact of leaf persistence will drop (i.e., evergreen vs. deciduous differences are reduced). As length of growing season decreases, these differences will become more pronounced.

**Pollutant sensitivity.** To aid in knowing which species are sensitive to ozone, sulfur dioxide, or nitrogen dioxide, each species in the database was noted if it is sensitive to each of these pollutants based on species sensitivity lists found in Smith (1981), Treshow and Anderson (1989), Appleton et al. (2000), Porter (2003), Oswalt and Clatterbuck (2005). "S" indicates sensitive to pollutant; "I" indicates intermediate rating between sensitive and tolerant to pollutant; and "S/I" indicates a mix of sensitive and intermediate ratings in the literature."

## Estimates of Tree Functions

Estimates of several tree functions were derived for each species based on the tree characteristics and other ancillary data. All functional estimates were derived in relative form, which is how each species compares with other species, and not in an absolute form (the actual impact of the tree). Thus functional values were all standardized between 0 (lowest) to 100 (highest).

**Particle Pollution Removal.** Because the removal of particulate matter by trees is influenced by the physical characteristics of their leaves (i.e., the size, complexity, and surface features), the U.S. average $PM_{10}$ flux (from the Urban Forests Effect (UFORE model: Nowak et. al. 2000, 2001a,b, 2002a,b, 2003; Nowak and Crane, 2000, 2002) had to be adjusted to reflect the leaf characteristics of each evaluated species. Thus, overall leaf scores were assigned corresponding particle deposition rates ($V_d$), based on values from Little (1977). Average deposition velocities for Nettle, Beech, and White poplar were used to develop a scale of relative particle deposition velocities, based on their respective leaf characteristics. Nettle represented the tree species with the stickiest/hairiest leaf surface, and had the highest overall leaf score (81-100). Beech represented the species with the smoothest leaf surface, and had the lowest overall leaf score (0-20). White poplar was given an overall leaf score of 41-60. The average particle deposition velocities for these three species were standardized to the particle deposition velocity for Beech

to determine a weighting factor (Table 3). $PM_{2.5}$ may or may not have similar relative removal rates among species, but more research is needed on species effects on particulate matter, particularly $PM_{2.5}$.

The U.S. average $PM_{10}$ flux represents the $PM_{10}$ removal rate for a species with average leaf characteristics (i.e., moderate leaf size, surface, and complexity) and a leaf area index of 6. To determine the appropriate $PM_{10}$ removal rate for trees with different leaf characteristics (and therefore different deposition velocities), the U.S. average $PM_{10}$ flux was weighted by the weighting factor for each species based on the species leaf score (Table 3).

**Table 3. Range of overall leaf scores and the development of their associated relative particle deposition rates ($V_d$).**

| Species | Leaf Score | Avg. $V_d$ (cm/sec) | Weight Factor | $PM_{10}$ Removal Rate ($g/m^2/hr$, LAI = 6) |
|---|---|---|---|---|
| Nettle | 81-100 | 1.24 | 1.5 | 0.00111 |
| | 61-80 | | 1.25 | 0.00093 |
| White poplar | 41-60 | 0.82 | 1.0 | **0.00074** |
| | 21-40 | | 0.64 | 0.00047 |
| Beech | 0-20 | 0.23 | 0.28 | 0.00021 |

The final $PM_{10}$ removal rate (g/tree/hr) was determined for each species by multiplying the species' canopy area projection ($\pi r^2$) by its leaf area index and by the $PM_{10}$ removal rate corresponding to its relative particle deposition rate factor:

$PM_{10}$ removal (g/tree/hr) = (Tree canopy area, $m^2$) x ($PM_{10}$ removal rate, $g/m^2/hr$) x (LAI/6)

As particulate matter removal is a function of plant surface characteristics, $PM_{10}$ removal for each species was weighted by the leaf persistence value of the species to account for differences in the amount of leaves throughout a year.

**Nitrogen Dioxide ($NO_2$), Ozone ($O_3$), and Sulfur Dioxide ($SO_2$) Removal.** As the removal rates for $NO_2$, $O_3$, and $SO_2$ are related to tree transpiration (Lovett, 1994), the removal rates for these pollutants were determined for each species by using the average pollutant flux from 53 cities using the UFORE model (Table 2); relative transpiration factor (Table 1); total tree canopy area; and leaf area index (LAI). The U.S. average pollutant flux ($g/m^2/hr$) was used to represent the pollutant removal rate for a species with an average transpiration rate (Table 1, TF = 1) and a leaf area index of 6. This base pollutant removal rate was multiplied by each tree's relative transpiration factor to yield appropriate pollutant removal rates for trees with different transpiration rates (Tables 4-6).

**Table 4. $NO_2$ removal rates based on relative transpiration rate.**

| Water Use Classification | Relative Transpiration Factor | $NO_2$ Removal Rate ($g/m^2/hr$) |
|---|---|---|
| High need (H) | 1.50 | 0.00067 |
| High to moderate need (MH) | 1.25 | 0.00056 |
| Moderate need (M) | 1.00 | **0.00045** |
| Moderate to low need (ML) | 0.75 | 0.00033 |
| Low need (L) | 0.50 | 0.00022 |
| Low to very low need (LVL) | 0.35 | 0.00016 |
| Very low need (VL) | 0.20 | 0.00009 |

**Table 5. $O_3$ removal rates based on relative transpiration rate.**

| Water Use Classification | Relative Transpiration Factor | $O_3$ Removal Rate ($g/m^2/hr$) |
|---|---|---|
| High need (H) | 1.50 | 0.00194 |
| High to moderate need (MH) | 1.25 | 0.00162 |
| Moderate need (M) | 1.00 | **0.00129** |
| Moderate to low need (ML) | 0.75 | 0.00097 |
| Low need (L) | 0.50 | 0.00065 |
| Low to very low need (LVL) | 0.35 | 0.00045 |
| Very low need (VL) | 0.20 | 0.00026 |

**Table 6. $SO_2$ removal rates based on relative transpiration rate.**

| Water Use Classification | Relative Transpiration Factor | $SO_2$ Removal Rate ($g/m^2/hr$) |
|---|---|---|
| High need (H) | 1.50 | 0.00044 |
| High to moderate need (MH) | 1.25 | 0.00037 |
| Moderate need (M) | 1.00 | **0.00030** |
| Moderate to low need (ML) | 0.75 | 0.00022 |
| Low need (L) | 0.50 | 0.00015 |
| Low to very low need (LVL) | 0.35 | 0.00010 |
| Very low need (VL) | 0.20 | 0.00006 |

The final pollutant removal (g/tree/hr) was determined by multiplying the species' canopy projection by its LAI and by the pollutant removal rate corresponding to its relative transpiration factor:

Pollutant removal (g/tree/hr) = (pollutant removal rate ($g/m^2/hr$)) x (tree canopy area) x (LAI/6)

The relative rating of pollution removal assumes that there is adequate moisture for all species and that transpiration is not limited.

**Carbon Monoxide (CO) Removal.** CO removal was estimated for each species based on average CO flux of the 53 U.S. cities (0.00007 $g/m^2/hr$); total tree canopy area; and LAI. The final CO removal rate (g/tree/hr) was calculated for each tree by multiplying the species' canopy projection area ($m^2$) by its leaf area index and by the average CO flux of the 54 U.S. cities (0.00007 $g/m^2/hr$):

CO removal rate for tree (g/tree/hr) = (CO flux) x (Tree canopy area) x (LAI/6)

As carbon monoxide removal by leaves is not related to photosynthesis (Bidwell and Fraser, 1972), CO removal for each species was weighted by the leaf persistence value of the species to account for differences in the amount of leaves throughout a year.

**Net Carbon Monoxide and Ozone Effects.** The potential increase of both carbon monoxide and ozone due to tree VOC emissions were estimated by combining the total emission of isoprene, and monoterpenes with their reactivity coefficients (yielding the potential of the VOC to form either carbon monoxide or ozone) (Carter 1998; Madronovich, pers. comm., 1997).

Carbon Monoxide. The VOC potential to form carbon monoxide is likely near 10% Madronovich, pers. comm. 1997). Thus, the carbon monoxide forming potential (COFP) is:

COFP (g CO/tree/hr) = [0.1 * (VOC in g C/tree/hr) * (28 g CO/mol CO)/(12 g C/mol CO)]

Net CO removal rate was then calculated as:

Net CO removal rate (g CO/tree/hr) = CO removal (g CO/tree/hr) - COFP.

Ozone. VOC to ozone conversion was based on Maximum Ozone Incremental Reactivity (MOIR) scenarios (Carter 1998). Base reactivity scales used were 3.85 g $O_3$ / g isoprene, 1.4 g $O_3$ / g monoterpene, and 0.04 g $O_3$ / g CO. These base scales were based on a $NO_x$/VOC ratio of 8. The average $NO_x$/VOC ratio for 22 cities (National Research Council 1991) was 10.6. Data from Maximum Incremental Reactivity (MIR) scenarios ($NO_x$/VOC ratio = 4) and Equal Benefit Incremental Reactivity (EBIR) scenarios ($NO_x$/VOC ratio = 15) were used to adjust the reactivity scale to the national average $NO_x$/VOC ratio (3.23 g $O_3$ / g isoprene, 1.23 g $O_3$ / g monoterpene, and 0.036 g $O_3$ / g CO).

VOC and CO emissions per tree/hr were multiplied by the appropriate reactivity scale to estimate $O_3$ formation due to tree VOC emissions and consequent CO formation. Net $O_3$ removal rate was then calculated as:

Net $O_3$ removal rate (g $O_3$/tree/hr) = $O_3$ removal - $O_3$ formation.

**Overall Pollutant Rating.** Each species received an overall pollutant rating, based on its estimated effect for each pollutant. The overall score were based on removal values for particulate matter, sulfur dioxide, nitrogen dioxide; and the net removal/emission values for carbon monoxide and ozone. The net effect for each pollutant was weighted by the relative effect of each pollutant based on California Ambient Air Quality Standards (California Air Resources Board 2005) for the same measurement period (Table 7).

**Table 7. California Ambient Air Quality Standards. Weight was based on referencing against the 1-hour ozone standard**

| *Standards* | *Ozone ($O_3$)* | *Particulate Matter ($PM_{10}$)* | *Nitrogen Dioxide ($NO_2$)* | *Sulfur Dioxide ($SO_2$)* | *Carbon Monoxide (CO)* |
|---|---|---|---|---|---|
| 1-hour | 180 $\mu g/m^3$ | | 470 $\mu g/m^3$ | 655 $\mu g/m^3$ | 23,000 $\mu g/m^3$ |
| 24-hour | | 50 $\mu g/m^3$ | | 105 $\mu g/m^3$ | |
| Weight* | 1.00 | 0.58 | 0.38 | 0.27 | 0.01 |

* weight = 180 / 1-hour standard. $PM_{10}$ 1-hour standard was estimated as 312 $\mu g/m^3$ based on the ratio of 1-hour to 24-hour standard of sulfur dioxide.

The overall pollutant score was calculated based on the weights in Table 7 as:

Overall Score = [($O_3$ effect (g/tree/hr)*1.0) + ($PM_{10}$ effect*0.58) + ($NO_2$ effect*0.38) + ($SO_2$ effect*0.27) + (CO effect*0.01)]

**Air Temperature Reduction.** The relative effect of each species on air temperature was estimated as the multiple of the species transpiration rating times the species leaf area at maturity. This value indicates the potential evaporative cooling of the species.

**Ultraviolet radiation reduction**. An estimate of the total amount of light blockage was used to estimate the relative effect of each tree species on reducing ultraviolet radiation load. As plant leaves absorb approximately 90-95% of ultraviolet radiation (Grant et al., 2003), an estimate of shading was based on species shading coefficients times the median crown width.

As length of leaf persistence affects the amount ultraviolet radiation block throughout a year, each value was weighted by the leaf persistence value of the species to arrive at a UV shade index.

**Carbon storage.** Carbon storage estimates were based on estimated tree diameter at maturity (calculated from tree height data using equations in Frelich, 1992), tree height, and species allometric equation for biomass (in Nowak et al., 2002). Individual species data were input into the UFORE model (Nowak and Crane, 2000) to estimate carbon storage at maturity. Tree diameter data were derived from the equation for white pine (Frelich 1992) as this equation produced the most conservative diameter estimates for large tree heights.

**Pollen Allergenicity.** Species allergenicity was based on species allergenicity rating (1-10) (Ogren 2000) with 1 representing the most allergy free species and 10 representing the species potentially producing the most allergies. Standard allergy values were weighted by the standardized leaf area as larger trees have a greater potential to produce overall amounts of allergens. For dioecious species with multiple values, the average value was used. For species without values, genera or family averages were used.

**Energy conservation.** Estimates of the effects of trees on building energy use were based on McPherson and Simpson (2000). Two parameters are used to estimate energy effects: 1) shade effect (UV shade index was used) and 2) climate effects (Air temperature reduction index was used). However, each parameter has a different effect on energy used based on tree type, size and geographic location. To help determine the relative difference in these parameters, each species was classified as evergreen or deciduous and into one of three height classes based on median tree height at maturity: 1) 20-35 ft; 2) 35-50 ft; and 3) > 50 ft. Using data from all climate zones in McPherson and Simpson (2000), the average ratio of shade to climatic effects for both heating and cooling effects was calculated among all climate zones in the United States by tree type and size (Table 8). For climate effects, the heating and cooling effects of individual tree type was based on an average cover of 30%. To determine the final energy conservation index for a species, the standardized species UV index (shade) was multiplied by the appropriate ratio calculated from McPherson and Simpson (2000) and added to the standardized air temperature reduction (climate) index.

**Table 8. Average ratio of shade to climate effects per tree among all climate zones in the United States (derived from McPherson and Simpson (2000)).**

| Tree type and size | Ratio |
|---|---|
| Deciduous large | 0.344 |
| Deciduous medium | 0.362 |
| Deciduous small | 0.280 |
| Evergreen large | 0.077 |
| Evergreen medium | -0.008 |
| Evergreen small | -0.114 |

**Wind reduction**. The relative effect of each species on blocking wind was estimated based on the leaf surface area of the species at maturity. As length of leaf persistence affects the amount wind reduction throughout a year, each value was weighted by the leaf persistence value of the species.

**Stream flow reduction** – Two main effects that a species potentially has on stream flow are through the interception of precipitation and the transpiration of water through leaf stomata. To estimate the relative difference between these effects, the UFORE-Hydro model (Wang et al.,

2008) was run for six watersheds and the average effects of doubling transpiration and leaf interception on overall stream flow were contrasted. The average difference between the transpiration and interception effects on these watersheds was a reduction in stream flow that was 5.3 times greater for transpiration than for interception. Thus the standardized temperature (transpiration) index was multiplied by 5.3 and added to the standardized leaf area (interception) index. These values were subsequently restandardized to a scale of 0 – 100.

### Overall Species Recommendation

Based on user-supplied information of location (city and state), and minimum and maximum tree height desired, the database is reduced to only tree species that are hardy to the hardiness zone of the location and that are larger than the minimum tree height and smaller than the maximum tree height specified (based on median tree height at maturity). Species are noted as to the reliability of the hardiness zone data with increasing number of asterisks indicating an increasing degree of uncertainty (see Hardiness Zone above). The user is also asked to rate the importance of each tree function on a scale of 0 (not important) to 10 (very important). The program weights the standardized functional values by the corresponding user-supplied value, sums the weighted values for all functions, and standardizes the sum values on a range between 0 (minimum value) and 100 (maximum values). The program then provides output of species recommendations in 10% groupings. These groupings are to be used to make decisions on the most appropriate species for an area given the desired tree functions. Actual decisions on what trees to plant in the area need to incorporate local knowledge of species and conditions to ensure that the proper species is selected to ensure long-term survival, health, and environmental services.

# References


Appleton, B., J. Koci, R. Harris, K. Sevebeck, D. Alleman, and L. Swanson. 2000. Air Pollution. Trees for Problem Landscapes. Virginia Cooperative Extension Publ. 430-022. 3 p.

Bacon, C.G. and S.M. Zedaker. 1986. Leaf area prediction equations for young southeastern hardwood stems. Forest Science. 32(3): 818-821.

Barbour, M.G; Burk, J.H.; Pitts, W.D. 1980. Terrestrial plant ecology. Menlo Park, CA: Benjamin/Cummings. 604 p.

Benjamin, M.T., M. Sudol, L. Bloch, and A.M. Winer. 1996. Low-emitting urban forests: a taxonomic methodology for assigning isoprene and monoterpene emission rates. Atmospheric Environment. 30(9):1437-1452.

Box, E.O. 1981. Foliar biomass: database of the International Biological Program and other sources. In: Bufalini, J. J.; Arnts, R. R. eds. Atmospheric biogenic hydrocarbons. Volume 1. Emissions. Ann Arbor, MI: Science Publishers:121-148.

Bidwell, R.G.S.; Fraser, D.E. 1972. Carbon monoxide uptake and metabolism by leaves. Canadian Journal of Botany. 50: 1435-1439.

California Air Resources Board. 2005. Ambient Air Quality Standards. www.arb.ca.gov/aqs/aaqs2.pdf

Carter, W.L. 1998. Updated maximum incremental reactivity scale for regulatory applications. www.cert.ucr.edu/~carter/r98tab.htm

Costello, L.R. and K.S. Jones. 1994. WUCOLS: Water Use Classification of Landscape Species -- A guide to the water needs of landscape plants. Half Moon Bay, CA: University of California Cooperative Extension, San Mateo and San Francisco Counties. 90 p.

Cregg, B. M. 1992. Leaf area estimation of mature foliage of *Juniperus*. Forest Science. 38(1): 61-67.

Dirr, M.A. 1990. Manual of woody landscape plants: their identification, ornamental characteristics, culture, propagation and uses. Champaign, IL: Stipes Publishing Company. 1007 pp.

Elias, T.S. 1980. The complete trees of North America: field guide and natural history. Times Mirror Magazine, Inc. New York, NY. Van Nostrand Reinhold. 948 p.

Frelich, L.E. 1992. Predicting dimensional relationships for Twin Cities shade trees. St. Paul, MN: University of Minnesota, Department of Forest Resources. 33 p.

Gacka-Grzesikiewicz, E. 1980. Assimilation surface of urban green areas. Ekologia Polska. 28(4): 493-523.

Geron, C.D., A.B. Guenther, and T.E. Pierce. 1994. An improved model for estimating emissions of volatile organic compounds from forests in the eastern United States. Journal of Geophysical Research. 99(D6): 12,773-12,791.

Geron, C., P. Harley, and A. Guenther. 2001. Isoprene emission capacity for US tree species. Atmospheric Environment. 35: 3341-3352.

Grant, R.H., G.M. Heisler, W. Gao, and M. Jenks. 2003. Ultraviolet leaf reflectance of common urban trees and the prediction of reflectance from leaf surface characteristics. Agricultural and Forest Meteorology, 120: 127-139.

Guenther, A. 1997. Seasonal and spatial variation in natural volatile organic compound emissions. Ecological Applications. 7(1): 34-45.

Guenther, A.; Hewitt, C.N.; Erickson, D.; Fall, R.; Geron, C.; Graedel, T.; Harley, P.; Klinger, L.; Lerdau, M.; McKay, W.A.; Pierce, T.; Scholes, B.; Steinbrecher, R.; Tallamraju, R.; Taylor, J.; Zimmerman, P. 1995. A global model of natural volatile organic compound emissions. Journal of Geophysical Research. 100 (D5): 8873-8892.

Horticopia, Inc. 2007. Horticopia® Professional. Horticopia Information Software. Purcellville, VA. Horticopia, Inc. http://www.horticopia.com/ Last accessed. November 2007.

Jarvis, P.G., and J.W. Leverenz. 1983. Productivity of temperate, deciduous and evergreen forests. In: Lange, O.L.; Nobel, P.S.; Osmond, C.B.; Ziegler, H., eds. Physiological plant ecology IV, encyclopedia of plant physiology, volume 12D. Springer-Verlag, Berlin: 233-280.

Isebrands J.G., A.B. Guenther, P. Harley, D. Helmig, L. Klinger, L.Vierling , P. Zimmerman, and C. Geron 1999. Volatile Organic Compound Emission Rates from Mixed Deciduous and Coniferous Forests in Northern Wisconsin, USA. Atmospheric Environment. 33: 2527-2536.

Kesselmeier, J. and M. Staudt. 1999. Biogenic volatile organic compounds (VOC): an overview on emission, physiology and ecology. Journal of Atmospheric Chemistry. 33:23-88.

Leverenz, J.W. and T.M. Hinckley. 1990. Shoot structure, leaf area index and productivity of evergreen conifer stands. Tree Physiology. 6: 135-149.

Little, P. 1977. Deposition of 2.75, 5.0, and 8.5 μm particles to plant and soil surfaces. Environ. Pollut. 12:293-305.

Lovett, G.M. 1994. Atmospheric deposition of nutrients and pollutants in North America: an ecological perspective. Ecol. Appl. 4(4):629-650.

McLaughlin, S.B. and H.A. Madgwick. 1968. The effects of position in crown on the morphology of needles of loblolly pine (*Pinus taeda* L.). American Midland Naturalist. 80(2): 547-550.

McPherson, E.G. and J.R. Simpson. 2000. Carbon dioxide reductions through urban forestry: guidelines for professional and volunteer tree planters. PSW GTR-171. Albany, CA: USDA Forest Service, Pacific Southwest Research Station

Monk, C.D., G.I. Child, and S.A. Nicholson. 1970. Biomass, litter and leaf-surface area estimates of an oak-hickory forest. Oikos. 21: 138-141.

National Research Council. 1991. Rethinking the ozone problem in urban and regional air pollution. Washington, DC: National Academy Press. 500 p.

Nowak, D.J. 1994. Urban forest structure: the state of Chicago's urban forest. In: McPherson, E.G.; Nowak, D.J.; Rowntree, R.A., eds. Chicago's urban forest ecosystem: results of the Chicago Urban Forest Climate Project. Gen. Tech. Rep. NE-186, Radnor, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station: 3-18; 140-164

Nowak, D.J. 1996. Estimating leaf area and leaf biomass of open-grown urban deciduous trees. *For. Sci.* 42(4): 504-507.

Nowak, D.J., K.L. Civerolo, S.T. Rao, G. Sistla, C.J. Luley, and D.E. Crane. 2000. A modeling study of the impact of urban trees on ozone. *Atmos. Environ*. 34: 1601-1613.

Nowak, D.J., and D.E. Crane. 2000. The Urban Forest Effects (UFORE) Model: quantifying urban forest structure and functions. In: Hansen, M. and T. Burk (Eds.) *Integrated Tools for Natural Resources Inventories in the 21st Century*. Proc. Of the IUFRO Conference. USDA Forest Service General Technical Report NC-212. North Central Research Station, St. Paul, MN. pp. 714-720.

Nowak, D.J. and D.E. Crane. 2002. Carbon storage and sequestration by urban trees in the United States. *Environ. Poll*. 116(3): 381-389.

Nowak, D.J., D.E. Crane, J.C. Stevens, and M. Ibarra. 2002a. Brooklyn's Urban Forest. *USDA Forest Service Gen. Tech. Rep. 290*. 107 p.

Nowak, D.J., D.E. Crane, and J.F. Dwyer. 2002b. Compensatory value of urban trees in the United States. *J. Arboric.* 28(4): 194-199.

Nowak, D.J., D.E. Crane, J.C. Stevens, and R. Hoehn. 2003. The Urban Forest Effects (UFORE) model: field data collection procedures. USDA Forest Service, Syracuse, NY. 30 p. http://www.fs.fed.us/ne/syracuse/Tools/downloads/UFORE_Manual.pdf

Nowak, D.J., M.H. Noble, S.M. Sisinni, and J.F. Dwyer. 2001a. Assessing the U.S. urban forest resource. J. For. 99(3):37-42

Nowak, D.J., J. Pasek, R. Sequeira, D.E. Crane, and V. Mastro. 2001b. Potential effect of *Anoplophora glabripennis* (Coleoptera: Cerambycidae) on urban trees in the United States. *J. Econon. Entomol*. 94(1): 16-22.

Ogren, T.L. 2000. Allergy-Free Gardening. Ten Speed Press, Berkeley, CA.

Oswalt, C.M. and W.K. Clatterbuck. 2005. University of Tennessee Extension Publication SP-657-15M-9/05. 4 p.

Porter, E. 2003. Ozone sensitive plant species on National Park Service and U.S. Fish and Wildlife Service lands: Results of a June 24-25, 2003 Workshop. Baltimore, Maryland. National Park Service Air Resources Division, U.S. Fish and Wildlife Service Air Quality Branch. www2.nature.nps.gov/air/Pubs/pdf/BaltFinalReport1.pdf Last Accessed: March 2007.

Reich, P.B., M.B. Walters, and D.S. Ellsworth. 1991. Leaf age and season influence the relationships between leaf nitrogen, leaf mass per area and photosynthesis in maple and oak trees. Plant, Cell and Environment. 14: 251-259.

Shelton, M.G. and G.L. Switzer. 1984. Variation in the surface area relationships of loblolly pine fascicles. Forest Science. 30(2): 355-363.

Simpson, J.R. 1998. Urban forest impacts on regional cooling and heating energy use: Sacramento County case study. J. Arboric. 24(4):201-214.

Smith, W.H. 1981. Air Pollution and Forests. Springer-Verlag, New York. 379 p.

Stein, J., D. Binion, and R. Acciavatti. 2003. Field guide to native oak species of eastern North America. Forest Health Technology Enterprise Team FHTET-2003-01. Newtown Square,

PA: U.S. Department of Agriculture, Forest Service, Northeastern Area State and Private Forestry: 161 pp.

Sunset. 1985. New Western Garden Book, Lane Publ. Co. Menlo Park, CA. 512 p.

Treshow, M. and F.K. Anderson. 1989. Plant Stress from Air Pollution. John Wiley and Sons, New York. 293 p.

Williamson, J.F., J.R. Dunmire, and M.W. Zimmerman. (eds.) 1985. Sunset new western garden book. Menlo Park, CA: Lane Publishing Company. 512 pp.

University of Connecticut. 2000. Plant Database of Trees, Shrubs, and Vines. http://www.hort.uconn.edu/plants/

Wang, J., T.A. Endreny, and D.J. Nowak. 2008. Mechanistic simulation of urban tree effects in an urban water balance model. Journal of American Water Resource Association. 44(1):75-85.

# Appendix A: Species Selector Utility Species List

| Scientific Name | Common Name |
|---|---|
| *Abies alba* | Silver Fir |
| *Abies amabilis* | Pacific Silver Fir |
| *Abies balsamea* | Balsam Fir |
| *Abies bracteata* | Bristlecone Fir |
| *Abies concolor* | White Fir |
| *Abies fraseri* | Fraser Fir |
| *Abies grandis* | Grand Fir |
| *Abies holophylla* | Manchurian Fir |
| *Abies homolepis* | Japanese Fir |
| *Abies lasiocarpa* | Subalpine Fir |
| *Abies magnifica* | California Red Fir |
| *Abies nordmanniana* | Nordman Fir |
| *Abies pinsapo* | Abeto De España |
| *Abies procera* | Noble Fir |
| *Abies x phanerolepis* | Balsam Fir |
| *Abies x shastensis* | Shasta Red Fir |
| *Abutilon virginianum* | Jost Van Dyke's Indian Mallow |
| *Acacia anegadensis* | Blackbrush Wattle |
| *Acacia auriculaeformis* | Earleaf Acacia |
| *Acacia berlandieri* | Guajillo |
| *Acacia caven* | Espino |
| *Acacia choriophylla* | Cinnecord |
| *Acacia confusa* | Small Philippine Acacia |
| *Acacia constricta* | Whitethorn Acacia |
| *Acacia cornigera* | Bullhorn Wattle |
| *Acacia dealbata* | Aromo Del País |
| *Acacia decurrens* | Green Acacia |
| *Acacia elata* | Cedar Wattle |
| *Acacia koa* | Koa Acacia |
| *Acacia koaia* | Koaoha |
| *Acacia macracantha* | Porknut |
| *Acacia mearnsii* | Black Wattle |
| *Acacia melanoxylon* | Black Acacia |
| *Acacia mellifera* | Black Thorn |
| *Acacia millefolia* | Milfoil Wattle |
| *Acacia muricata* | Spineless Wattle |
| *Acacia nilotica* | Gum Arabic Tree |

| Scientific Name | Common Name |
|---|---|
| *Acacia parramattensis* | South Wales Wattle |
| *Acacia pinetorum* | Pineland Wattle |
| *Acacia podalyriifolia* | Pearl Wattle |
| *Acacia polyacantha* | Catechu Tree |
| *Acacia pycnantha* | Golden Wattle |
| *Acacia recifiens* | Ncn - Acacia Recifiens |
| *Acacia retinodes* | Water Wattle |
| *Acacia retusa* | Catch And Keep |
| *Acacia rigidula* | Blackbrush Acacia |
| *Acacia roemeriana* | Roundflower Catclaw |
| *Acacia saligna* | Orange Wattle |
| *Acacia semperflorens* | Aromo En Flor |
| *Acacia sphaerocephala* | Bee Wattle |
| *Acacia verticillata* | Prickly Moses |
| *Acacia visco* | Acacia Visco |
| *Acer barbatum* | Florida Maple |
| *Acer buergerianum* | Trident Maple |
| *Acer campestre* | Hedge Maple |
| *Acer griseum* | Paperbark Maple |
| *Acer leucoderme* | Chalk Maple |
| *Acer macrophyllum* | Bigleaf Maple |
| *Acer mono* | Painted Maple |
| *Acer negundo* | Boxelder |
| *Acer nigrum* | Black Maple |
| *Acer pensylvanicum* | Striped Maple |
| *Acer platanoides* | Norway Maple |
| *Acer pseudoplatanus* | Sycamore Maple |
| *Acer rubrum* | Red Maple |
| *Acer saccharinum* | Silver Maple |
| *Acer saccharum* | Sugar Maple |
| *Acer truncatum* | Purple Blow Maple |
| *Acer x freemanii* | Freeman Maple |
| *Adansonia digitata* | Baobab |
| *Aesculus chinensis* | Chinese Horse Chestnut |
| *Aesculus flava* | Yellow Buckeye |
| *Aesculus glabra* | Ohio Buckeye |
| *Aesculus hippocastanum* | Horsechestnut |
| *Aesculus parviflora* | Bottlebrush Buckeye |
| *Aesculus x bushii* | Bush's Chesnut |
| *Aesculus x carnea* | Red Horsechestnut |
| *Aesculus x hybrida* | Hybrid Chesnut |
| *Aesculus x marylandica* | Maryland Chesnut |

| Scientific Name | Common Name |
|---|---|
| *Aesculus x mutabilis* | Apricot-Flowered Dwarf Horse Chestnut |
| *Aesculus x neglecta* | Spring Yellow Horse Chestnut |
| *Aesculus x worlitzensis* | Worlitz's Chestnut |
| *Ailanthus altissima* | Tree Of Heaven |
| *Albizia adinocephala* | Cream Albizia |
| *Albizia carbonaria* | Naked Albizia |
| *Albizia chinensis* | Chinese Albizia |
| *Albizia julibrissin* | Mimosa |
| *Albizia lebbeck* | Acacia Amarilla |
| *Albizia lebbekoides* | Indian Albizia |
| *Albizia lophanta* | Plume Albizia |
| *Albizia procera* | Tall Albizia |
| *Albizia saponaria* | Whiteflower Albizia |
| *Aleurites moluccana* | Candleberry |
| *Aleurites montana* | Mu Oil Tree |
| *Alnus glutinosa* | European Alder |
| *Alnus nepalensis* | Nepal Alder |
| *Alnus rhombifolia* | White Alder |
| *Alnus rubra* | Red Alder |
| *Alnus viridis* | Green Alder |
| *Amelanchier arborea var. Arborea* | Common Serviceberry |
| *Amelanchier bartramiana* | Oblongfruit Serviceberry |
| *Amelanchier interior* | Pacific Serviceberry |
| *Amelanchier pallida* | Pale Serviceberry |
| *Amelanchier sanguinea* | Roundleaf Serviceberry |
| *Amelanchier utahensis* | Utah Serviceberry |
| *Amelanchier x intermedia* | Intermediate Serviceberry |
| *Amelanchier x neglecta* | Neglected Serviceberry |
| *Amelanchier x quinti-martii* | Guint Mart's Serviceberry |
| *Amphitecna latifolia* | Black Calabash |
| *Anacardium occidentale* | Cashew |
| *Annona cheirimola* | Cherimoya |
| *Annona glabra* | Pond Apple |
| *Annona montana* | Mountain Soursop |
| *Annona muricata* | Guanabana |
| *Annona reticulata* | Corazon |
| *Annona squamosa* | Anon |
| *Araucaria bidwillii* | Bunya Bunya |
| *Araucaria brasiliensis* | Araucaria Brasileña |
| *Araucaria excelsa* | Norfolk Island Pine |
| *Araucaria heterophylla* | Norfolk Island Pine |
| *Arbutus andrachne* | Cyprus Strawberry Tree |

| Scientific Name | Common Name |
|---|---|
| *Arbutus arizonica* | Arizona Madrone |
| *Arbutus menziesii* | Pacific Madrone |
| *Arbutus unedo* | Strawberry Tree |
| *Arbutus xalapensis* | Texas Madrone |
| *Arctostaphylos columbiana* | Hairy Manzanita |
| *Arctostaphylos glauca* | Bigberry Manzanita |
| *Arctostaphylos nortensis* | Del Norte Manzanita |
| *Arctostaphylos pringlei* | Pringle Manzanita |
| *Arctostaphylos viscida* | Sticky Whiteleaf Manzanita |
| *Ardisia elliptica* | Shoebutton |
| *Ardisia glauciflora* | Ausubon |
| *Ardisia luquillensis* | Mountain Marlberry |
| *Ardisia obovata* | Guadeloupe Marlberry |
| *Artocarpus altilis* | Panapen |
| *Artocarpus heterophyllus* | Jackfruit |
| *Asimina obovata* | Bigflower Pawpaw |
| *Asimina parviflora* | Smallflower Pawpaw |
| *Asimina triloba* | Pawpaw |
| *Avicennia marina* | Gray Mangrove |
| *Bauhinia candicans* | Pata De Vaca |
| *Bauhinia lunarioides* | Texasplume |
| *Bauhinia multinervia* | Petite Flamboyant Bauhinia |
| *Bauhinia pauletia* | Railroadfence |
| *Bauhinia purpurea* | Orchid Tree |
| *Bauhinia tomentosa* | St. Thomas Tree |
| *Bauhinia variegata* | Mountain Ebony |
| *Bauhinia x blakeana* | Blake's Bauhinia |
| *Betula alleghaniensis* | Yellow Birch |
| *Betula borealis* | Northern Birch |
| *Betula fontinalis occident.* | Water Birch |
| *Betula lenta* | Black Birch |
| *Betula neoalaskana* | Resin Birch |
| *Betula nigra* | River Birch |
| *Betula papyrifera* | Paper Birch |
| *Betula pendula* | European White Birch |
| *Betula platyphylla* | Asian White Birch |
| *Betula populifolia* | Gray Birch |
| *Betula pubescens* | Cut Leaved Birch |
| *Betula uber* | Virginia Roundleaf Birch |
| *Betula x caerulea* | Blue Birch |
| *Betula x dugleana* | Dugle's Birch |
| *Betula x eastwoodiae* | Eastwood's Birch |

| Scientific Name | Common Name |
|---|---|
| *Betula x hornei* | Horne's Birch |
| *Betula x jackii* | Jack's Birch |
| *Betula x purpusii* | Purpus's Birch |
| *Betula x sandbergii* | Sandberg's Birch |
| *Betula x utahensis* | Northwestern Paper Birch |
| *Betula x winteri* | Winter's Birch |
| *Bischofia javanica* | Toog |
| *Bischofia polycarpa* | Ncn - Bischofia Polycarpa |
| *Bixa orellana* | Lipsticktree |
| *Brachychiton acerifolius* | Flame Tree |
| *Brachychiton populneum* | Kurrajong |
| *Broussonetia papyrifera* | Paper Mulberry |
| *Brugmansia candida* | Angel's-Trumpet |
| *Brugmansia suaveolens* | Angel's-Tears |
| *Bucida buceras* | Black Olive |
| *Bucida molinetii* | Spiny Bucida |
| *Bunchosia glandulifera* | Cafe Falso |
| *Bunchosia glandulosa* | Cafe Forastero |
| *Bursera fagaroides* | Fragrant Bursera |
| *Bursera microphylla* | Elephant Tree |
| *Bursera simaruba* | Gumbo Limbo |
| *Byrsonima crassifolia* | Maricao Cimun |
| *Byrsonima lucida* | Long Key Locustberry |
| *Byrsonima spicata* | Maricao |
| *Byrsonima wadsworthii* | Almendrillo |
| *Caesalpinia coriaria* | Divi Divi |
| *Caesalpinia ferrea* | Leopard Tree(Pau-Ferro) |
| *Caesalpinia kavaiensis* | Uhiuhi |
| *Caesalpinia mexicana* | Mexican Holdback |
| *Caesalpinia monensis* | Black Nicker |
| *Caesalpinia pulcherrima* | Pride-Of-Barbados |
| *Caesalpinia spinosa* | Spiny Holdback |
| *Calliandra haematomma* | Red Powderpuff |
| *Calliandra purpurea* | Purple Stickpea |
| *Calliandra surinamensis* | Surinamese Stickpea |
| *Calocedrus decurrens* | Incense Cedar |
| *Calophyllum antillanum* | Maria |
| *Calophyllum inophyllum* | Alexandrian Laurel |
| *Calyptranthes estremenae* | Las Cuevas Mountainbay |
| *Calyptranthes kiaerskovii* | Kiaerskov's Lidflower |
| *Calyptranthes krugii* | Limoncillo |
| *Calyptranthes luquillensis* | Luquillo Forest Lidflower |

| Scientific Name | Common Name |
|---|---|
| *Calyptranthes peduncularis* | Maricao Lidflower |
| *Calyptranthes portoricensis* | Puerto Rico Lidflower |
| *Calyptranthes sintenisii* | Limoncillo De Monte |
| *Calyptranthes thomasiana* | Thomas' Lidflower |
| *Calyptranthes woodburyi* | Woodbury's Lidflower |
| *Calyptranthes zuzygium* | Myrtle Of The River |
| *Camellia japonica* | Camellia |
| *Camellia sinensis* | Tea |
| *Cananga odorata* | Ilan-Ilan |
| *Canella winterana* | Cinnamon Bark |
| *Carpinus betulus* | European Hornbeam |
| *Carya alba* | Mockernut Hickory |
| *Carya aquatica* | Water Hickory |
| *Carya carolinae-septentrionalis* | Southern Shagbark Hickory |
| *Carya cordiformis* | Bitternut Hickory |
| *Carya glabra* | Pignut Hickory |
| *Carya illinoensis* | Pecan |
| *Carya laciniosa* | Shellbark Hickory |
| *Carya myristicformis* | Nutmeg Hickory |
| *Carya ovalis* | Red Hickory |
| *Carya ovata* | Shagbark Hickory |
| *Carya pallida* | Sand Hickory |
| *Carya pumilia* | Carya Hickory |
| *Carya texana* | Black Hickory |
| *Carya x brownii* | Brown's Hickory |
| *Carya x collina* | Collin Hickory |
| *Carya x demareei* | Demaree Hickory |
| *Carya x dunbarii* | Dunbar's Hickory |
| *Carya x laneyi* | Laney's Hickory |
| *Carya x lecontei* | Leconte's Hickory |
| *Carya x ludoviciana* | Hickory |
| *Carya x nussbaumeri* | Nussbaumer's Hickory |
| *Carya x schneckii* | Schneck's Hickory |
| *Casasia clusiifolia* | Sevenyear Apple |
| *Cassia afrofistula* | Kenyan Shower |
| *Cassia fistula* | Canafistula |
| *Cassia grandis* | Pink Shower |
| *Cassia javanica* | Casia Rosada |
| *Castanea crenata* | Japanese Chestnut |
| *Castanea dentata* | American Chestnut |
| *Castanea mollissima* | Chinese Chestnut |
| *Castanea sativa* | Castaño Común |

| Scientific Name | Common Name |
|---|---|
| *Castanea x neglecta* | Neglected Chesnut |
| *Casuarina cunninghamiana* | River Sheoak |
| *Casuarina equisetifolia* | Australian Pine |
| *Casuarina glauca* | Gray Sheoak |
| *Casuarina lepidophloia* | Belah |
| *Catalpa bignonioides* | Southern Catalpa |
| *Catalpa longissima* | Haitian Oak |
| *Catalpa ovata* | Chinese Catalpa |
| *Catalpa speciosa* | Northern Catalpa |
| *Ceanothus velutinus* | Snowbrush Ceanothus |
| *Cedrus deodara* | Deodar Cedar |
| *Cedrus libani* | Cedar Of Lebanon |
| *Ceiba pentandra* | Ceiba |
| *Celtis australis* | European Hackberry |
| *Celtis iguanaea* | Iguana Hackberry |
| *Celtis laevigata* | Sugarberry |
| *Celtis lindheimeri* | Lindheimer's Hackberry |
| *Celtis occidentalis* | Northern Hackberry |
| *Celtis pallida* | Spiny Hackberry |
| *Celtis tetrandra* | Ncn - Hackberry |
| *Celtis trinervia* | Almex |
| *Ceratonia siliqua* | Algarrobo Europeo |
| *Cercidiphyllum japonicum* | Katsura Tree |
| *Cercis orbiculata* | California Redbud |
| *Cercis siliquastrum* | Arbol De Judea |
| *Cercocarpus traskiae* | Catalina Island Mountain Mahogany |
| *Chamaecyparis lawsoniana* | Port Orford Cedar |
| *Chamaecyparis nootkatensis* | Alsaka Cedar |
| *Chamaecyparis thyoides* | Atlantic White Cedar |
| *Chionanthus axilliflorus* | Hueso |
| *Chionanthus compactus* | Bridgotree |
| *Chionanthus domingensis* | White Rosewood |
| *Chionanthus holdridgei* | Hueso Prieto |
| *Chionanthus ligustrinus* | Cabra Blanca |
| *Chionanthus virginicus* | Fringe Tree |
| *Chorisia speciosa* | Palo Borracho |
| *Chrysophyllum argenteum* | Bastard Redwood |
| *Chrysophyllum bicolor* | Star Apple |
| *Chrysophyllum cainito* | Star Apple |
| *Chrysophyllum oliviforme* | Satinleaf |
| *Chrysophyllum pauciflorum* | Camito De Perro |
| *Cinnamomum burmannii* | Padang Cassia |

| Scientific Name | Common Name |
|---|---|
| *Cinnamomum camphora* | Camphor Tree |
| *Cinnamomum elongatum* | Laurel Avispillo |
| *Cinnamomum montanum* | Avispillo |
| *Cinnamomum verum* | Cinnamon |
| *Citharexylum berlandieri* | Berlandier's Fiddlewood |
| *Citharexylum caudatum* | Juniper Berry |
| *Citharexylum fruticosum* | Florida Fiddlewood |
| *Citharexylum spinosum* | Pendula |
| *Citharexylum x perkinsii* | Perkins' Fiddlewood |
| *Citrus aurantifolia* | Lime |
| *Citrus aurantium* | Sour Orange |
| *Citrus limetta* | Bitter Orange |
| *Citrus limon* | Lemon |
| *Citrus maxima* | Shaddock |
| *Citrus medica* | Citron |
| *Citrus reticulata* | Tangerine |
| *Citrus sinensis* | Orange |
| *Citrus x limonia* | Mandarin Lime |
| *Citrus x paradisi* | Grapefruit |
| *Cladrastis kentukea* | Yellowwood |
| *Clerodendrum aculeatum* | Haggarbush |
| *Clerodendrum bungei* | Rose Glorybower |
| *Clerodendrum chinense* | Stickbush |
| *Clerodendrum glabrum* | Natal Glorybower |
| *Clerodendrum kaempferi* | Kaempfer's Glorybower |
| *Clerodendrum speciosissimum* | Javanese Glorybower |
| *Clerodendrum trichotomum* | Harlequin Glorybower |
| *Clethra acuminata* | Mountain Sweetpepperbush |
| *Clusia clusioides* | Cupeillo |
| *Clusia gundlachii* | Grundlach's Attorney |
| *Clusia minor* | Cupey De Monte |
| *Clusia rosea* | Cupey |
| *Coccoloba costata* | Uvilla |
| *Coccoloba diversifolia* | Doveplum |
| *Coccoloba krugii* | Whitewood |
| *Coccoloba microstachya* | Puckhout |
| *Coccoloba pallida* | Pale Seagrape |
| *Coccoloba pubescens* | Moralon |
| *Coccoloba pyrifolia* | Uvera |
| *Coccoloba rugosa* | Ortegon |
| *Coccoloba sintenisii* | Uvero De Monte |
| *Coccoloba swartzii* | Swartz's Pigeonplum |

| Scientific Name | Common Name |
|---|---|
| *Coccoloba tenuifolia* | Bahama Pigeonplum |
| *Coccoloba venosa* | False Chiggergrape |
| *Colubrina arborescens* | Greenheart |
| *Colubrina asiatica* | Asian Nakedwood |
| *Colubrina cubensis* | Cuban Nakedwood |
| *Colubrina glandulosa* | Glandular Nakedwood |
| *Colubrina greggii* | Sierra Nakedwood |
| *Colubrina oppositifolia* | Kauila |
| *Condalia globosa* | Bitter Snakewood |
| *Condalia hookeri* | Brazilian Bluewood |
| *Cordia alliodora* | Capa Prieto |
| *Cordia bahamensis* | Bahama Manjack |
| *Cordia boissieri* | Anacahuita |
| *Cordia borinquensis* | Muneco |
| *Cordia collococca* | Red Manjack |
| *Cordia dichotoma* | Fragrant Manjack |
| *Cordia gerascanthus* | Yauco |
| *Cordia laevigata* | Smooth Manjack |
| *Cordia obliqua* | Clammy Cherry |
| *Cordia rickseckeri* | San Bartolome |
| *Cordia sebestena* | Geiger Tree |
| *Cordia sinensis* | Grey Leaved Saucerberry |
| *Cordia subcordata* | Kou |
| *Cordia sulcata* | Moral |
| *Cornus florida* | Flowering Dogwood |
| *Cornus foemina* | Stiff Dogwood |
| *Cornus glabrata* | Brown Dogwood |
| *Cornus nuttallii* | Pacific Dogwood |
| *Cornus sessilis* | Blackfruit Dogwood |
| *Corylus colurna* | Turkish Hazelnut |
| *Corylus heterophylla* | Siberian Hazelnut |
| *Cotinus obovatus* | American Smoketree |
| *Couroupita guianensis* | Cannonball Tree |
| *Crataegus aemula* | Rome Hawthorn |
| *Crataegus aestivalis* | May Hawthorn |
| *Crataegus ambitiosa* | Grand Rapids Hawthorn |
| *Crataegus anamesa* | Fort Bend Hawthorn |
| *Crataegus ancisa* | Mississippi Hawthorn |
| *Crataegus annosa* | Phoenix City Hawthorn |
| *Crataegus apiomorpha* | Fort Sheridan Hawthorn |
| *Crataegus arborea* | Montgomery Hawthorn |
| *Crataegus arcana* | Carolina Hawthorn |

| Scientific Name | Common Name |
|---|---|
| *Crataegus arrogans* | Dixie Hawthorn |
| *Crataegus ater* | Nashville Hawthorn |
| *Crataegus austromontana* | Valley Head Hawthorn |
| *Crataegus beadlei* | Beadle's Hawthorn |
| *Crataegus beata* | Dunbar's Hawthorn |
| *Crataegus bona* | Berks County Hawthorn |
| *Crataegus brachyacantha* | Blueberry Hawthorn |
| *Crataegus brainerdii* | Brainerd's Hawthorn |
| *Crataegus brazoria* | Brazos Hawthorn |
| *Crataegus carrollensis* | Eureka Springs Hawthorn |
| *Crataegus chrysocarpa* | Fireberry Hawthorn |
| *Crataegus coccinioides* | Kansas Hawthorn |
| *Crataegus coleae* | Cole's Hawthorn |
| *Crataegus compacta* | Clustered Hawthorn |
| *Crataegus compta* | Adorned Hawthorn |
| *Crataegus condigna* | River Junction Hawthorn |
| *Crataegus consanguinea* | Tallahassee Hawthorn |
| *Crataegus contrita* | Southern Hawthorn |
| *Crataegus corusca* | Shiningbranch Hawthorn |
| *Crataegus dallasiana* | Dallas Hawthorn |
| *Crataegus desueta* | New York Hawthorn |
| *Crataegus dilatata* | Broadleaf Hawthorn |
| *Crataegus dispar* | Aiken Hawthorn |
| *Crataegus disperma* | Spreading Hawthorn |
| *Crataegus dispessa* | Mink Hawthorn |
| *Crataegus dissona* | Northern Hawthorn |
| *Crataegus distincta* | Distinct Hawthorn |
| *Crataegus dodgei* | Dodge's Hawthorn |
| *Crataegus engelmannii* | Engelmann's Hawthorn |
| *Crataegus erythrocarpa* | Red Hawthorn |
| *Crataegus erythropoda* | Cerro Hawthorn |
| *Crataegus exilis* | Slender Hawthorn |
| *Crataegus extraria* | Marietta Hawthorn |
| *Crataegus flabellata* | Fanleaf Hawthorn |
| *Crataegus flava* | Yellowleaf Hawthorn |
| *Crataegus fragilis* | Fragile Hawthorn |
| *Crataegus fulleriana* | Fuller's Hawthorn |
| *Crataegus furtiva* | Albany Hawthorn |
| *Crataegus glareosa* | Port Huron Hawthorn |
| *Crataegus grandis* | Grand Hawthorn |
| *Crataegus greggiana* | Gregg's Hawthorn |
| *Crataegus harbisonii* | Harbison's Hawthorn |

| Scientific Name | Common Name |
|---|---|
| *Crataegus harveyana* | Harvey's Hawthorn |
| *Crataegus helvina* | Clarkton Hawthorn |
| *Crataegus holmesiana* | Holmes' Hawthorn |
| *Crataegus ideae* | Concord Hawthorn |
| *Crataegus ignave* | Bedford Springs Hawthorn |
| *Crataegus impar* | Redclay Hawthorn |
| *Crataegus inanis* | Oldmaid Hawthorn |
| *Crataegus indicens* | Mansfield Hawthorn |
| *Crataegus insidiosa* | Ozark Hawthorn |
| *Crataegus integra* | Lake Ella Hawthorn |
| *Crataegus invicta* | Fulton Hawthorn |
| *Crataegus iracunda* | Stolonbearing Hawthorn |
| *Crataegus irrasa* | Blanchard's Hawthorn |
| *Crataegus jesupii* | Jesup's Hawthorn |
| *Crataegus jonesiae* | Miss Jones' Hawthorn |
| *Crataegus kelloggii* | Kellogg's Hawthorn |
| *Crataegus knieskerniana* | Knieskern's Hawthorn |
| *Crataegus lacrimata* | Pensacola Hawthorn |
| *Crataegus laevigata* | Smooth Hawthorn |
| *Crataegus lanata* | Hoary Hawthorn |
| *Crataegus lanuginosa* | Woolly Hawthorn |
| *Crataegus latebrosa* | Densewoods Hawthorn |
| *Crataegus lemingtonensis* | Lemington Hawthorn |
| *Crataegus limata* | Warm Springs Hawthorn |
| *Crataegus limnophila* | Waterloving Hawthorn |
| *Crataegus lucorum* | Grove Hawthorn |
| *Crataegus lumaria* | Roundleaf Hawthorn |
| *Crataegus macrosperma* | Bigfruit Hawthorn |
| *Crataegus maligna* | Ncn - Hawthorn |
| *Crataegus margarettiae* | Margarett's Hawthorn |
| *Crataegus marshallii* | Parsley Hawthorn |
| *Crataegus membranacea* | Tissueleaf Hawthorn |
| *Crataegus menandiana* | Menand's Hawthorn |
| *Crataegus mendosa* | Albertville Hawthorn |
| *Crataegus meridionalis* | Gallion Hawthorn |
| *Crataegus mollis* | Downy Hawthorn |
| *Crataegus monogyna* | Oneseed Hawthorn |
| *Crataegus multiflora* | Inkberry Hawthorn |
| *Crataegus nitida* | Glossy Hawthorn |
| *Crataegus nitidula* | Ontario Hawthorn |
| *Crataegus nuda* | Nude Hawthorn |
| *Crataegus opulens* | Rochester Hawthorn |

| Scientific Name | Common Name |
|---|---|
| *Crataegus ovata* | Ovateleaf Hawthorn |
| *Crataegus panda* | Florida Hawthorn |
| *Crataegus pearsonii* | Pearson's Hawthorn |
| *Crataegus penita* | Great Smoky Mountain Hawthorn |
| *Crataegus pennsylvanica* | Pennsylvania Hawthorn |
| *Crataegus perjucunda* | Pearthorn |
| *Crataegus persimilis* | Plumleaf Hawthorn |
| *Crataegus phaenopyrum* | Washington Hawthorn |
| *Crataegus pinetorum* | Pineland Hawthorn |
| *Crataegus piperi* | Piper's Hawthorn |
| *Crataegus poliophylla* | Elegant Hawthorn |
| *Crataegus porrecta* | Pittsburgh Hawthorn |
| *Crataegus pratensis* | Prairie Hawthorn |
| *Crataegus pringlei* | Pringle's Hawthorn |
| *Crataegus prona* | Illinois Hawthorn |
| *Crataegus pulcherrima* | Beautiful Hawthorn |
| *Crataegus putata* | Scranton Hawthorn |
| *Crataegus ravida* | Jeweled Hawthorn |
| *Crataegus resima* | Gulf Hawthorn |
| *Crataegus reverchonii* | Reverchon's Hawthorn |
| *Crataegus rhodella* | Franklin's Hawthorn |
| *Crataegus rigens* | Gadsden Hawthorn |
| *Crataegus rivularis* | River Hawthorn |
| *Crataegus rufula* | Rusty Hawthorn |
| *Crataegus saligna* | Willow Hawthorn |
| *Crataegus sargentii* | Sargent's Hawthorn |
| *Crataegus scabrida* | Rough Hawthorn |
| *Crataegus schuettei* | Schuette's Hawthorn |
| *Crataegus shaferi* | Shafer's Hawthorn |
| *Crataegus spatiosa* | New London Hawthorn |
| *Crataegus spissa* | Essex Hawthorn |
| *Crataegus stenosepala* | Duke Hawthorn |
| *Crataegus submollis* | Quebec Hawthorn |
| *Crataegus suborbiculata* | Caughuawaga Hawthorn |
| *Crataegus succulenta* | Fleshy Hawthorn |
| *Crataegus suksdorfii* | Suksdorf's Hawthorn |
| *Crataegus sutherlandensis* | Sutherland Hawthorn |
| *Crataegus tanuphylla* | Keystone Hawthorn |
| *Crataegus texana* | Texas Hawthorn |
| *Crataegus thermopegaea* | Graceful Hawthorn |
| *Crataegus tinctoria* | Dyed Hawthorn |
| *Crataegus tracyi* | Tracy's Hawthorn |

| Scientific Name | Common Name |
|---|---|
| *Crataegus triflora* | Threeflower Hawthorn |
| *Crataegus tristis* | Minute Hawthorn |
| *Crataegus turnerorum* | Turner's Hawthorn |
| *Crataegus uniflora* | Dwarf Hawthorn |
| *Crataegus vailiae* | Miss Vail's Hawthorn |
| *Crataegus valida* | Rockmart Hawthorn |
| *Crataegus versuta* | Johnny Reb Hawthorn |
| *Crataegus viburnifolia* | Sawtooth Hawthorn |
| *Crataegus viridis* | Green Hawthorn |
| *Crataegus vulsa* | Alabama Hawthorn |
| *Crataegus warneri* | Warner's Hawthorn |
| *Crataegus wootoniana* | Wooton's Hawthorn |
| *Crataegus x anomala* | Anomalous Hawthorn |
| *Crataegus x brevipes* | Ncn - Hawthorn |
| *Crataegus x haemacarpa* | Ncn - Hawthorn |
| *Crataegus x hudsonica* | Hudson Hawthorn |
| *Crataegus x immanis* | Ncn - Hawthorn |
| *Crataegus x incaedua* | Ncn - Hawthorn |
| *Crataegus x kennedyi* | Kennedy's Hawthorn |
| *Crataegus x laneyi* | Laney's Hawthorn |
| *Crataegus x lavallei* | Carriere Hawthorn |
| *Crataegus x lettermanii* | Letterman's Hawthorn |
| *Crataegus x notha* | Ncn - Hawthorn |
| *Crataegus x peckietta* | Peck's Hawthorn |
| *Crataegus x pilosa* | Pilose Hawthorn |
| *Crataegus x puberis* | Ncn - Hawthorn |
| *Crataegus x rubrocarnea* | Ncn - Hawthorn |
| *Crataegus x simulata* | Ncn - Hawthorn |
| *Crataegus x websteri* | Webster's Hawthorn |
| *Crataegus x whittakeri* | Whittaker's Hawthorn |
| *Crataegus xanthophylla* | Buffalo Hawthorn |
| *Crescentia alata* | Morrito |
| *Crescentia cujete* | Calabash Tree |
| *Crescentia linearifolia* | Higuerito |
| *Crescentia portoricensis* | Higuero De Sierra |
| *Cryptomeria japonica* | Japanese Red Cedar |
| *Cunninghamia lanceolata* | Blue Chinese Fir |
| *Cupaniopsis anacardioides* | Carrotwood |
| *Cupressus abramsiana* | Santa Cruz Island Cypress |
| *Cupressus arizonica* | Arizona Cypress |
| *Cupressus bakeri* | Baker Cypress |
| *Cupressus forbesii* | Tecate Cypress |

| Scientific Name | Common Name |
|---|---|
| *Cupressus funebris* | Mourning Cypress |
| *Cupressus guadalupensis* | Guadaluoe Cypress |
| *Cupressus lusitanica* | Mexican Cypress |
| *Cupressus macrocarpa* | Monterey Cypress |
| *Cupressus sargentii* | Sargent Cypress |
| *Cupressus sempervirens* | Italian Cypress |
| *Cydonia oblonga* | Quince |
| *Cyrilla parvifolia* | Littleleaf Titi |
| *Dalbergia ecastaphyllum* | Coinvine |
| *Dalbergia monetaria* | Moneybush |
| *Dalbergia sissoo* | India Rosewood |
| *Delonix regia* | Royal Poinciana |
| *Diospyros blancoi* | Mabolo |
| *Diospyros ebenum* | Ebony |
| *Diospyros hillebrandii* | Elama |
| *Diospyros kaki* | Japanese Persimmon |
| *Diospyros maritima* | Malaysian Persimmon |
| *Diospyros revoluta* | Black Apple |
| *Diospyros sandwicensis* | Lama |
| *Diospyros sintenisii* | Chinese Persimmon |
| *Diospyros texana* | Texas Persimmon |
| *Diospyros virginiana* | Common Persimmon |
| *Dodonaea viscosa* | Florida Hopbush |
| *Drimyis winteri* | Canelo |
| *Elaeocarpus bifidus* | Kalia |
| *Enterolobium contortisiliquum* | Pacara Earpod Tree |
| *Enterolobium cyclocarpum* | Ear Tree |
| *Eriobotrya japonica* | Loquat Tree |
| *Erythrina berteriana* | Machete |
| *Erythrina corallodendron* | Coral Erythrina |
| *Erythrina crista-galli* | Arbol Del Coral |
| *Erythrina eggersii* | Cock's Spur |
| *Erythrina falcata* | Corticeira-Da-Serra |
| *Erythrina flabelliformis* | Coralbean |
| *Erythrina fusca* | Bucayo |
| *Erythrina poeppigiana* | Mountain Immortelle |
| *Erythrina sandwicensis* | Wili Wili |
| *Erythrina umbrosa* | Ceibo |
| *Erythrina variegata* | Tiger's Claw |
| *Eucalyptus albens* | Whitebox |
| *Eucalyptus amygdalina* | Blackpeppermint |
| *Eucalyptus botryoides* | Southern Mahogany |

| Scientific Name | Common Name |
|---|---|
| *Eucalyptus bridgesiana* | Applebox |
| *Eucalyptus calophylla* | Redgum |
| *Eucalyptus camaldulensis* | Red Gum Eucalyptus |
| *Eucalyptus camphora* | Swamp Gum Eucalyptus |
| *Eucalyptus cinerea* | Silver Dollar Eucalyptus |
| *Eucalyptus citriodora* | Lemonscented Gum |
| *Eucalyptus cladocalyx* | Sugargum |
| *Eucalyptus cornuta* | Yate |
| *Eucalyptus crebra* | Narrowleaf Red Ironbark |
| *Eucalyptus deanei* | Roundleaf Gum |
| *Eucalyptus deglupta* | Deglupta Eucalyptus |
| *Eucalyptus diversicolor* | Karri Eucalyptus |
| *Eucalyptus ficifolia* | Redflower Gum |
| *Eucalyptus globulus* | Blue Gum Eucalyptus |
| *Eucalyptus gomphocephala* | Tuart |
| *Eucalyptus goniocalyx* | Mountain Graygum |
| *Eucalyptus grandis* | Flooded Gum Eucalyptus |
| *Eucalyptus gummifera* | Red Bloodwood |
| *Eucalyptus gunnii* | Cicer Gum Eucalyptus |
| *Eucalyptus leucoxylon* | White Ironbark |
| *Eucalyptus marginata* | Jarrah |
| *Eucalyptus microcorys* | Australian Tallowwood |
| *Eucalyptus paniculata* | Gray Ironbark |
| *Eucalyptus pilularis* | Blackbutt |
| *Eucalyptus polyanthemos* | Sliver Dollar Gum Eucalyptus |
| *Eucalyptus pulchella* | White Peppermint |
| *Eucalyptus pulverulenta* | Silverleaf Mountain Gum |
| *Eucalyptus raveretiana* | Black Ironbox |
| *Eucalyptus resinifera* | Redmahogany |
| *Eucalyptus robusta* | Beakpod Euclayptus |
| *Eucalyptus rudis* | Desert Gum Eucalyptus |
| *Eucalyptus saligna* | Sydney Blue Gum |
| *Eucalyptus sideroxylon* | Red Ironbark |
| *Eucalyptus tereticornis* | Horn Cap Eucalyptus |
| *Eucalyptus torquata* | Coral Gum |
| *Eucalyptus urophylla* | Timor Mountain Gum |
| *Eucalyptus viminalis* | Ribbon Gum Eucalyptus |
| *Eucalyptus x mortoniana* | Morton Eucalyptus |
| *Eucommia ulmoides* | Hardy Rubber Tree |
| *Eugenia apiculata* | Arrayán |
| *Eugenia axillaris* | White Stopper |
| *Eugenia biflora* | Blackrodwood |

| Scientific Name | Common Name |
|---|---|
| *Eugenia boqueronensis* | Sierra De Cayey Stopper |
| *Eugenia borinquensis* | Guayabota De Sierra |
| *Eugenia confusa* | Redberry Stopper |
| *Eugenia cordata* | Lathberry |
| *Eugenia corozalensis* | Sperry Guava |
| *Eugenia domingensis* | Serrette Guave |
| *Eugenia eggersii* | Guasabara |
| *Eugenia foetida* | Boxleaf Stopper |
| *Eugenia glabrata* | Smooth Rodwood |
| *Eugenia haematocarpa* | Luquillo Mountain Stopper |
| *Eugenia koolauensis* | Nioi |
| *Eugenia laevis* | Bayamon Stopper |
| *Eugenia ligustrina* | Privet Stopper |
| *Eugenia monticola* | Birdcherry |
| *Eugenia padronii* | Padron's Stopper |
| *Eugenia procera* | Rockmyrtle |
| *Eugenia pseudopsidium* | Christmas Cherry |
| *Eugenia reinwardtiana* | Mountain Stopper |
| *Eugenia rhombea* | Red Stopper |
| *Eugenia serrasuela* | Serrasuela |
| *Eugenia sessiliflora* | Sessileleaf Stopper |
| *Eugenia stahlii* | Stahl's Stopper |
| *Eugenia stewardsonii* | Stewardson's Stopper |
| *Eugenia underwoodii* | Underwood's Stopper |
| *Eugenia uniflora* | Surinam Cherry |
| *Eugenia woodburyana* | Woodbury's Stopper |
| *Eugenia xerophytica* | Aridland Stopper |
| *Euonymus bungeanum* | Winterberry |
| *Euonymus hamiltoniana* | Hamilton's Spindletree |
| *Euphorbia cotinifolia* | Mexican Shrubby Spurge |
| *Euphorbia haeleeleana* | Kauai Spurge |
| *Euphorbia lactea* | Mottled Spurge |
| *Euphorbia leucocephala* | Pascuita |
| *Euphorbia neriifolia* | Indian Spurgetree |
| *Euphorbia petiolaris* | Manchineel Berry |
| *Euphorbia pulcherrima* | Poinsettia |
| *Euphorbia tirucalli* | Indiantree Spurge |
| *Eurya sandwicensis* | Anini |
| *Exothea paniculata* | Inkwood |
| *Fagus crenata* | Japanese Beech |
| *Fagus grandifolia* | American Beech |
| *Fagus sylvatica* | European Beech |

| Scientific Name | Common Name |
|---|---|
| *Falcataria moluccana* | Moluca Albizia |
| *Ficus altissima* | Council Tree |
| *Ficus americana* | Jamaican Cherry Fig |
| *Ficus aurea* | Florida Strangler Fig |
| *Ficus benghalensis* | Indian Banyan |
| *Ficus benjamina* | Bejamin Fig |
| *Ficus carica* | Common Fig |
| *Ficus citrifolia* | Wild Banyantree |
| *Ficus drupacea* | Brown-Woolly Fig |
| *Ficus lutea* | Giant_Leafed Fig |
| *Ficus macrocarpa* | Moreton Bay Fig |
| *Ficus nota* | Tibig |
| *Ficus obtusifolia* | Amate |
| *Ficus organensis* | Figueira Nativa |
| *Ficus pumila* | Climbingfig |
| *Ficus religiosa* | Peepul Tree |
| *Ficus rubiginosa* | Rustyleaf Fig |
| *Ficus stahlii* | Jaguey |
| *Ficus trigonata* | Jaguey Blanco |
| *Firmiana simplex* | Chinese Parasoltree |
| *Forestiera angustifolia* | Texas Swampprivet |
| *Forestiera eggersiana* | Inkbush |
| *Forestiera rhamnifolia* | Caca Ravet |
| *Forestiera segregata* | Florida Swampprivet |
| *Forestiera shrevei* | Desert Olive |
| *Fortunella margarita* | Oval Kumquat |
| *Franklinia alatamaha* | Franklin Tree |
| *Fraxinus americana* | White Ash |
| *Fraxinus berlandieriana* | Arizona Ash |
| *Fraxinus caroliniana* | Carolina Ash |
| *Fraxinus chinensis* | Chinese Ash |
| *Fraxinus dipetala* | California Ash |
| *Fraxinus excelsior* | European Ash |
| *Fraxinus gooddingii* | Goodding's Ash |
| *Fraxinus holotricha* | Moraine Ash |
| *Fraxinus latifolia* | Oregon Ash |
| *Fraxinus nigra* | Black Ash |
| *Fraxinus oregana* | Oregon Ash |
| *Fraxinus ornus* | Flowering Ash |
| *Fraxinus oxycarpa* | Caucasian Ash |
| *Fraxinus papillosa* | Chihuahuan Ash |
| *Fraxinus pennsylvanica* | Green Ash |

| Scientific Name | Common Name |
|---|---|
| *Fraxinus profunda* | Pumpkin Ash |
| *Fraxinus quadrangulata* | Blue Ash |
| *Fraxinus texensis* | Texas Ash |
| *Fraxinus uhdei* | Evergreen Ash |
| *Fraxinus velutina* | Velvet Ash |
| *Fremontodendron californicum* | California Flannelbush |
| *Fremontodendron decumbens* | Pine Hill Flannelbush |
| *Fremontodendron mexicanum* | Mexican Flannelbush |
| *Garcinia dulcis* | Gourka |
| *Garcinia hessii* | Lemon Saptree |
| *Garcinia mangostana* | Mangosteen |
| *Garcinia portoricensis* | Palo De Cruz |
| *Gardenia brighamii* | Forest Gardenia |
| *Gardenia mannii* | Oahu Gardenia |
| *Gardenia remyi* | Remy's Gardenia |
| *Gardenia taitensis* | Tahitian Gardenia |
| *Garrya congdonii* | Chaparral Silktassel |
| *Garrya elliptica* | Wavyleaf Silktassel |
| *Garrya ovata* | Eggleaf Silktassel |
| *Garrya veatchii* | Canyon Silktassel |
| *Genista canariensis* | Canary Broom |
| *Ginkgo biloba* | Ginkgo |
| *Gleditsia aquatica* | Water Locust |
| *Gleditsia triacanthos* | Honeylocust |
| *Gleditsia x texana* | Texan Locust |
| *Gmelina arborea* | Gumhar |
| *Grevillea banksii* | Kahiliflower |
| *Grevillea robusta* | Silk Oak |
| *Guapira discolor* | Beeftree |
| *Guapira fragrans* | Black Mampoo |
| *Guapira globosa* | Roundleaf Blolly |
| *Guapira obtusata* | Corcho Prieto |
| *Gymnocladus dioicus* | Kentucky Coffeetree |
| *Halesia carolina* | Snowdrop Tree |
| *Halesia tetraptera* | Mountain Silverbell |
| *Hamamelis vernalis* | Ozark Witchhazel |
| *Hamelia patens* | Scarletbush |
| *Hibiscus arnottianus* | White Rosemallow |
| *Hibiscus brackenridgei* | Brackenridge's Rosemallow |
| *Hibiscus calyphyllus* | Lemonyellow Rosemallow |
| *Hibiscus clayi* | Red Kauai Rosemallow |
| *Hibiscus clypeatus* | Congo Mahoe |

| Scientific Name | Common Name |
|---|---|
| *Hibiscus elatus* | Mahoe |
| *Hibiscus kokio* | Red Rosemallow |
| *Hibiscus macrophyllus* | Largeleaf Rosemallow |
| *Hibiscus mutabilis* | Dixie Rosemallow |
| *Hibiscus pernambucensis* | Seaside Mahoe |
| *Hibiscus waimeae* | White Kauai Rosemallow |
| *Hippophae rhamnoides* | Seabuckthorn |
| *Hovenia dulcis* | Japanese Raisin Tree |
| *Hura crepitans* | Sandbox Tree |
| *Ilex ambigua* | Carolina Holly |
| *Ilex amelanchier* | Sarvis Holly |
| *Ilex anomala* | Hawai'i Holly |
| *Ilex cookii* | Te |
| *Ilex guianensis* | Maconcona |
| *Ilex hypaneura* | Luquillo Mountain Holly |
| *Ilex laevigata* | Smooth Winterberry |
| *Ilex longipes* | Georgia Holly |
| *Ilex macfadyenii* | Caribbean Holly |
| *Ilex myrtifolia* | Myrtle Dahoon |
| *Ilex nitida* | Puerto Rico Holly |
| *Ilex opaca* | American Holly |
| *Ilex paraguayensis* | Paraguay Tea |
| *Ilex sideroxyloides* | Gongolin |
| *Ilex sintenisii* | Sintenis' Holly |
| *Ilex urbaniana* | Urban's Holly |
| *Ilex x attenuata* | Topal Holly |
| *Illicium floridanum* | Florida Anisetree |
| *Illicium parviflorum* | Yellow Anisetree |
| *Inga ingoides* | Icecream Bean |
| *Inga laurina* | Sweetpea |
| *Inga marginata* | Inga-Feijao |
| *Inga nobilis* | Guama Venezolano |
| *Inga vera* | River Koko |
| *Jacaranda mimosifolia* | Jacaranda |
| *Juglans ailanthifolia* | Japanese Walnut |
| *Juglans cinerea* | Butternut |
| *Juglans hindsii* | Hind Walnut |
| *Juglans jamaicensis* | West Indian Walnut |
| *Juglans major* | Arizona Walnut |
| *Juglans microcarpa* | Little Walnut |
| *Juglans nigra* | Black Walnut |
| *Juglans regia* | English Walnut |

| Scientific Name | Common Name |
|---|---|
| *Juglans x bixbyi* | Bixby Walnut |
| *Juglans x intermedia* | Intermediate Walnut |
| *Juglans x quadrangulata* | Ncn - Walnut |
| *Juniperus chinensis* | Chinese Juniper |
| *Juniperus deppeana* | Alligator Juniper |
| *Juniperus excelsa* | Junípero |
| *Juniperus formosana* | Formosan Juniper |
| *Juniperus virginiana* | Eastern Red Cedar |
| *Kalopanax septemlobus* | Castor Aralia |
| *Kigelia africana* | Sausage Tree |
| *Koelreuteria bipinnata* | Chinese Flame Tree |
| *Koelreuteria elegans* | Flamegold |
| *Koelreuteria paniculata* | Goldenrain Tree |
| *Laburnum anagyroides* | Golden Chain Tree |
| *Lagerstroemia speciosa* | Queens Crapemyrtle |
| *Larix decidua* | European Larch |
| *Larix kaempferi* | Japanese Larch |
| *Larix laricina* | Tamarack |
| *Larix leptolepis* | Japanese Larch |
| *Larix lyallii* | Subalpine Larch |
| *Larix occidentalis* | Western Larch |
| *Larix siberica* | Siberian Larch |
| *Laurus nobilis* | Laurel De Olor |
| *Leptospermum flavescens* | Common Teatree |
| *Leptospermum laevigata* | Coastal Teatree |
| *Leptospermum scoparium* | Broom Teatree |
| *Leucaena leucocephala* | White Lead Tree |
| *Leucaena pulverulenta* | Great Leadtree |
| *Leucaena retusa* | Littleleaf Leadtree |
| *Ligustrum japonicum* | Ligustro |
| *Ligustrum lucidum* | Chinese Privet |
| *Ligustrum ovalifolium* | California Privet |
| *Ligustrum sinense* | Chinese Privet |
| *Lindera melissifolia* | Southern Spicebush |
| *Lindera subcoriacea* | Bog Spicebush |
| *Liquidambar formosana* | Chinese Sweet Gum |
| *Liquidambar styraciflua* | Sweetgum |
| *Liriodendron chinense* | Chinese Tulip Tree |
| *Liriodendron tulipifera* | Tulip Tree |
| *Litchi chinensis* | Lychee |
| *Lithocarpus densiflorus* | Tanoak |
| *Lysiloma bahamensis* | Wild Tamarind |

| Scientific Name | Common Name |
|---|---|
| *Lysiloma latisiliquum* | Bahama Lysiloma |
| *Macadamia integrifolia* | Macadamia Nut |
| *Maclura pomifera* | Osage Orange |
| *Magnolia acuminata* | Cucumber Tree |
| *Magnolia denudata* | Chinese Magnolia |
| *Magnolia fraseri* | Fraser Magnolia |
| *Magnolia grandiflora* | Southern Magnolia |
| *Magnolia macrophylla* | Bigleaf Magnolia |
| *Magnolia officinalis* | Ncn - Magnolia Officinalis |
| *Magnolia portoricensis* | Puerto Rico Magnolia |
| *Magnolia pyramidata* | Pyramid Magnolia |
| *Magnolia splendens* | Laurel Magnolia |
| *Magnolia tripetala* | Umbrella Magnolia |
| *Malpighia emarginata* | Barbados Cherry |
| *Malpighia fucata* | Palo Bronco |
| *Malpighia glabra* | Wild Crapemyrtle |
| *Malpighia infestissima* | Cowhage Cherry |
| *Malpighia linearis* | Bastard Cherry |
| *Malpighia woodburyana* | Woodbury's Stingingbush |
| *Malus angustifolia* | Southern Crabapple |
| *Malus baccata* | Siberian Crabapple |
| *Malus coronaria* | Sweet Crabapple |
| *Malus floribunda* | Japanese Flowering Crabapple |
| *Malus glabrata* | Biltmore Crabapple |
| *Malus glaucescens* | Dunbar Crabapple |
| *Malus ioensis* | Prairie Crabapple |
| *Malus mandshurica* | Siberian Crabapple |
| *Malus prunifolia* | Plumleaf Crabapple |
| *Malus pumila* | Paradise Apple |
| *Malus sylvestris* | Apple |
| *Malus x arnoldiana* | Arnold's Apple |
| *Malus x dawsoniana* | Ncn - Malus X Dawsoniana |
| *Malus x magdeburgensis* | Magdeburg Apple |
| *Malus x platycarpa* | Bigfruit Crab |
| *Malus x soulardii* | Soulard Crab |
| *Mammea americana* | Mammee Apple |
| *Mangifera indica* | Mango |
| *Manikara bahamensis* | Wild Dilly |
| *Manilkara bidentata* | Balata |
| *Manilkara jaimiqui* | Wild Dilly |
| *Manilkara pleeana* | Zapote De Costa |
| *Manilkara valenzuela* | Nisperillo |

| Scientific Name | Common Name |
|---|---|
| *Manilkara zapota* | Sapodilla |
| *Mastichodendron foetidissium* | False Mastic |
| *Maytenus boaria* | Maitén |
| *Maytenus cymosa* | Caribbean Mayten |
| *Maytenus elongata* | Puerto Rico Mayten |
| *Maytenus laevigata* | White Cinnamon |
| *Maytenus phyllanthoides* | Florida Mayten |
| *Maytenus ponceana* | Ponce Mayten |
| *Melaleuca leucadendra* | Punk Tree |
| *Melaleuca quinquenervia* | Cajeput Tree |
| *Melia azedarach* | Chinaberry |
| *Melicoccus bijugatus* | Spanish Lime |
| *Metasequoia glyptostroboides* | Dawn Redwood |
| *Metrosideros macropus* | 'Ohi'a |
| *Metrosideros polymorpha* | 'Ohi'a Lehua |
| *Metrosideros rugosa* | Lehua Papa |
| *Metrosideros tremuloides* | Lehua 'Ahihi |
| *Metrosideros waialealae* | Kauai Bottlebrush |
| *Morinda citrifolia* | Indian Mulberry |
| *Morinda trimera* | Noni Kuahiwi |
| *Morus alba* | White Mulberry |
| *Morus nigra* | Black Mulberry |
| *Morus rubra* | Red Mulberry |
| *Myoporum sandwicense* | Naio |
| *Myrcianthes fragrans* | Twinberry |
| *Myrciaria borinquena* | False Tamarisk |
| *Myrciaria floribunda* | Guavaberry |
| *Myrciaria myrtifolia* | Ridgetop Guavaberry |
| *Myrsine alyxifolia* | Forest Colicwood |
| *Myrsine coriacea* | Leathery Colicwood |
| *Myrsine degeneri* | Summit Colicwood |
| *Myrsine emarginata* | Mountain Colicwood |
| *Myrsine fernseei* | Streambank Colicwood |
| *Myrsine fosbergii* | Koolau Range Colicwood |
| *Myrsine helleri* | Wahiawa Bog Colicwood |
| *Myrsine kauaiensis* | Kauai Colicwood |
| *Myrsine knudsenii* | Kokee Colicwood |
| *Myrsine lanaiensis* | Lanai Colicwood |
| *Myrsine lessertiana* | Kolea Lau Nui |
| *Myrsine mezii* | Hanapepe River Colicwood |
| *Myrsine petiolata* | Swamp Colicwood |
| *Myrsine pukooensis* | Molokai Colicwood |

| Scientific Name | Common Name |
|---|---|
| *Myrsine sandwicensis* | Kokea Lau Li'i |
| *Myrsine wawraea* | Mt. Kahili Colicwood |
| *Nectandra hihua* | Shinglewood |
| *Nectandra krugii* | Krug's Sweetwood |
| *Nectandra membranacea* | Sweetwood |
| *Nectandra turbacensis* | Laurel Amarillo |
| *Nothofagus alpina* | Raulí |
| *Nothofagus dombeyi* | Coigüe |
| *Nothofagus obliqua* | Roble |
| *Nyssa aquatica* | Water Tupelo |
| *Nyssa biflora* | Swamp Tupelo |
| *Nyssa sylvatica* | Black Tupelo |
| *Nyssa ursina* | Bear Tupelo |
| *Ochrosia compta* | Holei |
| *Ochrosia elliptica* | Elliptic Yellowwood |
| *Ochrosia haleakalae* | Island Yellowwood |
| *Ochrosia kauaiensis* | Kauai Yellowwood |
| *Ochrosia kilaueaensis* | Hawai'i Yellowwood |
| *Olneya tesota* | Tesota |
| *Ostrya carpinifolia* | Hop Hornbeam |
| *Ostrya knowltonii* | Knowlton Hophornbeam |
| *Ostrya virginiana* | Eastern Hophornbeam |
| *Oxydendrum arboreum* | Sourwood |
| *Pachira insignis* | Wild Chestnut |
| *Parkinsonia aculeata* | Jerusalem Thorn |
| *Parkinsonia florida* | Blue Paloverde |
| *Parkinsonia microphylla* | Yellow Paloverde |
| *Parkinsonia texana* | Texas Paloverde |
| *Parrotia persica* | Persian Ironwood |
| *Paulownia tomentosa* | Royal Paulownia |
| *Peltophorum dubia* | Horsebush |
| *Peltophorum pterocarpum* | Peltophorum |
| *Persea americana* | Avocado |
| *Persea borbonia* | Redbay |
| *Persea humilis* | Silk Bay |
| *Persea krugii* | Canela |
| *Persea lingue* | Lingue |
| *Persea palustris* | Swamp Bay |
| *Persea urbaniana* | Aquacatillo |
| *Phellodendron amurense* | Amur Corktree |
| *Phellodendron japonicum* | Japanese Corktree |
| *Picea abies* | Norway Spruce |

| Scientific Name | Common Name |
|---|---|
| *Picea abies x asperata* | Norway X Chinese Spruce |
| *Picea asperata* | Chinese Spruce |
| *Picea bicolor* | Alcock Spruce |
| *Picea breweriana* | Brewer Spruce |
| *Picea engelmannii* | Engelmann Spruce |
| *Picea glauca* | White Spruce |
| *Picea glehnii* | Sagholia Spruce |
| *Picea jezoensis* | Yeddo Spruce |
| *Picea koraiensis* | Korean Spruce |
| *Picea koyamai* | Yatsugatake-Tohi |
| *Picea mariana* | Black Spruce |
| *Picea montigena* | Montigena Spruce |
| *Picea omorika* | Serbian Spruce |
| *Picea pungens* | Blue Spruce |
| *Picea rubens* | Red Spruce |
| *Picea sitchensis* | Sitka Spruce |
| *Picea x lutzii* | Lutz's Spruce |
| *Pimenta dioica* | Allspice |
| *Pimenta racemosa* | Bay Rum Tree |
| *Pinus albicaulis* | Whitebark Pine |
| *Pinus aristata* | Bristlecone Pine |
| *Pinus arizonica* | Arizona Pine |
| *Pinus armandii* | David's Pine |
| *Pinus attenuata* | Knobcone Pine |
| *Pinus balfouriana* | Foxtail Pine |
| *Pinus banksiana* | Jack Pine |
| *Pinus brutia* | Turkish Pine |
| *Pinus californiarum* | California Pine |
| *Pinus canariensis* | Canary Island Pine |
| *Pinus cembra* | Swiss Stone Pine |
| *Pinus cembroides* | Mexican Pinyon |
| *Pinus clausa* | Sand Pine |
| *Pinus contorta* | Lodgepole Pine |
| *Pinus coulteri* | Coulter Pine |
| *Pinus densiflora* | Japanese Red Pine |
| *Pinus discolor* | Border Pinyon |
| *Pinus echinata* | Shortleaf Pine |
| *Pinus edulis* | Pinyon Pine |
| *Pinus eldarica* | Afghan Pine |
| *Pinus elliottii* | Slash Pine |
| *Pinus engelmannii* | Apache Pine |
| *Pinus flexilis* | Limber Pine |

| Scientific Name | Common Name |
|---|---|
| *Pinus glabra* | Spruce Pine |
| *Pinus halepensis* | Aleppo Pine |
| *Pinus jeffreyi* | Jeffery Pine |
| *Pinus kesiya* | Khasia Pine |
| *Pinus lambertiana* | Sugar Pine |
| *Pinus leiophylla* | Chihuahua Pine |
| *Pinus leucodermis* | Bosnian Pine |
| *Pinus longaeva* | Intermountain Bristlecone Pine |
| *Pinus maritima* | French Maritime Pine |
| *Pinus massoniana* | Mason Pine |
| *Pinus monophylla* | Singleleaf Pinyon |
| *Pinus montezumae* | Montezuma Pine |
| *Pinus monticola* | Western White Pine |
| *Pinus muricata* | Bishop Pine |
| *Pinus nigra* | Austrian Pine |
| *Pinus palustris* | Longleaf Pine |
| *Pinus parviflora* | Japanese White Pine |
| *Pinus patula* | Mexican Weeping Pine |
| *Pinus pinaster* | Maritime Pine |
| *Pinus pinea* | Itailian Stone Pine |
| *Pinus pithyusa* | Pitsunda Pine |
| *Pinus ponderosa* | Ponderosa Pine |
| *Pinus pungens* | Table Mountain Pine |
| *Pinus quadrifolia* | Parry Pinyon |
| *Pinus radiata* | Monterey Pine |
| *Pinus remota* | Papershell Pinyon |
| *Pinus resinosa* | Red Pine |
| *Pinus rigida* | Pitch Pine |
| *Pinus sabiniana* | Digger Pine |
| *Pinus serotina* | Pond Pine |
| *Pinus strobiformis* | Southwestern White Pine |
| *Pinus strobus* | Eastern White Pine |
| *Pinus sylvestris* | Scotch Pine |
| *Pinus tabulaeformis* | Chinese Red Pine |
| *Pinus taeda* | Loblolly Pine |
| *Pinus thunbergiana* | Japanese Black Pine |
| *Pinus torreyana* | Torrey Pine |
| *Pinus uncinata* | Mountain Pine |
| *Pinus virginiana* | Virginia Pine |
| *Pinus washoensis* | Washoe Pine |
| *Pinus x attenuradiata* | Monterey Knobcone Pine Cross |
| *Pinus x sondereggeri* | Sonderegger Pine |

| Scientific Name | Common Name |
|---|---|
| *Pinus yunnanensis* | Yunnan Pine |
| *Piscidia carthagenensis* | Stinkwood |
| *Piscidia piscipula* | Florida Fishpoision Tree |
| *Pisonia aculeata* | Pullback |
| *Pisonia albida* | Corcho Bobo |
| *Pisonia brunoniana* | Australasian Catchbirdtree |
| *Pisonia capitata* | Mexican Devil's-Claws |
| *Pisonia floridana* | Rock Key Devil's-Claws |
| *Pisonia grandis* | Grand Devil's-Claws |
| *Pisonia rotundata* | Smooth Devil's-Claws |
| *Pisonia sandwicensis* | Aulu |
| *Pisonia subcordata* | Water Mampoo |
| *Pisonia umbellifera* | Umbrella Catchbirdtree |
| *Pisonia wagneriana* | Kauai Catchbirdtree |
| *Pistacia atlantica* | Mt. Atlas Mastic Tree |
| *Pistacia chinensis* | Chinese Pistache |
| *Pistacia vera* | Pistachio |
| *Pithecellobium dulce* | Guamuchil |
| *Pithecellobium keyense* | Florida Keys Blackbead |
| *Pithecellobium unguis-cati* | Catclaw Blackbead |
| *Platanus hybrida* | London Planetree |
| *Platanus occidentalis* | American Sycamore |
| *Platanus orientalis* | Oriental Planetree |
| *Platanus racemosa* | California Sycamore |
| *Platanus wrightii* | Arizona Sycamore |
| *Platycladus orientalis* | Oriental Arbor Vitae |
| *Plumeria alba* | Milktree |
| *Plumeria obtusa* | Singapore Graveyard Flower |
| *Podocarpus coriaceus* | Yucca Plum Pine |
| *Podocarpus gracilior* | Fern Pine |
| *Podocarpus nagi* | Broad Leaf Podocarpus |
| *Podocarpus saligna* | Mañio De Hojas Largas |
| *Poncirus trifoliata* | Hardy Orange |
| *Populus alba* | White Poplar |
| *Populus angustifolia* | Narrowleaf Cottonwood |
| *Populus balsamifera* | Balsam Poplar |
| *Populus deltoides* | Eastern Cottonwood |
| *Populus fremontii* | Fremont Cottonwood |
| *Populus grandidentata* | Bigtooth Aspen |
| *Populus heterophylla* | Swamp Cottonwood |
| *Populus maximowiczii 'androscoggin'* | Japanese Poplar |
| *Populus nigra* | Black Poplar |

| Scientific Name | Common Name |
|---|---|
| *Populus simonii* | Chinese Popular |
| *Populus tomentosa* | Chinese White Poplar |
| *Populus tremula* | European Aspen |
| *Populus tremuloides* | Quaking Aspen |
| *Populus x acuminata* | Lanceleaf Cottonwood |
| *Populus x brayshawii* | Hybrid Balsam Poplar |
| *Populus x canadensis* | Carolina Poplar |
| *Populus x canescens* | Gray Poplar |
| *Populus x heimburgeri* | Heiburger's Poplar |
| *Populus x hinckleyana* | Hinckley Poplar |
| *Populus x inopina* | Ncn - Populus X Inopina |
| *Populus x jackii* | Balm-Of-Gilead |
| *Populus x parryi* | Parry's Cottonwood |
| *Populus x rouleauiana* | Rouleauiana Cottonwood |
| *Populus x smithii* | Smith's Poplar |
| *Prosopis alpataco* | Alpataco Mesquite |
| *Prosopis argentina* | Silver Mesquite |
| *Prosopis burkartii* | Burkart's Mesquite |
| *Prosopis caldenia* | Calden |
| *Prosopis calingastana* | Cusqui |
| *Prosopis campestris* | Field Prosopis |
| *Prosopis castellanosii* | Castellanosi Mesquite |
| *Prosopis chilensis* | Algarrobo |
| *Prosopis denudans* | Algarrobo Pataonica |
| *Prosopis elata* | Lofty Prosopis |
| *Prosopis farcta* | Syrian Mesquite |
| *Prosopis ferox* | Fierce Prosopis |
| *Prosopis fiebrigii* | Fiebrig's Prosopis |
| *Prosopis hassleri* | Algarrobo |
| *Prosopis humilis* | Low Prosopis |
| *Prosopis juliflora* | Ncn - Mesquite |
| *Prosopis kuntzei* | Itin |
| *Prosopis laevigata* | Smooth Mesquite |
| *Prosopis pallida* | Algarroba |
| *Prosopis palmeri* | Palm Leaved Prosopis |
| *Prosopis rojasiana* | Red Prosopis |
| *Prosopis ruizlealii* | Ruiz's Prosopis |
| *Prosopis ruscifolia* | Broom Leaved Prosopis |
| *Prosopis sericantha* | Silken Prosopis |
| *Prosopis torquata* | Tintitaco |
| *Prosopis velutina* | Velvet Mesquite |
| *Prunus alabamensis* | Alabama Cherry |

| Scientific Name | Common Name |
|---|---|
| *Prunus alleghaniensis* | Allegheny Plum |
| *Prunus amygdalus* | Almendro |
| *Prunus armeniaca* | Apricot |
| *Prunus avium* | Sweet Cherry |
| *Prunus cerasifera* | Cherry Plum |
| *Prunus dulcis* | Sweet Almond |
| *Prunus ilicifolia* | Hollyleaf Cherry |
| *Prunus lusitanica* | Portugal Laurel |
| *Prunus maackii* | Amur Chokecherry |
| *Prunus munsoniana* | Wildgoose Plum |
| *Prunus myrtifolia* | West Indies Cherry |
| *Prunus nigra* | Canada Plum |
| *Prunus occidentalis* | Western Cherry Laurel |
| *Prunus padus* | European Bird Cherry |
| *Prunus persica* | Nectarine |
| *Prunus pleuradenia* | Antilles Cherry |
| *Prunus sargentii* | Sargent Cherry |
| *Prunus serotina* | Black Cherry |
| *Prunus serrulata* | Kwanzan Cherry |
| *Prunus spachiana f. Ascendens* | Usuzumi Cherry |
| *Prunus takesimensis* | Korean Cherry |
| *Prunus tomentosa* | Manchu Cherry |
| *Prunus umbellata* | Flatwods Plum |
| *Prunus vulgaris* | Wild Cherry |
| *Prunus x incam 'okame'* | Okame Cherry |
| *Prunus x orthosepala* | Orthocepala Cherry |
| *Prunus x palmeri* | Palmer's Prunus |
| *Prunus x slavinii* | Slavin's Prunus |
| *Prunus yedoensis* | Yoshino Cherry |
| *Pseudolarix amabilis* | Golden Larch |
| *Pseudotsuga macrocarpa* | Bigcone Douglas Fir |
| *Pseudotsuga menziesii* | Douglas Fir |
| *Psidium amplexicaule* | Mountain Guava |
| *Psidium calyptranthoides* | Luquillo Mountain Guava |
| *Psidium cattleianum* | Strawberry Guava |
| *Psidium longipes* | Mangroveberry |
| *Psidium sintenisii* | Sintenis' Guava |
| *Ptelea crenulata* | California Hoptree |
| *Pterocarpus indicus* | India Paduak |
| *Pterocarpus macrocarpus* | Burma Paduk |
| *Pterocarpus officinalis* | Dragonsblood Tree |
| *Pterocarya stenoptera* | Chinese Wingnut |

| Scientific Name | Common Name |
|---|---|
| *Pyrus calleryana* | Callery Pear |
| *Pyrus communis* | Common Pear |
| *Pyrus pyrifolia* | Chinese Pear |
| *Quercus acerifolia* | Mapleleaf Oak |
| *Quercus acutissima* | Sawtooth Oak |
| *Quercus agrifolia* | Coast Live Oak |
| *Quercus alba* | White Oak |
| *Quercus arkansana* | Arkansas Oak |
| *Quercus austrina* | Bluff Oak |
| *Quercus bemareei* | Ncn - Oak |
| *Quercus berberidifolia* | Berberidifolia Oak |
| *Quercus bicolor* | Swamp White Oak |
| *Quercus boyntonii* | Boynton Sand Post Oak |
| *Quercus buckleyi* | Buckley Oak |
| *Quercus carmenensis* | Mexican Oak |
| *Quercus cerris* | Euopean Turkey Oak |
| *Quercus chihuahuensis* | Chihuahuan Oak |
| *Quercus chrysolepis* | Canyon Live Oak |
| *Quercus coccinea* | Scarlet Oak |
| *Quercus cornelius-mulleri* | Muller Oak |
| *Quercus depressipes* | Davis Mountain Oak |
| *Quercus douglasii* | Blue Oak |
| *Quercus dumosa* | Coastal Sage Scrub Oak |
| *Quercus durata* | Leather Oak |
| *Quercus ellipsoidalis* | Northern Pin Oak |
| *Quercus engelmannii* | Engelmann Oak |
| *Quercus falcata* | Southern Red Oak |
| *Quercus fusiformis* | Plateau Oak |
| *Quercus garryana* | Oregon White Oak |
| *Quercus geminata* | Sand Live Oak |
| *Quercus georgiana* | Georgia Oak |
| *Quercus graciliformis* | Chisos Oak |
| *Quercus gravesii* | Chisos Red Oak |
| *Quercus havardii* | Havard Oak |
| *Quercus hemisphaerica* | Darlington Oak |
| *Quercus ilex* | Roble Negro |
| *Quercus imbricaria* | Shingle Oak |
| *Quercus incana* | Bluejack Oak |
| *Quercus john-tuckeri* | Tucker Oak |
| *Quercus kelloggii* | California Black Oak |
| *Quercus laceyi* | Lacey Oak |
| *Quercus laevis* | Turkey Oak |

| Scientific Name | Common Name |
|---|---|
| *Quercus laurifolia* | Laurel Oak |
| *Quercus lobata* | California White Oak |
| *Quercus lyrata* | Overcup Oak |
| *Quercus macrocarpa* | Bur Oak |
| *Quercus margarettiae* | Runner Oak |
| *Quercus marilandica* | Blackjack Oak |
| *Quercus michauxii* | Swamp Chestnut Oak |
| *Quercus mohriana* | Mohr Oak |
| *Quercus muehlenbergii* | Chinkapin Oak |
| *Quercus nigra* | Water Oak |
| *Quercus oblongifolia* | Mexican Blue Oak |
| *Quercus oglethorpensis* | Oglethorpe Oak |
| *Quercus pacifica* | Channel Island Scrub Oak |
| *Quercus pagoda* | Cherrybark Oak |
| *Quercus palustris* | Pin Oak |
| *Quercus parvula* | Coast Oak |
| *Quercus petraea* | Durmast Oak |
| *Quercus phellos* | Willow Oak |
| *Quercus polymorpha* | Netleaf White Oak |
| *Quercus prinoides* | Dwarf Chinkapin Oak |
| *Quercus prinus* | Chestnut Oak |
| *Quercus pungens* | Pungent Oak |
| *Quercus robur* | English Oak |
| *Quercus robusta* | Robust Oak |
| *Quercus rubra* | Northern Red Oak |
| *Quercus rugosa* | Netleaf Oak |
| *Quercus shumardii* | Shumard Oak |
| *Quercus similis* | Bottomland Post Oak |
| *Quercus sinuata* | Bastard Oak |
| *Quercus sinuata var. Sinuata* | Durand Oak |
| *Quercus stellata* | Post Oak |
| *Quercus suber* | Cork Oak |
| *Quercus tardifolia* | Lateleaf Oak |
| *Quercus texana* | Texas Red Oak |
| *Quercus tomentella* | Island Live Oak |
| *Quercus toumeyi* | Toumey Oak |
| *Quercus turbinella* | Sonoran Scrub Oak |
| *Quercus velutina* | Black Oak |
| *Quercus viminea* | Sonoran Oak |
| *Quercus virginiana* | Live Oak |
| *Quercus wislizeni* | Interior Live Oak |
| *Quercus x acutidens* | Torrey's Hybrid Oak |

| Scientific Name | Common Name |
|---|---|
| *Quercus x alvordiana* | Alvord Oak |
| *Quercus x ashei* | Ash's Oak |
| *Quercus x atlantica* | Atlantic Oak |
| *Quercus x beadlei* | Beadle's Oak |
| *Quercus x beaumontiana* | Beaumont's Oak |
| *Quercus x bebbiana* | Bebb's Oak |
| *Quercus x beckyae* | Becky's Oak |
| *Quercus x benderi* | Bender Oak |
| *Quercus x bernardiensis* | Bernard's Oak |
| *Quercus x bimundorum* | Bimindorum Oak |
| *Quercus x blufftonensis* | Bluffton's Oak |
| *Quercus x brittonii* | Britton's Oak |
| *Quercus x burnetensis* | Burnet's Oak |
| *Quercus x bushii* | Bush's Oak |
| *Quercus x byarsii* | Byars' Oak |
| *Quercus x caduca* | Caduca Oak |
| *Quercus x caesariensis* | Caesar Oak |
| *Quercus x capesii* | Cape Oak |
| *Quercus x cocksii* | Cock's Oak |
| *Quercus x columnaris* | Column Oak |
| *Quercus x comptoniae* | Compton's Oak |
| *Quercus x cravenensis* | Craven's Oak |
| *Quercus x deamii* | Deam's Oak |
| *Quercus x discreta* | Discreet Oak |
| *Quercus x diversiloba* | Manylobed Oak |
| *Quercus x egglestonii* | Eggleston's Oak |
| *Quercus x eplingii* | Epling's Oak |
| *Quercus x exacta* | Exacta Oak |
| *Quercus x faxonii* | Faxon's Oak |
| *Quercus x fernaldii* | Fernald's Oak |
| *Quercus x fernowii* | Fernow's Oak |
| *Quercus x filialis* | Filialis Oak |
| *Quercus x fontana* | Fontana Oak |
| *Quercus x ganderi* | Gander Oak |
| *Quercus x garlandensis* | Garland Oak |
| *Quercus x giffordii* | Gifford's Oak |
| *Quercus x grandidentata* | Largeleaf Oak |
| *Quercus x guadalupensis* | Guadalupe Oak |
| *Quercus x harbisonii* | Harbison's Oak |
| *Quercus x hastingsii* | Hasting's Oak |
| *Quercus x hawkinsiae* | Hawkins' Oak |
| *Quercus x heterophylla* | Oddleaf Oak |

| Scientific Name | Common Name |
|---|---|
| *Quercus x howellii* | Howell's Oak |
| *Quercus x humidicola* | Humidicola Oak |
| *Quercus x incomita* | Incommita Oak |
| *Quercus x inconstans* | Inconstans Oak |
| *Quercus x introgressa* | Introgressa Oak |
| *Quercus x jackiana* | Jack's Oak |
| *Quercus x jolonensis* | Jolon's Oak |
| *Quercus x joorii* | Jorr's Oak |
| *Quercus x leana* | Lea's Hybrid Oak |
| *Quercus x ludoviciana* | Ludviciana Oak |
| *Quercus x macdonaldii* | Macdonald Oak |
| *Quercus x macnabiana* | Macnab's Oak |
| *Quercus x megaleia* | Megalia Oak |
| *Quercus x mellichampii* | Mellichamp's Oak |
| *Quercus x moreha* | Oracle Oak |
| *Quercus x moultonensis* | Moulton's Oak |
| *Quercus x munzii* | Munz's Oak |
| *Quercus x mutabilis* | Mutabilis Oak |
| *Quercus x neopalmeri* | Neopalmeri Oak |
| *Quercus x neotharpii* | Neotharpi Oak |
| *Quercus x nessiana* | Ness's Oak |
| *Quercus x organensis* | Organ Oak |
| *Quercus x oviedoensis* | Oveido's Oak |
| *Quercus x palaeolithicola* | Palaeolithicola Oak |
| *Quercus x palmeriana* | Palmer's Oak |
| *Quercus x pauciloba* | Wavyleaf Oak |
| *Quercus x podophylla* | Podophylla Oak |
| *Quercus x pseudomargarettiae* | Ncn - Oak |
| *Quercus x rehderi* | Rehder's Oak |
| *Quercus x riparia* | Riparian Oak |
| *Quercus x robbinsii* | Robinn's Oak |
| *Quercus x rolfsii* | Rolf's Oak |
| *Quercus x rudkinii* | Rudkin's Oak |
| *Quercus x runcinata* | Bottom Oak |
| *Quercus x sargentii* | Sargent's Oak |
| *Quercus x saulii* | Saul's Oak |
| *Quercus x schochiana* | Schochiana Oak |
| *Quercus x schuettei* | Schuett's Oak |
| *Quercus x smallii* | Small's Oak |
| *Quercus x stelloides* | Ncn - Oak |
| *Quercus x sterilis* | Sterile Oak |
| *Quercus x sterretii* | Sterret's Oak |

| Scientific Name | Common Name |
|---|---|
| *Quercus x subconvexa* | Ncn - Oak |
| *Quercus x subfalcata* | Subfalcata Oak |
| *Quercus x subintegra* | Subintegra Oak |
| *Quercus x substellata* | Substella Oak |
| *Quercus x tharpii* | Tharp's Oak |
| *Quercus x tottenii* | Totte's Oak |
| *Quercus x townei* | Towne's Oak |
| *Quercus x tridentata* | Tridentata Oak |
| *Quercus x vaga* | Vaga Oak |
| *Quercus x venulosa* | Venulosa Oak |
| *Quercus x wagneri* | Wagner's Oak |
| *Quercus x walteriana* | Walter's Oak |
| *Quercus x willdenowiana* | Willdenow's Oak |
| *Reynosia guama* | Guama |
| *Reynosia krugii* | Krug's Darlingplum |
| *Reynosia uncinata* | Sloe |
| *Rhamnus arguta* | Sharp-Tooth Buckthorn |
| *Rhamnus davurica* | Dahurian Buckthorn |
| *Rhamnus japonica* | Japanese Buckthorn |
| *Rhamnus pirifolia* | Island Redberry |
| *Rhizophora mucronata* | Mangrove |
| *Rhododendron catawbiense* | Catawba Rosebay |
| *Rhododendron macrophyllum* | Pacific Rhododendron |
| *Rhododendron x welleslyanum* | Wellesly Rhododendron |
| *Rhus kearneyi* | Kearney's Sumac |
| *Rhus lancea* | African Sumac |
| *Rhus lanceolata* | Prairie Sumac |
| *Rhus microphylla* | Littleleaf Sumac |
| *Rhus sandwicensis* | Neneleau |
| *Rhus virens* | Evergreen Sumac |
| *Rhus x pulvinata* | Pulvinate Sumac |
| *Robinia hispida* | Bristly Locust |
| *Robinia neomexicana* | New Mexico Locust |
| *Robinia pseudoacacia* | Black Locust |
| *Robinia x ambigua* | Purple Robe Locust |
| *Robinia x holdtii* | Holdt's Locust |
| *Robinia x longiloba* | Longleaf Locust |
| *Robinia x margarettiae* | Margarett's Locust |
| *Salix alba* | White Willow |
| *Salix amygdaloides* | Peachleaf Willow |
| *Salix arbusculoides* | Littletree Willow |
| *Salix barclayi* | Barclay's Willow |

| Scientific Name | Common Name |
|---|---|
| *Salix bonplandiana* | Bonpland Willow |
| *Salix cinerea* | Large Gray Willow |
| *Salix elaeagnos* | Elaeagnus Willow |
| *Salix eriocephala* | Diamond Willow |
| *Salix floridana* | Florida Willow |
| *Salix fluviatilis* | River Willow |
| *Salix fragilis* | Crack Willow |
| *Salix geyeriana* | Geyer's Willow |
| *Salix glauca* | Grayleaf Willow |
| *Salix gooddingii* | Goodding's Willow |
| *Salix humboldtiana* | Humboldt's Willow |
| *Salix laevigata* | Red Willow |
| *Salix ligulifolia* | Strapleaf Willow |
| *Salix lutea* | Yellow Willow |
| *Salix maccalliana* | Mccalla's Willow |
| *Salix matsudana* | Corkscrew Willow |
| *Salix melanopsis* | Dusky Willow |
| *Salix monticola* | Park Willow |
| *Salix myricoides* | Bayberry Willow |
| *Salix myrtillifolia* | Blueberry Willow |
| *Salix nigra* | Black Willow |
| *Salix pellita* | Satiny Willow |
| *Salix pentandra* | Laurel Leaved Willow |
| *Salix petiolaris* | Meadow Willow |
| *Salix planifolia* | Diamondleaf Willow |
| *Salix purpurea* | Purpleosier Willow |
| *Salix pyrifolia* | Balsam Willow |
| *Salix scouleriana* | Scouler Willow |
| *Salix sericea* | Silky Willow |
| *Salix serissima* | Autumn Willow |
| *Salix sessilifolia* | Northwest Sandbar Willow |
| *Salix sitchensis* | Sitka Willow |
| *Salix x beschelii* | Beschel's Willow |
| *Salix x conifera* | Conifer Willow |
| *Salix x ehrhartiana* | Ehrhart's Willow |
| *Salix x glatfelteri* | Glatfelter's Willow |
| *Salix x pendulina* | Wisconsin Weeping Willow |
| *Salix x princeps-ourayi* | Ouray Willow |
| *Salix x rubens* | Hybrid Crack Willow |
| *Salix x sepulcralis* | Weeping Willow |
| *Sambucus nigra* | European Black Elderberry |
| *Sambucus racemosa* | Red Elderberry |

| Scientific Name | Common Name |
|---|---|
| *Sapindus mukorossi* | Chinese Soapberry |
| *Sapindus oahuensis* | Lonomea |
| *Sapindus saponaria* | Wingleaf Soapberry |
| *Sapium caribaeum* | Gumtree |
| *Sapium laurifolium* | Hinchahuevos |
| *Sapium laurocerasus* | Milktree |
| *Sassafras albidum* | Sassafras |
| *Schaefferia frutescens* | Florida Boxwood |
| *Schefflera gleasonii* | Yuquilla |
| *Schefflera morototonii* | Matchwood |
| *Schinus longifolius* | Longleaf Peppertree |
| *Schinus molle* | California Peppertree |
| *Schinus polygamus* | Huingan |
| *Senna alata* | Emperor's Candlesticks |
| *Senna atomaria* | Flor De San Jose |
| *Senna bicapsularis* | Christmasbush |
| *Senna corymbosa* | Argentine Senna |
| *Senna gaudichaudii* | Gaudichaud's Senna |
| *Senna mexicana* | Mexican Senna |
| *Senna multijuga* | False Sicklepod |
| *Senna pendula* | Valamuerto |
| *Senna polyphylla* | Retama Prieta |
| *Senna racemosa* | Limestone Senna |
| *Senna septentrionalis* | Hedionda Macho |
| *Senna siamea* | Siamese Cassia |
| *Senna spectabilis* | Casia Amarilla |
| *Senna sulfurea* | Smooth Senna |
| *Senna surattensis* | Glossy Shower |
| *Senna x floribunda* | Floribunda Senna |
| *Sequoia sempervirens* | Coast Redwood |
| *Sequoiadendron giganteum* | Giant Sequoia |
| *Simarouba glauca* | Paradise Tree |
| *Simarouba tulae* | Aceitillo Falso |
| *Sophora affinis* | Texas Sophora |
| *Sophora chrysophylla* | Mamani |
| *Sophora japonica* | Japanese Pagoda Tree |
| *Sophora leachiana* | Western Necklacepod |
| *Sophora tomentosa* | Yellow Necklacepod |
| *Sorbus americana* | American Mountain Ash |
| *Sorbus aucuparia* | European Mountain Ash |
| *Sorbus groenlandica* | Greenland Mountain Ash |
| *Sorbus hybrida* | Oakleaf Mountain Ash |

| Scientific Name | Common Name |
|---|---|
| *Sorbus scopulina* | Greene's Mountain Ash |
| *Sorbus sitchensis* | Western Mountain Ash |
| *Sorbus x thuringiaca* | Oakleaf Mountain Ash |
| *Spathodea campanulata* | African Tulip Tree |
| *Spondias dulcis* | Ambarella |
| *Spondias mombin* | Yellow Mombim |
| *Spondias purpurea* | Purple Mombin |
| *Sterculia apetala* | Panama Tree |
| *Sterculia discolor* | Sterculia Rosada |
| *Stewartia koreana* | Korean Stewartia |
| *Stewartia malacodendron* | Silky Camellia |
| *Styrax americanus* | American Snowbell |
| *Styrax grandifolius* | Bigleaf Snowbell |
| *Styrax platanifolius* | Sycamoreleaf Snowbell |
| *Styrax portoricensis* | Palo De Jazmin |
| *Swietenia macrophylla* | Honduras Mahogany |
| *Swietenia mahogani* | Mahogany |
| *Syzygium cumini* | Jambolan Plum |
| *Syzygium grande* | Sea Apple |
| *Syzygium jambos* | Malabar Plum |
| *Syzygium malaccense* | Malaysian Apple |
| *Syzygium sandwicense* | 'Ohi'a Ha |
| *Tabebuia aurea* | Caribbean Trumpet-Tree |
| *Tabebuia avellanedae* | Ipe-Roxo |
| *Tabebuia chrysantha* | Roble Amarillo |
| *Tabebuia chrysotricha* | Ipe-Amarelo |
| *Tabebuia donnell-smithii* | Primavera |
| *Tabebuia glomerata* | Yellow Poui |
| *Tabebuia haemantha* | Roble Cimarron |
| *Tabebuia heterophylla* | White Cedar |
| *Tabebuia rigida* | Roble De Sierra |
| *Tabebuia rosea* | Apamate |
| *Tabebuia schumanniana* | Roble Colorado |
| *Tabebuia serratifolia* | Yellow Poui |
| *Tamarindus indica* | India Tamarind |
| *Taxodium ascendens* | Pond Cypress |
| *Taxodium distichum* | Baldcypress |
| *Taxodium mucronatum* | Montezuma Cypress |
| *Taxus cuspidata* | Japanese Yew |
| *Tecoma castanifolia* | Chestnutleaf Trumpetbush |
| *Terminalia catappa* | Tropical Almond |
| *Terminalia ivorensis* | Ivory Coast Almond |

| Scientific Name | Common Name |
|---|---|
| *Terminalia muelleri* | Australian Almond |
| *Terminalia myriocarpa* | East Indian Almond |
| *Terminalia oblonga* | Peruvian Almond |
| *Tetrazygia angustifolia* | Stinkingfish |
| *Tetrazygia bicolor* | Florida Clover Ash |
| *Tetrazygia biflora* | Puerto Rico Clover Ash |
| *Tetrazygia elaeagnoides* | Krekre |
| *Tetrazygia urbanii* | Cenizo |
| *Thespesia grandiflora* | Maga |
| *Thevetia peruviana* | Luckynut |
| *Thuja occidentalis* | Northern White Cedar |
| *Thuja plicata* | Western Redcedar |
| *Tibouchina urvilleana* | Princess-Flower |
| *Tilia americana* | American Basswood |
| *Tilia cordata* | Littleleaf Linden |
| *Tilia euchlora* | Crimean Linden |
| *Tilia petiolaris* | Pendent Silver Linden |
| *Tilia platyphyllos* | Bigleaf Linden |
| *Tilia tomentosa* | Silver Linden |
| *Tilia x vulgaris* | Common Linden |
| *Toona ciliata* | Australian Redcedar |
| *Torreya californica* | California Torreya |
| *Torreya grandis* | Chinese Nutmeg Tree |
| *Torreya taxifolia* | Florida Torreya |
| *Trichilia hirta* | Broomstick |
| *Trichilia pallida* | Gaita |
| *Trichilia triacantha* | Bariaco |
| *Tsuga canadensis* | Eastern Hemlock |
| *Tsuga caroliniana* | Carolina Hemlock |
| *Tsuga heterophylla* | Western Hemlock |
| *Tsuga mertensiana* | Mountain Hemlock |
| *Tsuga x jeffreyi* | Jeffrey Hemlock |
| *Ulmus alata* | Winged Elm |
| *Ulmus americana* | American Elm |
| *Ulmus crassifolia* | Cedar Elm |
| *Ulmus glabra* | Wych Elm |
| *Ulmus parvifolia* | Chinese Elm |
| *Ulmus procera* | English Elm |
| *Ulmus pumila* | Siberian Elm |
| *Ulmus rubra* | Slippery Elm |
| *Ulmus serotina* | September Elm |
| *Ulmus thomasii* | Rock Elm |

| Scientific Name | Common Name |
|---|---|
| *Ulmus wilsoniana* | Wilson Elm |
| *Ulmus x notha* | Notha Elm |
| *Umbellularia californica* | California Laurel |
| *Ungnadia speciosa* | Mexican Buckeye |
| *Vaccinium arboreum* | Sparkleberry |
| *Viburnum obovatum* | Small-Leaf Arrowwood |
| *Viburnum rufidulum* | Rusty Blackhaw |
| *Viburnum sieboldii* | Siebold's Arrowwood |
| *Vitex divaricata* | Higuerillo |
| *Vitex negundo* | Negundo Chastetree |
| *Vitex parviflora* | Smallflower Chastetree |
| *Vitex trifolia* | Simpleleaf Chastetree |
| *Zanthoxylum bifoliolatum* | Maricao Pricklyash |
| *Zanthoxylum caribaeum* | Prickly Yellow |
| *Zanthoxylum coriaceum* | Biscayne Pricklyash |
| *Zanthoxylum dipetalum* | Kawa'u |
| *Zanthoxylum flavum* | West Indies Satinwood |
| *Zanthoxylum hawaiiense* | Hawai'i Pricklyash |
| *Zanthoxylum hirsutum* | Texas Hercules' Club |
| *Zanthoxylum kauaense* | Kauai Pricklyash |
| *Zanthoxylum martinicense* | White Pricklyash |
| *Zanthoxylum monophyllum* | Yellow Prickle |
| *Zanthoxylum oahuense* | Oahu Pricklyash |
| *Zanthoxylum punctatum* | Dotted Pricklyash |
| *Zanthoxylum spinifex* | Niaragato |
| *Zanthoxylum thomasianum* | St. Thomas Pricklyash |
| *Zelkova carpinifolia* | Caucacian Zelkova |
| *Zelkova schneideriana* | Schneider Zelkova |
| *Zelkova serrata* | Japanese Zelkova |
| *Zelkova sinica* | Chinese Zelkova |
| *Ziziphus mauritiana* | Indian Jujube |
| *Ziziphus obtusifolia* | Lotebush |
| *Ziziphus reticulata* | Cacao Rojo |
| *Ziziphus rignonii* | Soana |
| *Ziziphus taylorii* | Taylor's Jujube |
| *Ziziphus zizyphus* | Common Jujube |