

A Guide
to
**Estimating Irrigation Water Needs
of
Landscape Plantings
in
California**

The Landscape Coefficient Method

and

WUCOLS III

University of California Cooperative Extension
California Department of Water Resources



Cover photo: The Garden at Heather Farms, Walnut Creek, CA

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Estimating Irrigation Water Needs of Landscape Plantings in California

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WUCOLS III*

*WUCOLS is the acronym for Water Use Classifications of Landscape Species.

University of California Cooperative Extension
California Department of Water Resources

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Preface

This Guide consists of two parts, each formerly a separate publication:

Part 1—Estimating the Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method

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Part 2—WUCOLS III (Water Use Classification of Landscape Species)

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Part 1 describes a method for calculating landscape water needs, while Part 2 gives evaluations of wa-

ter needs for individual species. Used together, they provide the information needed to estimate irrigation water needs of landscape plantings.

Part 1 is a revision of *Estimating Water Requirements of Landscape Plants: The Landscape Coefficient Method*, 1991 (University of California ANR Leaflet No. 21493). Information presented in the original publication has been updated and expanded.

Part 2 represents the work of many individuals and was initiated and supported by the California Department of Water Resources. This third revision (WUCOLS III) includes many species not previously evaluated, as well as an update and reorganization of support information.

These two publications are companion documents and are intended to be used together.

First-time readers are encouraged to carefully review both parts of this Guide before making estimates of landscape water needs.



Eschscholzia californica, California poppy

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Part 1

The Landscape Coefficient Method

The Landscape Coefficient Method (LCM) describes a method of estimating irrigation needs of landscape plantings in California. It is intended as a guide for landscape professionals. It includes information that is based on research **and** on field experience (observation). Readers are advised that LCM calculations give **estimates** of water needs, not exact values, and adjustments to irrigation amounts may be needed in the field.

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Introduction

Part 1 leads you through the concepts, terms, and formulas needed to estimate irrigation water needs. You will learn:

- the key formulas needed for calculations,
- the principal concepts that serve as a basis for calculations,
- how to use the methods in the field,
- how to use estimates in irrigation planning and management,
- where to find important numbers in reference tables, and
- considerations for special landscape situations.

Chapters

After providing background information on estimating water needs for agricultural crops and turf in Chapter 1, landscape needs are addressed in Chapter 2. The **landscape coefficient**, a key factor in the formula for estimating landscape water requirements, is introduced in Chapter 2. Subsequent chapters give examples of how to calculate and use the landscape coefficient. Chapter 5 addresses irrigation efficiency and gives examples of how it is used to determine total water needs. As a way of “putting it all together,” a worksheet which summarizes the process is provided in Chapter 6. Special topics are discussed in Chapters 7 and 8. The appendices provide further information.

Audience

All landscape professionals involved in the planning, installation, and maintenance of irrigated landscapes should find this information of value. This includes architects, planners, contractors, park man-

agers, gardeners, consultants, water suppliers, auditors, and students.

Importance

Estimates of landscape water needs are important for at least three reasons:

1. **Water Conservation.** Water is a limited natural resource. Efficient water use in urban landscapes contributes substantially to the conservation of this resource. Water use efficiency can be achieved by supplying only the amount of water sufficient to meet plant needs.



Applying only the amount of water landscape plants need to remain healthy and attractive is an efficient use of a natural resource.

2. ***Economics.*** Water costs continue to increase. By applying only that amount of water needed by landscapes, and avoiding excess use, money can be saved.
3. ***Landscape Quality.*** The potential for plant injury caused by water deficits or excess can be minimized by identifying and meeting plant needs.

Getting Started

First-time readers are encouraged to review the entire Guide prior to making water needs estimates. Field examples and a practice worksheet in Chapter 6 show how to use the information presented in previous chapters. Be sure to review the appendices; they contain important numbers for calculations.

Formulas and Numbers

Formulas and numbers are needed to calculate irrigation water requirements. Fortunately, the calculations needed here are simple and straightforward. They require only a basic understanding of mathematics. Once you have reviewed the examples and made some calculations on your own, you should have no difficulty. A worksheet with all the formulas and sample calculations is included in Chapter 6.

Chapter 1— Estimating Water Requirements for Crops and Turf

In agriculture, irrigation water requirements are well established for many crops. In urban landscapes, irrigation requirements have been determined for turfgrasses, but not for most landscape species. This chapter discusses the method used to estimate water requirements for agricultural crops and turfgrasses. Chapter 2 adapts this method for application to landscape plantings.

Water requirements for agricultural crops and turfgrasses have been established in laboratory and field studies by measuring plant water loss (evapotranspiration). The total amount of water lost during a specific period of time gives an estimate of the amount needed to be replaced by irrigation. Since growers and turf managers are not equipped to measure plant water loss in the field, a formula was developed which allows water loss to be calcu-



Water requirements of many agricultural crops have been established (see Table 1).

lated. This formula (referred to as the ET_c formula) is written as follows:

$$ET_c = K_c \times ET_o$$

Crop Evapotranspiration =
Crop Coefficient x Reference Evapotranspiration

This formula states that water loss from a crop (crop evapotranspiration, ET_c) equals the amount of water that evaporates from a 4- to 7-inch tall cool season grass growing in an open-field condition (reference evapotranspiration, ET_o) multiplied by a factor determined for the crop (crop coefficient, K_c).



Water requirements of both cool and warm season turfgrasses have been established (see Table 1).

Reference evapotranspiration (ET_o) is estimated from a Class A evaporation pan or from a specialized weather station. Normal year (historical) average values for many locations in California are found in Appendix A. Current daily ET_o values are available from the California Irrigation Management Information System (CIMIS) and can be accessed via the Internet (www.cimis.water.ca.gov) or by contacting the California Department of Water Resources (see Appendix D).



A specialized weather station (CIMIS station) or a Class A evaporation pan (background) can be used to determine reference evapotranspiration (ET_o) for a site. Daily CIMIS data is available online at www.cimis.water.ca.gov.

The **crop coefficient (K_c)** is determined from field research. Water loss from a crop is measured over an extended period of time. Water loss and estimated reference evapotranspiration are used to calculate K_c as follows:

$$K_c = \frac{ET_c}{ET_o}$$

As seen in the above equation, the crop coefficient (K_c) is simply the fraction of water lost from the crop relative to reference evapotranspiration. Typically, crop water loss is less than reference evapotranspiration and, therefore, the crop coefficient is

less than 1.0. For example, if water loss from corn was measured to be 4 inches in a month, and reference evapotranspiration for the same month was 8 inches, then the crop coefficient would be 0.5. Crop coefficients have been established for many crops and for turfgrasses. A sample of values is given in Table 1.

**Table 1—
Crop Coefficients for Various Crops and
Turfgrasses**

K_c values for agricultural crops typically change during the seasons: low values are for early season (March/April) or late season (September/October) and high values for midseason (May/June/July).

K_c values		
	Low	High
Deciduous orchard*	0.50	0.97
Deciduous orchard with cover crop**	0.98	1.27
Grape	0.06	0.80
Olive	0.58	0.80
Pistachio	0.04	1.12
Citrus	0.65	year-round
Turfgrass		
Cool season species	0.8	year-round
Warm season species	0.6	year-round

Source: UC Leaflet Nos. 21427 and 21428 (see references)

* Deciduous orchard includes apples, cherries, and walnuts

** When an active cover crop is present, K_c may increase by 25 to 80%.

In summary, an estimate of crop evapotranspiration is made from reference evapotranspiration and crop coefficient values. Estimates can be made for any location where reference evapotranspiration data exists and for any crop (or turfgrass) that has a crop coefficient.

Example: A grape grower in Monterey County wants to estimate how much water the vineyard may lose in the month of July. Using the ET_c formula, two numbers are needed: reference evapotranspi-

ration (ET_o) for July in Monterey and the crop coefficient (K_c) for grapes. July ET_o for Monterey can be found in Appendix A, and the K_c for grapes is listed in Table 1 (above). With the two values, the following computation is made:

$$ET_o = 0.18 \text{ inches per day} \times 31 \text{ days} = 5.58 \text{ inches (average for July in Monterey)}$$
$$K_c = 0.8 \text{ (midseason value for grapes)}$$

$$ET_c = K_c \times ET_o$$
$$ET_c = 0.8 \times 5.58 = 4.46 \text{ inches}$$

The grower has estimated that 4.46 inches of water will be lost from the vineyard (via evapotranspiration) in the month of July. By using this ET_c estimate, the grower can calculate irrigation water requirements for the vineyard. (For an estimate of the total amount of water to apply, see Chapter 5).

The ET_c formula is the **key formula** for estimating water loss from crops and turfgrasses. A version of this formula will be used in Chapter 2 to estimate water loss for **landscape** plantings. It is recommended that you become familiar with the ET_c formula before continuing.

Chapter 2— Estimating Water Needs for Landscape Plantings

Two formulas are used to estimate water needs for landscape plantings:

- the landscape evapotranspiration formula and
- the landscape coefficient formula.

Both formulas are introduced here and then used in subsequent chapters to estimate water needs. The landscape coefficient was developed specifically for estimating **landscape** water needs and is the principal focus of Chapter 2.

The method used for estimating water needs for landscape plantings is basically the same as that used for crops and turfgrasses. The ET_c formula discussed in Chapter 1 is simply modified for application to landscapes. One key change, however, has been made: instead of using the crop coefficient (K_c), a landscape coefficient (K_L) has been substituted.

The Landscape Evapotranspiration Formula

Water needs of landscape plantings can be estimated using the landscape evapotranspiration formula:

$$ET_L = K_L \times ET_0$$

Landscape Evapotranspiration =
Landscape Coefficient \times Reference Evapotranspiration

This formula (called the ET_L formula) states that water needs of a landscape planting (landscape

evapotranspiration, ET_L) is calculated by multiplying the landscape coefficient (K_L) and the reference evapotranspiration (ET_0).

As mentioned above, the ET_L formula is basically the same as the ET_c formula from Chapter 1, except that a landscape coefficient (K_L) has been substituted for the crop coefficient (K_c). This change is necessary because of important differences which exist between crop or turfgrass systems and landscape plantings (see “Why a Landscape Coefficient”).

The following is an example of a simple calculation using the landscape coefficient in the landscape evapotranspiration (ET_L) formula.

Example: A landscape architect wants to estimate water loss for the month of August from a large groundcover area being considered for a new commercial office park in Fresno. The architect looked up the reference evapotranspiration for August in Fresno (Appendix A) and found it to be 7.1 inches. The architect assigned a landscape coefficient value of 0.2. Using this information and the landscape evapotranspiration formula (ET_L formula), the architect makes the following calculations:

$$K_L = 0.2$$

$ET_0 = 7.1$ inches for August in Fresno

$$ET_L = K_L \times ET_0$$

$$ET_L = 0.2 \times 7.1 = 1.42 \text{ inches}$$

The architect estimates that the groundcover will need 1.4 inches in the month of August. (This is not the total amount of irrigation water needed, however, as irrigation efficiency needs to be considered. This topic is addressed in Chapter 5.)

In this example, a landscape coefficient was assigned. In actual practice, K_L needs to be calculated. The formula needed to calculate K_L is the heart of the landscape coefficient method and is the subject of the next discussion.

The Landscape Coefficient Formula

As the name implies, the landscape coefficient was derived specifically to estimate water loss from landscape plantings. It has the same function as the crop coefficient, but is not determined in the same way. Landscape coefficients are calculated from three factors: species, density, and microclimate. These factors are used in the landscape coefficient formula as follows:

$$K_L = k_s \times k_d \times k_{mc}$$

Landscape Coefficient =
species factor x density factor x microclimate factor

This formula (called the K_L formula) states that the landscape coefficient is the product of a species factor multiplied by a density factor and a microclimate factor. By assigning numeric values to each factor, a value for K_L can be determined. The landscape coefficient is then used in the ET_L formula, just as the crop coefficient is used in the ET_c formula.

Why a Landscape Coefficient?

Crop coefficients are used for agricultural crops and turfgrasses, so why not for landscape plantings? There are three key reasons why landscape coefficients are needed instead.

1. Unlike a crop or turfgrass, landscape plantings are typically composed of more than one **species**. Collections of species are commonly irrigated within a single irrigation zone, and the dif-

ET Rates and Plant Water Needs

Soil water availability plays a major role in controlling the rate of water loss from plants (ET rate). Many plants will lose water at a maximum rate as long as it is available. For example, some desert species have been found to maintain ET rates equivalent to temperate zone species when water is available. When soil moisture levels decrease, however, ET rates in desert species decline rapidly.

In landscape management, it is not the objective to supply all the water needed to maintain maximum ET rates. Rather, it is the intent to supply only a sufficient amount of water to maintain health, appearance and reasonable growth. Maximum ET rates are not required to do this.

The ET_L formula calculates the amount of water needed for health, appearance and growth, not the maximum amount that can be lost via evapotranspiration.



Some desert species, such as mesquite (*Prosopis glandulosa torreyana*), have been found to maintain ET rates equivalent to temperate zone species when water is available (Levitt et al 1995). When soil moisture levels decrease, however, ET rates in desert species decline rapidly.



Unlike agricultural crops or turfgrass, landscape plantings are typically composed of many species. Collections of species are commonly irrigated within a single irrigation zone, and the different species within the irrigation zone may have widely different water needs. Using a crop coefficient for one species may not be appropriate for the other species.

ferent species within the irrigation zone may have widely different water needs. For example, a zone may be composed of hydrangea, rhododendron, alder, juniper, oleander, and olive. These species are commonly regarded as having quite different water needs and the selection of a crop coefficient appropriate for one species may not be appropriate for the other species. Crop coefficients suitable for landscapes need to include some consideration of the mixtures of species which occur in many plantings.

2. Vegetation **density** varies considerably in landscapes. Some plantings have many times more leaf area than others. For example, a landscape with trees, shrubs, and groundcover plants closely grouped into a small area will have much more leaf area than one with only widely spaced shrubs in the same-sized area. More leaf area typically means an increase in evapotranspiration (water loss) for the planting. As a result, a dense planting would be expected to lose a

greater amount of water than a sparse planting. To produce a reliable estimate of water loss, a coefficient for landscapes needs to account for such variation in vegetation density.

3. Many landscapes include a range of **microclimates**, from cool, shaded, protected areas to hot, sunny, windy areas. These variations in climate significantly affect plant water loss. Experiments in Seattle, Washington, found that a planting in a paved area can have 50%

greater water loss than a planting of the same species in a park setting. Other studies in California found that plants in shaded areas lost 50% less water than plants of the same species in an open field condition. This variation in water loss caused by microclimate needs to be accounted for in a coefficient used for landscape plantings.

Collectively, these factors make landscape plantings quite different from agricultural crops and turfgrasses, and they need to be taken into account when making water loss estimates for landscapes. The landscape coefficient was developed specifically to account for these differences.

The Landscape Coefficient Factors: Species, Density, and Microclimate

Three factors are used to determine the landscape coefficient:

- Species
- Density
- Microclimate

These factors are key elements of the landscape coefficient method and need to be understood fully before K_L and ET_L calculations are made. As well as describing each factor, the following sections give information on how to assign values to each.

Species Factor (k_s)

The species factor (k_s) is used to account for differences in species' water needs. In established landscapes, certain species are known to require relatively large amounts of water to maintain health and appearance (e.g., cherry, birch, alder, hydrangea, rhododendron), while others are known to need very little water (e.g., olive, oleander, hopseed, juniper).

This range in water needs is accounted for in the species factor.

Species factors range from 0.1 to 0.9 and are divided into four categories:

Very low	< 0.1
Low	0.1 - 0.3
Moderate	0.4 - 0.6
High	0.7 - 0.9

These species factor ranges apply regardless of vegetation type (tree, shrub, groundcover, vine, or herbaceous) and are based on water use studies for landscape species (Table 2) and applicable data from agricultural crops (Table 1).

An evaluation of plant water needs (based on field observations) has been completed for over 1,800 species. These values are presented in Part 2 (WUCOLS III). Species factor values can be found by looking up the species under consideration, and selecting an appropriate value from the category

Water: Needed for What?



In agricultural systems, water is applied to produce a crop. Whether it be tomatoes, beans, or apples, growers apply water to optimize yield and quality. In landscape systems, health, appearance, and growth are of greatest interest. Irrigation is managed to sustain plant defense systems, achieve desired canopy densities and color, generate desired growth, and produce flowers and fruit (in some species). Irrigation is not used to produce a harvestable crop in landscapes. Because of this difference between landscape and agricultural systems, landscapes typically can be managed at a level of irrigation lower than that needed for crop production.

range. The following is an example of using the WUCOLS list to select an appropriate k_s value.

Example: A landscape manager in Pasadena is attempting to determine the water requirements of a large planting of Algerian ivy. In using the ET_L formula, the manager realizes a value for the species factor (k_s) is needed in order to calculate the landscape coefficient (K_L). Using the WUCOLS list (Part 2), the manager looks up Algerian ivy (*Hedera canariensis*) and finds it classified as “moderate” for the Pasadena area, which means that the value ranges from 0.4 to 0.6. Based on previous experience irrigating this species, a low range value of 0.4 for k_s is chosen and entered in the K_L formula. (If the manager had little or no experience with the species, a middle range value of 0.5 would be selected.)



Certain species, such as tree ferns (*Dicksonia antarctica* and *Cyathea cooperi*), require relatively large amounts of water to maintain health and appearance.

Although the above example is straightforward, the assignment of species factors to plantings can be difficult. Refer to “Assigning Species Factors to Plantings” for guidance in making k_s assignments.



Some species, such as flannel bush (*Fremontodendron spp.*), need very little irrigation water to maintain health and appearance.

Table 2—
Irrigation Needs of Well-Established Landscape Species Determined from Field Research

Values are given as the minimum fraction of reference evapotranspiration needed to maintain acceptable appearance, health, and reasonable growth for the species. See Appendix D for complete references.

Plant Species	Fraction of ET _o
<i>Potentilla tabernaemontani</i>	0.5 - 0.75
<i>Sedum acre</i>	0.25
<i>Cerastium tomentosum</i>	0.25
<i>Liquidambar styraciflua</i>	0.20
<i>Quercus ilex</i>	0.20
<i>Ficus microcarpa nitida</i>	0.20
<i>Hedera helix 'Neddlepoint'</i>	0.20
<i>Drosanthemum hispidum</i>	0.20
<i>Gazania hybrida</i>	0.25-0.50
<i>Vinca major</i>	0.30
<i>Baccharis pilularis</i>	0.20

Reference: Staats and Klett; Hartin, et al; Pittenger, et al

Assigning Species Factors to Plantings

1. For single-species plantings—

When only one species occurs in the irrigation zone, use the k_s value assigned in the WUCOLS list. For example, coyote brush is assigned to the “low” category and has a k_s value from 0.1 to 0.3.

2. For multiple-species plantings—

a. When species have similar water needs: In well-planned hydrozones where species of similar water requirements are used, the selection of a k_s value is straightforward: simply select the category to which all

species are assigned and choose the appropriate value. For example, if all the species are in the moderate category, then a value from 0.4 to 0.6 is selected.

b. When species water needs are not similar: In cases where species with different water needs are planted in the same irrigation zone, then the species in the highest water-need category determine the k_s value. This assignment is required if all plants are to be retained without water stress injury. For example, if species in low, moderate, and high categories are planted in the same irrigation zone, then to avoid water stress injury to species in the high category, a k_s value from 0.7 to 0.9 would need to be selected. Unfortunately, this means that species in the moderate and low categories will receive more water than needed, which may result in injury.

Considering that plantings with mixed water needs are not water-efficient in most cases and



Plant injury may occur when species with different water needs are planted in a single irrigation zone. During a drought, irrigation was withdrawn from this planting of star jasmine (*Trachelospermum jasminoides*) and cotoneaster (*Cotoneaster sp.*). Subsequently, star jasmine was severely injured, while cotoneaster was not visibly affected.

the incidence of plant injury may increase, some management options are worth considering:

- If only a small number or percentage of plants are in the high category, then the replacement of such plants with species with lower water needs would allow for the selection of a k_s in a lower range.
- If all plants are to be retained, but a level of appearance somewhat less than optimal is acceptable, then a k_s value from a lower range may be selected. For example, in the case where plants in the low, moderate, and high categories are in the same irrigation zone, a k_s value from the moderate range may be selected with the understanding that some injury to species in the high category may result.
- In cases where all plants are to be retained and no water stress injury is acceptable, then supplemental irrigation for species in the high category should be considered. Again using the case where species in low, moderate, and high categories are planted in the same irrigation zone, a k_s value from the moderate range may be selected for the planting, provided additional water is supplied to individual plants with higher water needs. This approach requires an adjustment to the irrigation system whereby additional sprinklers or emitters are used to deliver supplemental water to species with higher water requirements.



Certain species, such as these coast live oak (*Quercus agrifolia*), can maintain health and appearance without irrigation (after they become established). Such species are grouped in the “very low” category and are assigned a species factor of less than 0.1. Many California native species are in this category.

3. *For species in the “very low” category—*

It is important to remember that certain species can maintain health and appearance without irrigation after they become established. Such species are grouped in the “very low” category and are assigned a k_s of less than 0.1. Essentially this classification means that species in this group do not need to be irrigated unless winter rainfall is abnormally low. Accordingly, if no irrigation is supplied, then there is no need to calculate a landscape coefficient and a k_s value is not assigned. In low rainfall years, some irrigation may be needed, however, and a k_s value of 0.1 should be sufficient to maintain health and appearance in these species.

Density Factor (k_d)

The density factor is used in the landscape coefficient formula to account for differences in vegetation density among landscape plantings. Vegetation density is used here to refer to the collective leaf area of all plants in the landscape. Differences

in vegetation density, or leaf area, lead to differences in water loss.

The density factor ranges in value from 0.5 to 1.3. This range is separated into three categories:

Low	0.5 - 0.9
Average	1.0
High	1.1 - 1.3

Immature and sparsely planted landscapes typically have less leaf area than mature or densely planted landscapes, and thus lose less water. These plantings are assigned a k_d value in the low category. Plantings with mixtures of vegetation types (trees, shrubs, and groundcovers) typically have greater collective leaf areas than plantings with a single vegetation type, and thus will lose more water. These plantings are assigned a density factor value in the high category. Plantings which are full but are predominantly of one vegetation type, are assigned to the average category.

Example: The grounds manager of a college campus in San Diego wants to determine the landscape coefficient for a planting consisting of gazania groundcover and a few widely-spaced escallonia shrubs. Since the plants cover the ground surface completely, the planting is considered to be full. Based on these vegetation density characteristics (i.e., full and predominantly of one vegetation type), the manager determines that this is an average density planting and assigns a k_d value of 1.0.

Although this example might infer that the selection of the density factor is fairly simple, it can be difficult to determine. Vegetation density varies considerably and assigning density factors can be confusing. Many cases exist where plant spacing

and distribution is not uniform and where a mixture of vegetation types exist.

Unfortunately, a standardized system of evaluating vegetation density for landscapes does not exist. Nonetheless, limited information from agricultural systems (principally orchards) can be applied to landscapes. The following sections describe two terms, canopy cover and vegetation tiers, which when applied to landscape plantings provide some guidance in assessing vegetation density.

Canopy Cover

Canopy cover is defined as the percentage of ground surface within a planting which is shaded by the plant canopy (or, simply, percent ground shading). A planting with full canopy cover will shade 100% of the ground surface, while a 50% canopy cover will cast a shadow on 50% of the ground area. The higher the canopy cover the greater the density of vegetation on a surface area basis.

Most mature landscape plantings have a complete canopy cover, i.e., the trees, shrubs, and groundcovers shade 100% of the ground surface. New plantings, immature plantings, and widely-spaced plantings are examples of cases where the canopy cover is less than 100%.

Orchard data gives an indication of how canopy cover affects water loss. Studies show that water loss from orchards does not increase as canopy cover increases from 70% to 100%. Below 70% cover, however, orchard water loss declines.

Applying this information to landscapes, plantings of trees with a canopy cover of 70% to 100% constitutes a complete canopy cover condition, and

would be considered as average for density factor assessments. A tree planting with less than 70% canopy cover would be in the low category.

For plantings of shrubs and groundcovers, a canopy cover of 90% to 100% constitutes complete cover. This represents an average condition for density factor assessments, while less than 90% cover would be in the low category.

Vegetation Tiers

Canopy cover gives an assessment of vegetation density on an area basis, i.e., the percent ground area covered by vegetation describes the closeness or sparseness of plants in a planting. Another dimension needs to be considered for landscapes: the vertical dimension. Landscapes are frequently composed of plants of various heights: tall trees, low groundcovers, and shrubs somewhere in between. Due to the typical growth form of each vegetation type, “tiers” of vegetation result.

When combinations of these vegetation types occur in a planting they add a height ele-

ment which will have an affect on water loss. In orchard plantings, for example, field research has shown that the addition of a cover crop increases evapotranspiration from 25% to 80% above a bare soil condition. In other words, adding a groundcover-like planting beneath orchard trees results in a substantial increase in water loss.

In landscapes, groundcovers and/or shrubs planted in the understory of trees are likely to have a similar effect on water loss as found in orchard settings. Additionally, by adding trees to a groundcover planting or shrubs to a tree-groundcover planting, an increase in water loss would be expected.

In most cases, the presence of vegetation tiers in landscapes constitutes a high density condition. For example, a planting with two or three tiers and complete canopy cover would be considered to be in the high k_d category .



Landscapes are frequently composed of plants of various heights: trees, groundcovers, and shrubs. Due to the typical growth form of each vegetation type, “tiers” of vegetation result. Plantings with more than one tier are likely to lose more water than a planting with a single tier. Here, the trees and shrubs in the groundcover represent a higher water loss condition than if the groundcover occurred alone. The density factor accounts for differences in vegetation density.

Plantings with multiple tiers which do not have a complete canopy cover, however, may not constitute a high density condition. A new planting with trees, shrubs, and groundcovers, for example, has three vegetation tiers but canopy density is low. Although three tiers are present, this planting would be classified as low density.

Assigning Density Factor Values

Canopy cover and vegetation tiers are used to assess vegetation density for density factor assignments. Since it is very difficult to account for all the variation in vegetation density which occurs in landscapes, the following assignments are made simply as a guide to making reasonable assessments.

Average Density: $k_d = 1.0$

Plantings of one vegetation type: for trees, canopy cover of 70% to 100% constitutes an average condition. For shrubs or groundcovers, a canopy cover of 90% to 100% is considered to be an average condition.



Plantings of a single species, such as this iceplant groundcover (*Drosanthemum sp.*), are considered to have average density ($k_d = 1.0$) when full (90 - 100% cover).



This mixed planting of Wheeler's pittosporum (*Pittosporum tobira* 'Wheeler's Dwarf'), Indian hawthorne (*Rhaphiolepis indica*), American sweetgum (*Liquidambar styraciflua*), and coast redwood (*Sequoia sempervirens*) is considered to be average density ($k_d = 1.0$). Trees are widely spaced through the sub-shrub/groundcover planting area.

Plantings of more than one vegetation type: for mixed vegetation types, an average density condition occurs when one vegetation type is predominant while another type occurs occasionally in the planting, and canopy cover for the predominant vegetation type is within the average density specifications outlined above. For example, a mature groundcover planting (greater than 90% canopy cover) which contains trees and/or shrubs that are widely spaced would be considered to be average density. Additionally, a grove of trees (greater than 70% canopy cover) which contains shrubs and/or groundcover plants which are widely spaced would constitute an average condition.

Low Density: $k_d = 0.5 - 0.9$

Low density plantings are characterized largely by canopy covers less than those specified for the average density condition. For instance, a tree planting with less than 70% canopy cover would be assigned a k_d value less than 1.0. The precise value assigned (between 0.5 and 0.9) would be based on the canopy cover assessment: a lower k_d value for a thinner canopy cover.

For shrubs and groundcovers, canopy cover less than 90% constitutes a density less than average and a k_d value less than 1.0 would be assigned.

Plantings with mixed vegetation types generally have greater canopy covers than those of a single type. For instance, a groundcover planting with canopy cover of 50% constitutes a low density condition and a k_d of 0.7 might be assigned. If an occasional tree occurs in the planting, then the principal effect is one of increasing canopy cover, and an upward adjustment in k_d to 0.8 or 0.9 would be warranted.

High Density: $k_d = 1.1 - 1.3$

When canopy cover is full for any vegetation type, then increases in density result from increases in the number of plants of other vegetation types. For example, by adding trees to a mature groundcover planting (groundcover canopy cover = 100%), an increase in vegetation density occurs. The addition of shrubs to the planting further increases the density. This mix of vegetation types creates a layering or tiering of vegetation which represents potential increases in water loss. Upward adjustments of k_d can be made to account for vegetation tiering. The highest density condition, where all three vegetation types occur in substantial numbers in a planting, would be assigned a k_d of 1.3. In plantings where lesser degrees of vegetation tiering occurs (e.g., a two-tiered planting), then a k_d value of 1.1 or 1.2 is appropriate.

Microclimate Factor (k_{mc})

Microclimates exist in every landscape and need to be considered in estimates of plant water loss. Features typical of urban landscapes (such as buildings and paving) influence temperature, wind speed, light intensity and humidity. These features vary considerably among landscapes, resulting in differences in microclimate. To account for these differences, a microclimate factor (k_{mc}) is used.

The microclimate factor ranges from 0.5 to 1.4, and is divided into three categories:

Low	0.5 - 0.9
Average	1.0
High	1.1 - 1.4

The microclimate factor is relatively easy to set. An “average” microclimate condition is equivalent to reference evapotranspiration conditions, i.e., an open-field setting without extraordinary winds or heat inputs atypical for the location. This microclimate is not substantially affected by nearby buildings, structures, pavements, slopes, or reflective surfaces. For example, plantings in a well-vegetated park which are not exposed to winds atypical of the area, would be assigned to the average microclimate category.



For shrubs and groundcovers, canopy cover less than 90% constitutes a density less than average ($k_d < 1.0$). This mixed planting would be assigned a low density value (0.5 - 0.9).



Plantings in a well-vegetated park, which are not exposed to winds atypical for the area, would be assigned to the average microclimate category ($k_{mc} = 1.0$). These conditions are similar to those used for reference evapotranspiration measurements (CIMIS stations).

In a “high” microclimate condition, site features increase evaporative conditions. Plantings surrounded by heat-absorbing surfaces, reflective surfaces, or exposed to particularly windy conditions would be assigned high values. For example, plantings in street medians, parking lots, next to southwest-facing walls of a building, or in “wind tunnel” areas would be assigned to the high category.



Plantings surrounded by heat-absorbing surfaces, reflective surfaces, or exposed to particularly windy conditions would be assigned a high microclimate value (1.1 - 1.4).

“Low” microclimate conditions are as common as high microclimate conditions. Plantings that are shaded for a substantial part of the day or are protected from winds typical to the area would be assigned low values. These include the north side of buildings, courtyards, under building overhangs, and on the north side of slopes.

The high and low microclimate categories have ranges of values. For example, the low category ranges from 0.5 to 0.9. The specific value assigned within a category will depend on an assessment of the degree to which the microclimate will affect plant water loss. For example, trees in a parking lot which are exposed to constant winds (atypical for the general area) will be assigned a higher value in the high category than if the location was not windy. Conversely, a courtyard planting in afternoon shade and protected from winds will be assigned a k_{mc} value in the low category, but less than that for a planting without afternoon shading.

Example: An irrigation consultant is estimating landscape water requirements for a large residential development. The buildings, parking lots,

walkways, and open areas at the site create substantially different microclimates within plantings. Starting with the open areas, he determines that conditions are quite similar to reference ET measurement sites and assigns them to the average category ($k_{mc} = 1.0$). Trees in the parking lot are exposed to heat from the asphalt pavement and reflected light from cars and are assigned to the high category. Since the parking lot is not exposed to extraordinary winds, however, he chooses a midrange value of 1.2. Shrub and groundcover plantings on the northeast side of buildings are shaded for most of the day and are assigned to the low category. Being protected from winds typical of the area as well, they are given a k_{mc} value of 0.6, in the lower end of the range.

Assigning Microclimate Factor Values

Average Microclimate: $k_{mc} = 1.0$

Site conditions equivalent to those used for reference ET measurements represent an average microclimate. Reference ET is measured in an open-field setting which is not exposed to extraordinary winds or heat inputs from nearby buildings, structures, or vehicles. Plantings in similar conditions would be considered to be in an average microclimate. Plantings in park settings are most typically assigned to this category. Although some hardscape may exist, vegetation dominates the landscape. Large plantings of groundcover, groves of trees, and mixtures of shrubs, turf, and trees in relatively open ar-



Plantings that are shaded for a substantial part of the day, or are protected from winds typical to the area, are assigned low microclimate values (0.5 - 0.9). This planting on the northeast side of the office building is shaded for several hours each day.

eas represent examples of an average microclimate condition. Small parks with adjacent buildings, extensive hardscapes, or exposed to extraordinary winds would not be included in the average category.

Low Microclimate: $k_{mc} = 0.5 - 0.9$

Sites which are shaded or protected from winds typical to the area are considered to be in the low microclimate category (Costello et al. 1996). Features of the site modify the microclimate such that evaporative conditions are less than those found in the average microclimate. Plantings located on the north side or northeast side of buildings, shaded by overhead structures, or within courtyard settings are typically assigned a k_{mc} value in the low range. Plantings protected from winds by buildings, structures, or other vegetation also would be assigned to the low category. The specific value assigned for the microclimate factor will depend on the specific site conditions. For example, a planting in a courtyard which is shaded most of the day and protected from winds may be assigned a value of 0.6, while a simi-

lar planting which is located on the northeast side of a building may be assigned a value of 0.8.

High Microclimate: $k_{mc} = 1.1 - 1.4$

Sites which are exposed to direct winds atypical for the area, heat inputs from nearby sources, and/or reflected light would be considered to be in the high microclimate category. These features of the site increase evaporative conditions above those found in an average microclimate condition. Plantings located in medians, parking lots, or adjacent to south or southwest facing walls which are exposed to higher canopy temperatures than those found in a well-vegetated setting would be in the high category. Plantings in wind tunnel locations and those receiving reflected light from nearby windows, cars, or other reflective surfaces are also in high microclimate conditions. The specific value assigned will depend on the specific conditions. For example, a shrub planting located next to a southwest facing wall may be assigned a k_{mc} value of 1.2, while a similar planting next to a southwest wall which is composed of reflective glass and is exposed to extraordinary winds may be assigned a value of 1.4.

**Table 3—
Summary Table
Values for Landscape Coefficient Factors**

	High	Moderate	Low	Very Low
Species Factor* (k_s)	0.7-0.9	0.4-0.6	0.1-0.3	<0.1
Density (k_d)	1.1-1.3	1.0	0.5-0.9	
Microclimate (k_{mc})	1.1-1.4	1.0	0.5-0.9	

* Species factor values may change during the year, particularly for deciduous species. See Table 1 for seasonal changes in crop coefficients for agricultural crops.

Chapter 3— Using the Landscape Coefficient Formula

The landscape coefficient formula was introduced in Chapter 2, and the three factors which determine its value were discussed. Now these factors are used to calculate values for the landscape coefficient. A series of field cases show the range of values that can be determined for K_L . In Chapter 4, calculations using the landscape coefficient in the ETL formula are presented.

Using the information presented in Chapter 2, values for the landscape coefficient can be calculated. The following cases show how the landscape coefficient is used for a variety of species, density, and microclimate conditions. Species factor values will be taken from the WUCOLS list, while density and microclimate values are based on the planting and site conditions described. For quick reference, the following table gives values for each factor.

Landscape Coefficient Factors

	<u>Species</u>	<u>Density</u>	<u>Microclimate</u>
High	0.7 - 0.9	1.1 - 1.3	1.1 - 1.4
Mod./Ave.	0.4 - 0.6	1.0	1.0
Low	0.1 - 0.3	0.5 - 0.9	0.5 - 0.9
Very Low	< 0.1		

Case 1—A large, mature planting of star jasmine in a park in San Jose. It is in full sun and has little wind exposure.

$$\begin{aligned}k_s &= 0.5 \\k_d &= 1.0 \\k_{mc} &= 1.0 \\K_L &= 0.5 \times 1.0 \times 1.0 = 0.5\end{aligned}$$

Analysis: Star jasmine is classified as moderate in the WUCOLS list (moderate range = 0.4 to 0.6) and a midrange k_s value of 0.5 is assigned. Since the planting is mature it will be considered full (i.e., canopy cover = 100%), and being of one vegetation type, it is classified as an average density and k_d is 1.0. The microclimate is similar to reference evapotranspiration conditions (full sun, open area, no extraordinary winds) and, therefore, is classified as average and k_{mc} is 1.0.

Case 2—A mixed planting of dwarf coyote brush, Pfitzer juniper, oleander, purple hopseed, and olive in an office park in Los Angeles. The planting is full, exposed to sun all day, but not to extraordinary winds.

$$\begin{aligned}k_s &= 0.2 \\k_d &= 1.2 \\k_{mc} &= 1.0 \\K_L &= 0.2 \times 1.2 \times 1.0 = 0.24\end{aligned}$$

Analysis: All species are classified as low in the WUCOLS list and are assigned a midrange value of 0.2. Canopy cover is 100%, and since all three vegetation types occur, this is classified as a high density planting and a k_d value of 1.2 is assigned. The microclimate is average and a value of 1.0 is assigned.

Case 3—A mature planting of rockrose, star jasmine, and dichondra in an amusement park in Sacramento. The planting is in full sun and atypical winds are infrequent.

$$\begin{aligned}k_s &= 0.8 \\k_d &= 1.0 \\k_{mc} &= 1.0 \\K_L &= 0.8 \times 1.0 \times 1.0 = 0.8\end{aligned}$$

Analysis: Species in this planting are in three different WUCOLS categories: low (rockrose), mod-

erate (star jasmine), and high (dichondra). To maintain the dichondra in good condition, a k_s value of 0.8 is needed. This means, however, that both the rockrose and star jasmine will receive more water than they need. Obviously this is not a water-efficient planting. Both the density and microclimate conditions are average and were assigned values of 1.0.

Case 4—A widely-spaced planting of camellia on a university campus in San Francisco. Canopy cover of the planting is 40% to 50%. A 4-inch mulch covers the ground throughout the planting. It is in full sun and no extraordinary winds occur.

$$\begin{aligned} k_s &= 0.5 \\ k_d &= 0.5 \\ k_{mc} &= 1.0 \\ K_L &= 0.5 \times 0.5 \times 1.0 = 0.25 \end{aligned}$$

Analysis: Camellia is classified as moderate in the WUCOLS list and is assigned a midrange value of 0.5. This is a low density planting of a single species and a k_a value of 0.5 is assigned. The microclimate is average and given a value of 1.0.

Case 5—A planting of leatherleaf mahonia and Burford holly in an office park in Pasadena. The planting is full, but shaded in the afternoon by an adjacent building. The building also blocks afternoon winds typical for the area.

$$\begin{aligned} k_s &= 0.5 \\ k_d &= 1.0 \\ k_{mc} &= 0.6 \\ K_L &= 0.5 \times 1.0 \times 0.6 = 0.30 \end{aligned}$$

Analysis: Both species are classified as moderate in the WUCOLS list and are assigned a midrange value of 0.5. The canopy cover is full and since only one vegetation type occurs, it is classified as average density. Since the building shades the plant-

ing and protects it from wind, the microclimate is low and a k_{mc} value of 0.6 is assigned.

Case 6—A mixed planting of sweetgum, *Rhaphiolepis* sp., Wheeler's dwarf pittosporum, Raywood ash, and English ivy at a zoo in San Diego. The planting is mature (canopy cover is 100%), in full sun, and exposed to continual strong winds not typical for the area (i.e., windier than the reference ET location).

$$\begin{aligned} k_s &= 0.5 \\ k_d &= 1.2 \\ k_{mc} &= 1.3 \\ K_L &= 0.5 \times 1.2 \times 1.3 = 0.78 \end{aligned}$$

Analysis: All species in this planting are classified as moderate in the WUCOLS list and are assigned a midrange value of 0.5. Since the canopy cover is 100% and all three vegetation types occur, this is a high density planting and a k_d of 1.2 is assigned. Since the site is atypically windy for the area, the microclimate is classified as high and a k_{mc} of 1.3 is assigned.

Case 7—A new planting of rockrose, manzanita, pink melaleuca, and bushy yate along a freeway in Monterey County. All plants are 5-gallon container stock, planted in full sun, and are not exposed to extraordinary winds. Canopy cover is 20 to 30%. A 4-inch layer of mulch covers the ground throughout the planting.

$$\begin{aligned} k_s &= 0.2 \\ k_d &= 0.5 \\ k_{mc} &= 1.0 \\ K_L &= 0.2 \times 0.5 \times 1.0 = 0.1 \end{aligned}$$

Analysis: All species in this planting are classified as low in the WUCOLS list and a midrange value of 0.2 is given. Since this is a new planting and canopy cover is not full, it is placed in a low density category and assigned a k_d value of 0.5. The micro-

climate is average and assigned a value of 1.0. (See Chapter 8 for information on irrigating new plantings.)

These field examples should provide an understanding of how values for each of the landscape coefficient factors are assigned and used. In addition, an appreciation for the diversity of species, differences in vegetation density, and variation in microclimates which exist in landscapes should be realized. In many cases, there will be a different landscape coefficient for each irrigation zone.

For discussions of the following special planting cases, refer to Chapter 8:

- New Plantings
- Trees in Turf
- Individual Specimens
- Vines
- Herbaceous Plants

Landscapes vary considerably in species composition, vegetation density and microclimates.



Chapter 4—

Using the Landscape Coefficient to Estimate Landscape Evapotranspiration

The landscape coefficient and reference evapotranspiration now are used to estimate landscape evapotranspiration for the plantings described in Chapter 3. This chapter completes the process used to produce estimates of landscape water loss. Subsequent chapters discuss how to use estimates of ET_L to calculate total irrigation water needs and how to apply this information in landscape management programs.

In Chapter 3, seven landscape planting cases were described and used for landscape coefficient calculations. These cases will be used here to calculate landscape evapotranspiration with the ET_L formula. The ET_L formula was described in Chapter 2 and is presented here for quick reference:

$$ET_L = K_L \times ET_o$$

Landscape Evapotranspiration =
Landscape Coefficient \times Reference Evapotranspiration

For each case, reference evapotranspiration (ET_o) values will be taken from Appendix A. All are normal year average values for the month of July for the respective locations.

Case 1—	$K_L = 0.5$ ET_o for San Jose = 7.44 inches
	$ET_L = 0.5 \times 7.44 = 3.72$ inches
Case 2—	$K_L = 0.24$ ET_o for Los Angeles = 6.5 inches
	$ET_L = 0.24 \times 6.5 = 1.56$ inches
Case 3—	$K_L = 0.8$ ET_o for Sacramento = 8.6 inches
	$ET_L = 0.8 \times 8.6 = 6.88$ inches
Case 4—	$K_L = 0.25$ ET_o for San Francisco = 4.9 inches
	$ET_L = 0.25 \times 4.9 = 1.22$ inches
Case 5—	$K_L = 0.30$ ET_o for Pasadena = 7.4 inches
	$ET_L = 0.30 \times 7.4 = 2.22$ inches
Case 6—	$K_L = 0.78$ ET_o for San Diego = 5.8 inches
	$ET_L = 0.78 \times 5.8 = 4.59$ inches
Case 7—	$K_L = 0.1$ ET_o for Monterey = 5.5 inches
	$ET_L = 0.1 \times 5.5 = 0.55$ inches

These calculations show that landscape irrigation water needs vary substantially. Estimates range from 0.55 inches to 6.88 inches—more than a 12-fold difference.

The two factors used to determine ET_L , the landscape coefficient and reference evapotranspiration, are solely responsible for producing these differences in water loss estimates. For plantings in the same location (i.e., where the same ET_o values will be used), the differences will arise solely from the landscape coefficient. To produce useful estimates of water loss, therefore, it is important to carefully determine the value of K_L .

Even though the ET_L formula has given an estimate of water loss from a landscape, the total amount of irrigation water needed has not been determined. The total amount is calculated from two factors: ET_L and irrigation efficiency. The following chapter discusses irrigation efficiency and shows how it is used to determine the total amount of water to apply.

Chapter 5— Irrigation Efficiency and Calculating the Total Amount of Water to Apply

The first four chapters have described the process for estimating plant water needs. To calculate the total amount of water to apply, irrigation efficiency needs to be addressed. This chapter introduces the formula for calculating total water needs and discusses the irrigation efficiency factor. How this information applies to irrigation management is discussed in Chapter 6.

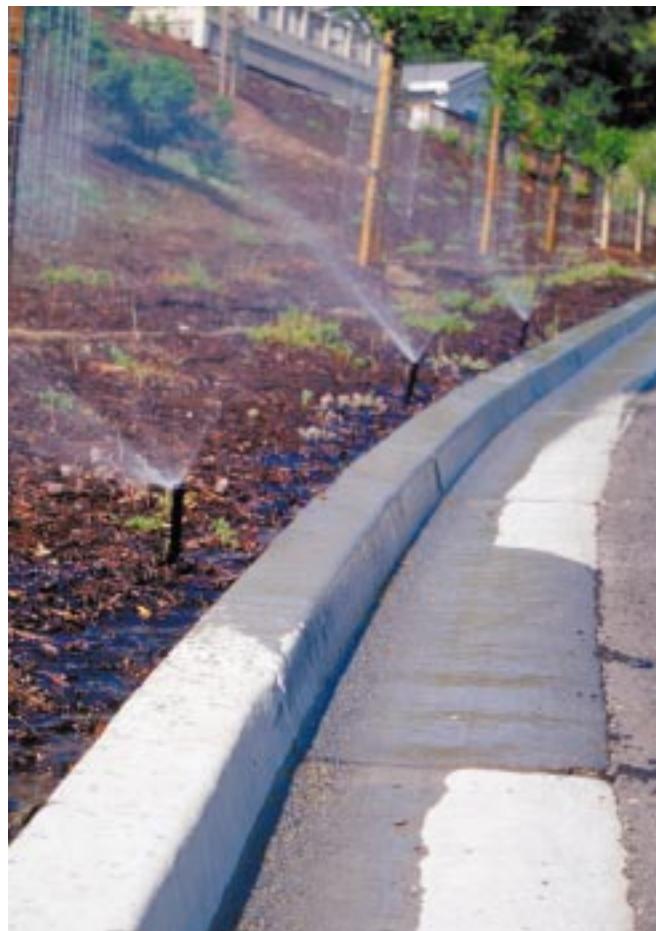
The E_TL formula calculates the amount of irrigation water needed to meet the needs of plants. This is not the total amount of water needed to apply, however. Since every irrigation system is inefficient to some degree, the landscape will require water in excess of that estimated by E_TL. In this chapter, irrigation efficiency will be discussed and then used to calculate the total amount of water to apply.

Irrigation Efficiency

Efficiency can be defined as the beneficial use of applied water (by plants). The following formula is used to calculate irrigation efficiency:

$$\text{Irrigation Efficiency (\%)} = \frac{\text{Beneficially Used Water}}{\text{Total Water Applied}} \times 100$$

An efficiency of 100% would mean that all applied water was used by the planting. This rarely occurs. Consequently, irrigation efficiency is less than 100%



Not all water applied to landscapes is used by plants. Some is lost due to runoff, windspray, or deep percolation. Irrigation efficiency losses need to be included in water budget calculations.

in virtually all cases and additional water should be applied to account for efficiency losses.

A determination of irrigation efficiency (IE) for **landscape plantings** is challenging. As yet, a standard method has not been established. The approach used for turf irrigation, distribution uniformity (DU), is not appropriate for most landscape plantings.

Three approaches are considered here: calculation, estimation, and goal setting. Each method has **significant** limitations, and are presented here only as possible options to consider.

Calculation

To calculate irrigation efficiency, values for ET_L and TWA are needed. In landscapes, beneficially used water is the equivalent of ET_L (the amount of water estimated to be needed by a planting). This is calculated as described in Chapter 4. The total water applied can be determined by operating an irrigation system for a scheduled cycle and measuring the total water used (usually read from a water meter). The following example shows a typical calculation:

ET_L = 4 inches (calculated using the ET_L formula)

TWA = 5 inches (measured)

$$IE = \frac{ET_L}{TWA} \times 100 = 80\%$$

In the above example, the system has an 80% efficiency, or 8 out of every 10 gallons of applied water is used beneficially by the planting. Two gallons are lost, perhaps to runoff, evaporation, leakage, or wind spray. To supply 8 gallons of water means that a total of 10 gallons needs to be applied.

This approach has limited application for two reasons:

1. it requires a water meter to measure the amount of water applied, and
2. it may include efficiency losses associated with poor scheduling.

It assumes that applied water is close to optimum for the landscape plants and the system operating capabilities. It may be, however, that inefficiencies are linked to the operating schedule. For example, the irrigation duration may be too long for the planting.

Estimation

In cases where the total water applied cannot be measured, then irrigation efficiency may be estimated. Estimates are based on an assessment of the design and performance of the irrigation system. A system which is well designed and operated can have an efficiency range of 80% to 90%. Poorly designed and operated systems may have efficiencies of less than 50%. A representative range of efficiencies for landscape systems is proposed here to be from 65% to 90%.

Estimating is a subjective process where two assessments of the same system can vary widely. The utility of an estimate will be related to the knowledge and experience of the estimator.

Goal Setting

Irrigation efficiency values may also be based on a design and/or management goal. For instance, a new landscape may be designed to achieve an irrigation efficiency of 90%. Or, an existing landscape may be managed to achieve an irrigation efficiency of 85%. Both values represent efficiency goals. These efficiency values are then used to estimate the total water needed to achieve the goal. This approach is useful for water budgeting purposes, but does not provide a useful estimate of actual system performance.

All three of these methods are highly approximate. Until a standard method of measuring landscape irrigation efficiency is determined, however, they provide some guidance.

Total Water Applied

Regardless of the method used to determine irrigation efficiency, the total amount of water needed for a landscape planting is calculated using the following formula:

$$TWA = \frac{ET_L}{IE}$$

$$\text{Total Water Applied} = \frac{\text{Landscape Evapotranspiration}}{\text{Irrigation Efficiency}}$$

The following are examples of calculations using irrigation efficiency and landscape evapotranspiration to determine the total water to apply. The first three cases presented in Chapters 3 and 4 will be used. An irrigation efficiency value of 70% is assigned for each case.

Case 1— $ET_L = 3.72 \text{ inches}$
 $IE = 70\% \text{ or } 0.7$

$$TWA = \frac{3.72}{0.7} = 5.31 \text{ inches}$$

(see Case 1 in Chapter 4)

Case 2— $ET_L = 1.56 \text{ inches}$
 $IE = 70\% \text{ or } 0.7$

$$TWA = \frac{1.56}{0.7} = 2.22 \text{ inches}$$

Case 3— $ET_L = 6.88 \text{ inches}$
 $IE = 70\% \text{ or } 0.7$

$$TWA = \frac{6.88}{0.7} = 9.8 \text{ inches}$$

It is clear from these calculations that irrigation efficiency plays a very large role in determining the total amount of water to apply. Water added to account for efficiency losses ranges from 0.67 inches to 2.88 inches.

If the efficiency of the system is greater or less than 70%, the total water applied will vary accordingly.

The magnitude of this effect can be seen in the following calculations where IE values from 30% to 90% are used. The ET_L value from the first sample calculation (3.72 inches) is used in each case.

$$@ 30\% IE, \quad TWA = \frac{3.72}{0.3} = 12.4 \text{ inches}$$

$$@ 60\% IE, \quad TWA = \frac{3.72}{0.6} = 6.2 \text{ inches}$$

$$@ 90\% IE, \quad TWA = \frac{3.72}{0.9} = 4.1 \text{ inches}$$

These calculations indicate that for the same landscape plants, at the same location, and under identical environmental conditions, the total amount of water applied varies from 4.1 inches to 12.4 inches, due solely to irrigation efficiency differences. Clearly, the IE factor needs to be addressed very carefully when planning and managing landscapes.

Chapter 6—

Putting It All Together: A Worksheet for Calculations

Chapters 1 through 5 have introduced a number of formulas and numbers that are used to estimate landscape water needs. This chapter puts all the equations together to show the calculation process. Subsequent chapters discuss considerations for applying estimates and special planting situations.

Three steps are needed to estimate irrigation water needs of a planting:

1. calculate the landscape coefficient,
2. calculate landscape evapotranspiration, and
3. calculate the total water applied.

These steps are combined in a worksheet format on the following page. After the worksheet, an example is given to show how it is used, followed by a discussion of converting units from inches of water to gallons.

Converting Inches to Gallons

Landscape evapotranspiration (ET_L) and total water applied (TWA) values have been given in units of inches. Frequently, it is of interest to know how many gallons of water are needed. Inches of water can be converted to gallons by using: 1) a conversion factor, and 2) a measure of the area to be irrigated.

- 1) The conversion factor, 0.62, can be used to convert inches-of-water-per-square-foot to gallons. A volume that is one-foot long, one-foot wide, and one-inch deep contains 0.62 gallons of water. This means that there are 0.62 gallons of water in a square-foot-inch. (There are 325,851 gallons in an acre-foot of water.)
- 2) The area to be irrigated needs to be measured. To use the conversion factor, units of square-feet are required.

With the area and the conversion factor, gallons of water can be calculated using the following formula:

$$\text{Estimated water in gallons} = \text{estimated water in inches} \times \text{area (square feet)} \times 0.62$$

Example: It was determined that 2.11 inches of water was needed for a groundcover planting. Let's say the planting covers 5,000 square feet.

To convert inches to gallons:

$$\text{Gallons} = 2.11 \text{ inches} \times 5,000 \text{ sq. ft.} \times 0.62 = 6,541$$

It is estimated that 6,541 gallons of water are needed to maintain the 5,000 square feet of groundcover.

Worksheet for Estimating Landscape Water Needs

Step 1: Calculate the Landscape Coefficient (K_L)

K_L formula: $K_L = k_s \times k_d \times k_{mc}$ k_s = species factor
 k_d = density factor
 k_{mc} = microclimate factor

k_s = _____ (range = 0.1-0.9) (see WUCOLS list for values)

k_d = _____ (range = 0.5-1.3) (see Chapter 2)

k_{mc} = _____ (range = 0.5-1.4) (see Chapter 2)

$$K_L = \frac{_____}{(k_s)} \times \frac{_____}{(k_d)} \times \frac{_____}{(k_{mc})} = _____.$$

Step 2. Calculate Landscape Evapotranspiration (ET_L)

ET_L formula: $ET_L = K_L \times ET_o$ K_L = landscape coefficient
 ET_o = reference evapotranspiration

K_L = _____ (calculated in Step 1)

ET_o = _____ inches (listed in Appendix A for month and location)

$$ET_L = \frac{_____}{(K_L)} \times \frac{_____}{(ET_o)} = _____ \text{ inches.}$$

Step 3. Calculate the Total Water to Apply (TWA)

TWA formula: $TWA = \frac{ET_L}{IE}$ ET_L = landscape evapotranspiration
 IE IE = irrigation efficiency

ET_L = _____ (calculated in Step 2)

IE = _____ (measured, estimated, or set) (see Chapter 5)

$$TWA = \frac{ET_L}{IE} = _____ \text{ inches}$$

Worksheet Example

A landscape manager in San Bernardino is interested in estimating water requirements for a large planting of African daisy (*Osteospermum fruticosum*) for the month of July. The planting is in an open area and is not exposed to extraordinary winds for the area. The manager estimates that irrigation efficiency is 70% and, using the work-sheet, follows the three steps (see below).

Step 1. $K_L = k_s \times k_d \times k_{mc}$

$k_s = 0.2$ (from WUCOLS list)

$k_d = 1.0$ (complete canopy cover and one vegetation type)

$k_{mc} = 1.0$ (open area, no extraordinary winds)

$$K_L = 0.2 \times 1.0 \times 1.0 = 0.2$$

Step 2. $ET_L = K_L \times ET_o$

$K_L = 0.2$ (from Step 1)

$ET_o = 7.4$ inches (for July in San Bernardino) (see Appendix A)

$$ET_L = 0.2 \times 7.4 = 1.48 \text{ inches}$$

Step 3. $TWA = \frac{ET_L}{IE}$

$ET_L = 1.48$ inches (from Step 2)

$IE = 0.7$ (70% irrigation efficiency estimated by landscape manager)

$$TWA = \frac{1.48 \text{ inches}}{0.7} = 2.11 \text{ inches}$$

(To convert 2.11 inches of water to gallons, see "Inches to Gallons".)

The landscape manager has estimated that the groundcover will need 2.11 inches of water for the month of July. Using this estimate, the manager can develop an irrigation schedule. Other factors may need to be considered before deciding if this estimate is appropriate for the planting. Chapter 7 addresses these considerations.

Chapter 7—

Using Water Estimates in Landscape Planning and Management

Before water needs estimates are used for landscape planning and management purposes, a few points need to be considered. In Chapter 7, five special topics which are relevant to using estimates are addressed. The following chapter discusses some special planting situations.

The previous chapters have described how to estimate irrigation water needs for landscape plantings. These estimates can be used in landscape planning and management to:

- develop water budgets for planned or existing landscapes,
- assist in the design of landscapes to meet irrigation goals,
- assist in designing and managing effective hydrozones,
- help in the determination of irrigation system efficiency (i.e., along with measurements of total water use), and
- serve as an auditing tool by providing assessments of the amount of water landscapes need compared to that actually being used.

When using landscape water estimates for these purposes, however, a few considerations are impor-

tant to note. These are discussed briefly under the following special topics headings.

Field Adjustments

The landscape coefficient method provides **estimates** of water needs, not exact values. Consequently, adjustments likely are needed in the field. If plants are showing signs of water stress, then an upward adjustment will be needed. Conversely, when it appears that too much water is being applied, then a downward adjustment is warranted. It is strongly recommended that when irrigation water estimates are implemented in the field that they be followed by careful monitoring.

Irrigation Schedules

An estimate of water needs is the first step in developing an irrigation schedule. Irrigation frequency, duration, and cycles also need to be determined to create a schedule. These are determined from the soil infiltration rate, rooting depth, sprinkler application rate, allowable depletion amounts, and soil water holding capacity. Each of these factors needs to be evaluated to determine how frequently to irrigate, how long to irrigate at any one time, and how many irrigation cycles are needed.

Soil Evaporation

Water loss may occur from the soil as well as from plants. This is most common when ground shading is less than 100% and a mulch is not present. The rate of evaporative water loss from soils depends on soil wetness, texture, structure, and density. When soil evaporation contributes to landscape water losses, water estimates should be increased by 10% to 20%. With sufficient mulching, however, bare soil surfaces will not be a source of water loss.

Salts and Leaching Fractions

When soil salt concentrations are sufficiently high to cause plant injury, the application of water in excess of that needed to meet plant needs is necessary. This process is called “leaching” and the percentage of applied water used to move salts below the root zone is called the “leaching fraction”. For example, if 100 gallons of water is applied, and 25 gallons percolated below the root zone to remove salts, this would be a 25% leaching fraction. The leaching fraction needed for a landscape will depend on soil salt concentrations, tolerable levels, depth of the root zone, and soil physical properties. To determine an appropriate leaching fraction, it is recommended that managers consult with a qualified soil laboratory. The leaching fraction will add water to that needed for plants (ET_L), and the total water applied (TWA) will increase.

Reclaimed Water

The use of reclaimed water in landscape irrigation is becoming more common. Reclaimed water varies in quality, however, depending on the source and treatment process. Some reclaimed water is of high quality with little potential to injure plants. In other cases, reclaimed water may be of low quality, containing injurious levels of salts or specific elements. When irrigating with reclaimed water, planners and managers will need to assess and monitor water quality. Some upward adjustments in water estimates may be needed to reduce plant injury potential with low quality water. Consult a qualified laboratory when making such adjustments.



When irrigating with reclaimed water, planners and managers will need to monitor water quality. When irrigating with low quality reclaimed water, upward adjustments in water budgets may be needed to reduce the potential of plant injury.

Chapter 8— Special Planting Situations

Although the application of the landscape coefficient method has been described for many landscape cases, there are some special planting situations that require further consideration. These cases are described in Chapter 8. This concludes the process of making water needs estimates for landscape plantings. Remember, the appendices contain important reference information to use in calculations.

New plantings, trees in turf, individual plants, vines, and herbaceous plants represent special cases which require further consideration in making water needs estimates. All are common elements of landscapes.

New Plantings

In terms of irrigation water needs, the key differences between new and mature plantings are in density factor assignments and irrigation efficiency. Typically, canopy cover is substantially less in a new planting and the lowest k_d value, 0.5, is appropriate. Irrigation efficiency is also typically low for new plantings.

A landscape coefficient (K_L) calculation for a new planting was made in “Using the Landscape Coefficient Formula” (Chapter 3, example 7). In the example, a k_d value of 0.5 was used which produced a K_L of 0.1 ($k_s = 0.2$, $k_{mc} = 1.0$).

Based on experience, it may be thought that irrigating a new planting at one tenth of reference evapotranspiration is insufficient. Generally, landscape managers believe that new plantings need even more water than mature plantings. When irrigation efficiency (IE) is considered, however, the amount of water needed increases substantially. Indeed, it is



New landscape plantings require special consideration. The actual amount of water needed to maintain health and appearance in new plants is lower than that needed for established plantings (mainly because the density factor is low). However, irrigation efficiency losses are usually very high in new plantings, and the total amount of water needed may be equivalent to that of established plantings.

because of very low efficiencies when irrigating new plantings that the total amount of water is much greater than that needed solely for the plants.

A sample calculation helps to show the role of irrigation efficiency in new planting irrigation. Using example 7, $ET_L = 0.1$ for a new planting in Monterey

County in July. The total amount of water needed is calculated using the TWA formula:

$$TWA = \frac{ET_L}{IE}$$

Selecting an irrigation efficiency of 10%,

$$TWA = \frac{0.1}{0.1} = 1.0 \text{ inch}$$

Ten times more water needs to be applied than that actually needed for the plants. This is based on a 10% irrigation efficiency for a new planting which is sprinkler irrigated. An IE of 10% is reasonable because most of the root mass of new plantings is confined to the rootball, with available water consisting of only that held in the rootball and, in some cases, a small volume of adjacent soil. Sprinklers deliver water to the entire planted area, not just the rootballs, so much of the water falls outside the usable area.

For instance, in a planting area of 100 sq. ft., only 10 sq. ft. may be occupied by rootball. Thus, if water is distributed uniformly, only 10% of the water applied falls in the root zone, which produces a 10% irrigation efficiency.

Irrigation efficiencies for some new plantings may be even less than 10%. If a planting is sparse and root zone occupies less than 10% of the irrigated area, and/or some of the water that lands on the rootball is lost to evaporation, percolation, or runoff, then IE may be less than 10%.

As roots develop into the adjacent soil, however, irrigation efficiency increases rapidly. For instance, if after one year, roots have developed into the adjacent soil to the point that half the planting area

has some root mass, then water landing on half the area potentially may be absorbed by plants. In this case, irrigation efficiency has increased 5-fold to 50% (assuming no loss from runoff, evaporation, etc.).

It should be recognized that sprinkler irrigation of new plantings (i.e., of container grown plants) is not efficient. Other methods should be considered for water conservation purposes. Drip systems deliver water directly to rootballs and, therefore, have higher efficiency. Potentially, hand watering is also more water efficient than sprinkler irrigation, provided it is done carefully.



The water needs of most tree species planted in turf are generally met by the relatively high water needs of turf. Trees with relatively high water needs, such as these white alder (*Alnus rhombifolia*), should be used in turf areas.

As root development increases into the adjacent soil, sprinkler irrigation efficiency increases, while drip irrigation efficiency may actually decrease if emitters are not moved or supplemented to supply the larger root zone. Dual systems of both drip emitters and sprinklers may have the greatest potential for maximizing efficiency for new and developing plantings: the drip system being used for the new planting and the sprinklers employed once the root system has developed.

Trees in Turf

The water needs of most tree species planted in turf are generally met by the relatively high water needs of turf. Turf crop coefficients range from 0.6 (warm season species) to 0.8 (cool season species). This range is sufficient to satisfy the needs of all trees in the moderate, low, and very low WUCOLS categories. Trees in the high category may need supplemental water, particularly if they are planted in warm season turf. Trees in cool season turf are not likely to need supplemental water.

Aside from meeting total water needs, some other factors need to be considered regarding trees in turf:

1. **Species Selection.** Not all tree species can be expected to perform well in turf. Species in the low and very low WUCOLS categories may be injured or killed by turf irrigation. Many species are adapted to dry summer conditions (e.g., oak species) and frequent irrigations associated with turf may result in root injury, typically from disease or poor aeration. Species selection is very important. When specifying trees in turf, species should be limited largely to those classified as “high” on the WUCOLS list. Species from the “moderate” category may be used in

some cases, but there will be a greater potential for injury.

2. **New Turf Around Established Trees.** When new turf (and associated irrigation) is installed around established trees, precautions are needed to avoid injury to the trees. This is particularly the case for trees that were not formerly irrigated. By supplying water to the root zone of established trees the potential for injury from disease or poor aeration increases substantially. Certain species (e.g., oaks) are more sensitive to such changes than other species. The root crown area is particularly sensitive and needs



In times when the water supply for turf becomes restricted (e.g., drought years), the water needs of trees in turf may not be met. These white birch (*Betula pendula*) died when water was withdrawn from the turf during a drought year. Notice that the juniper (*Juniperus sp.*) were not injured.

special consideration. To help ensure the survival of both the turf and trees in this situation, it is recommended that a certified arborist be consulted.

3. **Drought Years.** In times when the water supply for turf becomes restricted (e.g., drought years), the water needs of trees in turf may not be met. During previous droughts in California, many trees in turf areas were severely injured or killed when water was withheld from turf. Frequently, the turf recovers when irrigation resumes, but the trees do not. It is very important to provide water directly to trees during such times.
4. **Newly-Planted Trees.** Water supplied to meet turf needs is often not sufficient for newly planted trees in turf. Although turf irrigation is likely sufficient for most species once established, newly planted trees have special requirements. In most cases after planting, the roots of new trees are confined to the rootball, or a relatively small volume of soil. Much of the water supplied in turf irrigation (typically via sprinklers) does not rewet the rootball sufficiently. It is only the water that lands on the rootball that can be absorbed, and in most cases this is not adequate to meet the needs of the tree. As a result, many trees are very slow to develop in turf, and some are injured or killed. Supplemental water (delivered manually or by drip systems) are strongly recommended for trees in turf.

In addition to special water needs, newly planted trees in turf also may be inhibited biologically by the turf. This is an effect known as “allelopathy,” where one plant inhibits the development of another by the release of phytotoxic ma-

terials from its roots. Turf species are recognized as having allelopathic effects on young trees and, therefore, an area (2 ft. radius) around newly planted trees should be kept turf-free. Ideally mulch is applied to the soil surface in the turf-free zone to reduce evaporation and minimize the potential for mower or trimmer injury.

5. **Shallow Rooting and Windthrow.** Turf irrigation typically supplies water to the surface 3 to 6 inches of soil, the active root zone for most turf species. Consequently, turf irrigations are relatively shallow and frequent (i.e., when compared to tree irrigation depths of 1 to 3 ft.). As a result, tree roots in turf areas tend to develop close to the soil surface. There has been some concern regarding the potential for reduced anchorage associated with shallow root systems of trees in turf. It is thought that large trees may have a higher potential for windthrow. Although this occurrence has been observed, there is no documentation to show that the potential for tree windthrow is higher in turf than elsewhere. Nevertheless, it is generally held that deep irrigations for trees in turf are beneficial. They not only increase the potential for root development deeper in the soil profile, but they also increase the size of the soil volume from which roots can extract water.

Individual Plants

To this point, the landscape coefficient method has been used to estimate water needs of plantings (i.e., groups of plants). It also can be used to estimate water needs of individual plants. The three factors (species, density, and microclimate) are used to determine a landscape coefficient as before. A few

considerations apply for individual plants, however, and they are discussed for shrubs and trees separately.

Shrubs

- k_s : Species factor values are found in the WUCOLS list.
- k_d : For most shrubs, an average density factor of 1.0 will be appropriate. For very large shrubs, an upward adjustment to 1.1 may be warranted.
- k_{mc} : In most cases, the microclimate factor would be assigned as discussed in Chapter 2.

Trees

- k_s : Species factor values are found in the WUCOLS list.
- k_d : For small trees (< 15 feet tall), an average density factor of 1.0 would be appropriate. For larger trees, an upward adjustment to 1.1 or 1.2 accounts for the increase in leaf area found in many canopies.
- k_{mc} : In most cases, the microclimate factor would be assigned as discussed in Chapter 2. For large trees, however, an upward adjustment to 1.2 or 1.3 to account for wind flow through the canopy may be appropriate.

Example: The urban forester for the city of Modesto is interested in estimating water needs for a large Modesto ash tree located in a downtown city plaza for the month of July.



Water needs for individual trees or shrubs can be estimated using the landscape coefficient method. Species, density and microclimate factors all need to be considered.

First, the forester needs to assign values for each of the landscape coefficient factors. In the WUCOLS list *Fraxinus velutina* ‘Modesto’ is classified as “moderate” with a k_s value of 0.4. Since this is a large, dense tree, the forester uses a density factor value of 1.1. The microclimate in the plaza warrants a “high” microclimate factor value. In addition, the forester wants to adjust for wind flow through the canopy since no trees or buildings are nearby to attenuate the wind. The forester selects a k_{mc} value of 1.5. Using these values, a calculation of the landscape coefficient can be made.

$$K_L = k_s \times k_d \times k_{mc}$$
$$K_L = 0.4 \times 1.1 \times 1.5 = 0.66$$



A species factor range of 0.4 to 0.8 is suggested to be appropriate for most annual species.

With the landscape coefficient calculated, the landscape evapotranspiration formula is used to calculate ET_L :

$$ET_L = K_L \times ET_0 \\ K_L = 0.66$$

$$ET_0 = 8.0 \text{ inches (for July in Modesto)} \\ ET_L = 0.66 \times 8.0 \text{ inches} = 5.28 \text{ inches}$$

The urban forester has estimated that the tree needs 5.28 inches of water for the month of July to maintain good appearance, health, and growth. A further adjustment to this value is needed to account for irrigation efficiency (see Chapter 5).

An alternative method for estimating water loss from an individual tree is described in Lindsey and Bassuk (1991). This method uses leaf area index (LAI) to account for density differences in tree canopies.

Vines

Vines occur in many landscapes and need to be considered in water loss estimates. Vines can contribute substantial leaf area to a planting whether they

occur on walls, trellises, arbors, poles, or on the ground. Water needs evaluations for many vine species are included in the WUCOLS list. Although the microclimate factor (k_{mc}) will not be affected by the presence of vines, the density factor (k_d) is affected. Vines add another vegetation type or tier (in some cases) to a landscape and, therefore, increase the vegetation density. They also may contribute to

canopy cover. Upward adjustments in k_d are likely needed when vines are present. These can range from small increases (0.1) to large (0.3) depending on the amount of vegetation (leaf area) added.

Annuals

Estimates of water needs for plantings of annual species can be made using the landscape coefficient formula. As for woody plantings, values for K_L and ET_0 are needed. ET_0 values are obtained as described previously, while K_L needs to be calculated from the three factors, k_s , k_d , and k_{mc} . The microclimate factor, k_{mc} , is determined as before, and k_d will range from 0.5 to 1.0 depending on the fullness of the plantings. The species factor, k_s , is more difficult to determine as many species are not included in the WUCOLS list. Generally, the water requirements of annual plants are relatively high and a k_s range of 0.4 to 0.8 is suggested for most species. By assigning values for k_s , k_d , and k_{mc} , the landscape coefficient, K_L , can be calculated and an estimate of water needs (ET_L) is determined.

Part 2

WUCOLS III*

1999 Edition

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*WUCOLS is the acronym for Water Use Classification of Landscape Species.

The WUCOLS list is intended solely as a *guide* to help landscape professionals identify irrigation water needs of landscape species. It can be used either for the selection of species or to assist in developing irrigation schedules for existing landscapes. It is *not* intended to be used as a “**required**,” “**mandatory**,” “**approved**,” or “**master**” list by local, regional, or statewide governments, government agencies, or water authorities for the selection of plant species. This list should not be used in part or in entirety to restrict species selection only to those species listed here.

In addition, the evaluations of irrigation water requirements presented here should not be considered absolute and are not intended to be used as such, i.e., the user is not “**required**” to use these evaluations. This is a *guide* to species water needs.

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1998



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Introduction

Water conservation is an essential consideration in the design and management of California landscapes. Effective strategies that increase water use efficiency need to be identified and implemented. One key strategy to increase efficiency is that of matching water supply to plant needs. By supplying only the amount of water needed to maintain landscape health and appearance, unnecessary applications that exceed plant needs can be avoided. To do so, however, requires some knowledge of species needs.

This Guide provides irrigation water needs evaluations for over 1,900 species used in California landscapes. It is based on the observations and field experience of 41 knowledgeable landscape horticulturists in California (see list of Regional Committees). It was developed to provide guidance in the selection and maintenance of plants based on irrigation water needs. Specifically, it can be used to:

- assist landscape architects, designers, and planners in selecting plants for water efficient landscapes,
- assist landscape managers in evaluating water needs of existing plantings and in creating irrigation schedules that match species needs,
- provide options for landscape managers who wish to create hydrozones, i.e., to change species composition to reduce wide variations in water needs within plantings, and



The WUCOLS guide provides water needs evaluations for over 1900 species. Plants can be selected according to their water needs and grouped into water conserving hydrozones.

- provide a basis for estimating water needs for new landscapes.

The project was initiated and funded by the Water Use Efficiency Office of the California Department of Water Resources. Work was directed by the University of California Cooperative Extension (San Francisco and San Mateo County office). The first edition of the Guide was completed in 1992. A second edition was published in 1994, and this third edition was completed in 1999. In each edition, additional species evaluations have been included. The third edition was funded by the U.S. Bureau of Reclamation.

Getting Started

If you are using the Guide for the first time, we suggest you begin by reading the following sections on “Categories of Water Needs”, “Standard Conditions”, “Plant Types”, and “Regions”. These sections contain background information which is needed to use the Guide effectively.

If you have used the Guide before, and are familiar with the terms and the evaluation process, proceed directly to “Species Evaluations,” page 62. Be advised, however, that new information has been introduced in WUCOLS III.

The following will help you locate information on important topics.

What does High, Moderate, Low and Very Low mean?

See “Categories of Water Needs,” page 52.

What are Standard Conditions?

See “Standard Conditions,” page 53.

What is meant by Plant Types ?

See “Plant Types,” page 55.

What is meant by Regions?

See “Regions,” page 56.

How do I calculate the right amount of irrigation water to apply?

See “Part 1” of this guide.

Is there more to know?

See “Other Important Information About the Guide,” page 59 and “Appendix B, Invasive Species,” page 143.

Cotinus coggygria, smoke tree, Low



Categories of Water Needs

The key question addressed by WUCOLS committee members was the following:

In order to be maintained in good condition, in the region of California being considered, and under the standard conditions outlined, does the species need high, moderate, low, or very low amounts of irrigation water?

This question served as the starting point for the evaluation process. After defining the terms “Regions” and “Standard Conditions” (see following sections), species were evaluated as needing High, Moderate, Low, and Very Low amounts of irrigation water. Expressed as a percentage of reference evapotranspiration (ET_o), these categories were quantitatively defined as follows:

High (H)	=	70 - 90% ET_o
Moderate (M)	=	40 - 60% ET_o
Low (L)	=	10 - 30% ET_o
Very Low (VL)	=	<10% ET_o

Water needs categories assigned for each species were determined by consensus of the committee. Assignments were made for each of six regions. When disagreements occurred, the higher water need category was assigned. For example, if some evaluators thought the species needed a “moderate” ranking, while others thought “low” was appropriate, then the “moderate” assignment was used.

Species assigned to the Very Low (VL) category were considered to need little or no irrigation during years of average rainfall.

If the committee did not have experience growing the species in the region, a question mark (?) was

assigned. This does not imply that a species should not be tried.

If the species was considered inappropriate for the region, a forward slash (/) was assigned.

Using ET_o percentages, calculations of irrigation water requirements can be made. For example, a species assigned to the moderate (M) category is evaluated as needing between 40% and 60% of reference evapotranspiration to be maintained in good condition. Say, for the month of July, ET_o is 6 inches, then the species needs between 2.4 inches and 3.6 inches of irrigation water for the month. For more information on calculating water requirements for landscapes, see Part 1.

The following examples show how Categories of Water Needs are used.

Evaluations for *Acer macrophyllum*:

- Regions 1 and 3.....M (moderate).....irrigate at 40-60% of ET_o
- Regions 2 and 4.....H (high).....irrigate at 70-90% of ET_o
- Regions 5 and 6..... / (not appropriate)

Evaluations for *Acacia smallii*:

- Regions 1, 2 and 5.... / (not appropriate)
- Region 3.....VL (very low).... little or no irrigation needed
- Regions 4 and 6.....L (low).....irrigate at 10-30% of ET_o



Cerastium tomentosum, snow in summer, Medium

Evaluations for *Zexmenia hispida*:

- Regions 1, 2, 3, 4, 5 and 6.....? committee members did not know species water needs

NOTES:

1. Reference evapotranspiration (ET_o) is defined in “Standard Conditions.”
2. Cases where there are question marks in several regions usually indicate plants that are new to the nursery trade in California. Consult horticultural literature for more information about species water needs.

It is helpful to look at all the evaluations for each species, (i.e., for all six regions) to get a general

assessment of species needs. If there is variation among regions for a species, looking at all evaluations for the species can help you select an irrigation level at the high or low end of the category's range.

Standard Conditions

The following conditions were applied to all species evaluations.

Established Plants

Species irrigation water needs are assessed for plants that have become “established” in the landscape. “Established” meaning that substantial root development has occurred in the landscape soil adjacent to the rootball. The landscape soil becomes the principal source of water for established plants rather than the rootball soil. The time for establishment varies among species and with soil conditions, but generally occurs by the second or third year after planting. After establishment, roots of trees, shrubs, groundcovers, etc., become intertwined in the soil, creating a common rootzone.

Reference Evapotranspiration Conditions (ET_o)

ET_o is defined as water loss from a large field of 4-to-7-inch-tall, cool-season grass that is not water stressed. Although ET_o can be measured directly, it is usually calculated from weather data. Daily ET_o information for many regions of the state is available through the California Irrigation Management Information System (CIMIS). Evaluations are made for site conditions equivalent to those used for ET_o measurements, i.e., full sun, no extraordinary winds, no shading from nearby structures or plants, and no heat inputs from nearby sources such as buildings, pavements, or reflective surfaces. As an exception,

shade-requiring species (e.g., Japanese aucuba) are evaluated for shade conditions. Shade species are considered to be those plants which when exposed to full sun for some part of the day will show visible injury. Since species vary in their shade requirements (for example, all day versus afternoon shade), any species requiring some shade to avoid injury (in the region) is evaluated for shade.

See "Appendix D, Additional Resources," for information on how to obtain CIMIS data.

Good Quality

Plant performance can vary substantially depending on the amount of water supplied. Small amounts may simply prevent the dehydration of plant tissues, but appearance is likely to be affected. Increasing amounts may improve appearance (leaf color, canopy density or fullness), but may not be enough to promote growth. More water may be sufficient to maintain good appearance and support typical (average) growth for the species (and flower or fruit production if desired). Still more water may result in excessive growth; while more water may cause decline (typically from root disease) in certain species. Since both appearance and some growth (not excessive) are important in most landscapes, evaluations were made to provide sufficient water for the species to be maintained as such, i.e., in good condition. This is somewhat difficult to evaluate precisely for some species, however, so whenever a question was raised as to whether a species required a greater or lesser amount of water to maintain good quality, the higher evaluation (more water) was assigned.

Groundwater Not Available

Although some species of plants develop root systems deep enough to extract groundwater (e.g., *Quercus lobata*), groundwater is not available in all planting sites. A species capable of extracting groundwater may not be able to do so because the water is simply not available. Therefore, evaluations are made for conditions where the only sources of water were rainfall and irrigation. In areas where groundwater is available and a species is known to utilize ground water, then adjustments in irrigation scheduling should be made for that species (or group of species).

Plants Must Be Irrigatable

In some cases the soil surface may be sealed around plants (particularly trees) by pavements or other surface barriers. This inhibits the infiltration of water into the rootzone. In other cases the soil volume capable of holding water may be so small and may dry so rapidly that it may be difficult to maintain available water in the rootzone. In either case, the amount of water identified as being needed to maintain good quality may not be sufficient simply because the plant is not "irrigatable." Evaluations made here assume as a standard condition that the species can be irrigated, i.e., the water applied can enter and be held in the rootzone sufficiently long for uptake.

Plant Types

The species list includes over 1,900 species of landscape plants which are identified by botanical and common names. The plants are listed alphabetically according to botanical names. An index of common names follows the species list.

Each plant falls into one or more of the following vegetation types: Trees, Shrubs, Groundcovers, Vines, Perennials (includes ferns, grasses, and bulbs) and Biennials. Plant types are entered on the list for each plant under "Type" as:

T.....	Tree
S.....	Shrub
V.....	Vine
Gc.....	Groundcover
P.....	Perennial
Bi.....	Biennial

Cultivars, with some exceptions, are not mentioned. It is presumed that most cultivars will have the same water requirements as the species. Examples of exceptions include the following:

1. *Nandina domestica* the cultivar 'Purpurea' was included because it was thought to require more water than the species in three regions,
2. *Lonicera japonica 'Halliana'* was included because the cultivar was thought to be more common than the species,
3. *Illicium floridanum 'Alba'* was included because it was the only example of the species listed.

Turfgrasses

Turfgrasses were not evaluated by the committee. For your convenience, several turf species are listed in the "Species Evaluations" section. Water use requirements listed are from University of California Publication 21491, *Turfgrass Evapotranspiration Map, Central Coast of California*. This publication also contains other important information regarding turfgrass irrigation such as regional ET variability, correcting for rainfall, dew, and fog and calculating sprinkler run times.



Rosa sp. climbing rose, High to Medium and *Solanum jasminoides*, potato vine, Medium

Regions

Since there are substantially different climate zones¹ in California, species are evaluated for six regions which represent different climatic conditions.

Region 1

North-Central Coastal (California Climate Zones 14, 15, 16, and 17) (CIMIS ET_o Zones 1, 2, 3, 4, 6 and 8)²

Region 2

Central Valley (California Climate Zones 8, 9 and 14), (CIMIS ET_o Zones 12, 14, 15, and 16)

Region 3

South Coastal (California Climate Zones 22, 23 and 24), (CIMIS ET_o Zones 1, 2, 4 and 6)

Region 4

South Inland Valleys and Foothills (California Climate Zones 18, 19, 20 and 21), (CIMIS ET_o Zone 9)

Region 5

High and Intermediate Desert (California Climate Zone 11), (CIMIS ET_o Zones 14 and 17)

Region 6

Low Desert (California Climate Zone 13), (CIMIS ET_o Zone 18)

Notes on Regions

Within each region there is some variability in climate patterns among the cities listed. For example, some cities may be considerably warmer than others during the summer months, yet they are within the same region. This variability can only be reduced by increasing the number of regions, which would cause the list to become enlarged and somewhat more complicated.

For certain locations (considered atypical for the region), it may be useful to consider evaluations from another region that more closely characterizes the location of interest. For example, if a city in Region 1 has a climate more closely characterized by Region 2, then Region 2 species evaluations should be considered for that location. Such assessments will need to be based on the judgement of the user.

If a city is not listed and is located in California Climate Zone 14 which overlaps regions 1 and 2, it will be necessary to decide if the city is more similar in climate to Petaluma (coastal influence) or Sacramento Valley.

If a city is located in a California Climate Zone which was not evaluated (zones 1, 2, 3, and 7—mainly high elevation, cold winter areas) an estimate may be made by looking at all the evaluations for the species in question. Hardiness is typically the major factor in determining if a species is appropriate or not.

The main difference between the California high and intermediate desert regions is that the high desert is colder in the winter; as the elevation increases so does the frequency of temperatures below freezing.

¹ California climate zones are described in University of California Publication 3328, *Generalized Plant Climate Zones of California and Sunset Western Garden Book*.

² ET_o Zones are described in the *California Irrigation Management Information System (CIMIS) Reference Evapotranspiration Map*, 1999 (see map on page 141).

As a result, species which are listed as appropriate for the low desert and inappropriate for the high desert may be marginally hardy and appropriate to try in the intermediate desert.

Some Cities that Characterize Each Region					
REGION 1 North-Central Coastal	REGION 2 Central Valley	REGION 3 South Coastal	REGION 4 South Inland Valley	REGION 5 Intermediate & High Desert	REGION 6 Low Desert
Concord	Auburn	Anaheim	Altadena	Apple Valley	Borrego Springs
Cupertino	Bakersfield	Camarillo	Azuza	Barstow	Blythe
Healdsburg	Chico	Fallbrook	Chino	Bishop	Brawley
Livermore	Coalinga	Fullerton	Corona	Boulder City	Coachella
Los Altos Hills	Fresno	Irvine	Covina	China Lake	Desert Center
Napa	Los Banos	Laguna Beach	El Monte	Gorman	Desert Hot Springs
Novato	Marysville	La Mesa	Escondido	Independence	Death Valley
Oakland	Merced	Long Beach	Hemet	Joshua Tree	El Centro
Petaluma	Modesto	Los Angeles	Ojai	Lancaster	Indian Wells
Salinas	Red Bluff	Mission Viejo	Pasadena	Lone Pine	Indio
San Francisco	Redding	Oxnard	Perris	Mojave	Jacumba
San Jose	Roseville	Santa Ana	Pomona	Olancha	Needles
San Luis Obispo	Sacramento	Santa Barbara	Ramona	Palmdale	Palm Desert
Santa Cruz	Stockton	San Diego	Riverside	Pear Blossom	Palm Springs
Santa Rosa	Tracy	San Juan Capistrano	San Bernardino	Tehachapi	Rancho Mirage
	Visalia	Santa Monica	San Fernando	Victorville	Thermal
		Ventura	Santa Paula		
		Vista	Sun City		
		Whittier	Thousand Oaks		
			Van Nuys		



Cistus purpureus, orchid rockrose,
Low to Very Low

Other Important Information About the Guide

Variation in Regional Evaluations

Variation in species evaluations among regions occurs in many cases. Two patterns of variation are found:

1. where the variation ranges from less water needed in cooler climates to more in warmer ones, and
2. where less water is required in warmer climates than in cooler ones.

The following examples are typical cases:

Case 1—*Laurus nobilis*, sweet bay

1	2	3	4	5	6
L	L	L	L	M	M

This is the most common variation. It merely indicates that certain species were thought to require more water in warmer climates.

Case 2—*Gleditsia triacanthos*, honey locust

1	2	3	4	5	6
L	L	M	L	L	L

A warmer region indicates a lower water requirement than a cooler region. This case reflects differ-

ences in observation and experience among regional committees.

Zauchneria spp., California fuchsia

1	2	3	4	5	6
L	L	VL	L	/	M

This example shows both cases. Sometimes, for certain California natives and other drought tolerant species, there was agreement that the plant would grow with little or no irrigation, but opinions varied as to how well it would perform in a managed landscape under those conditions.

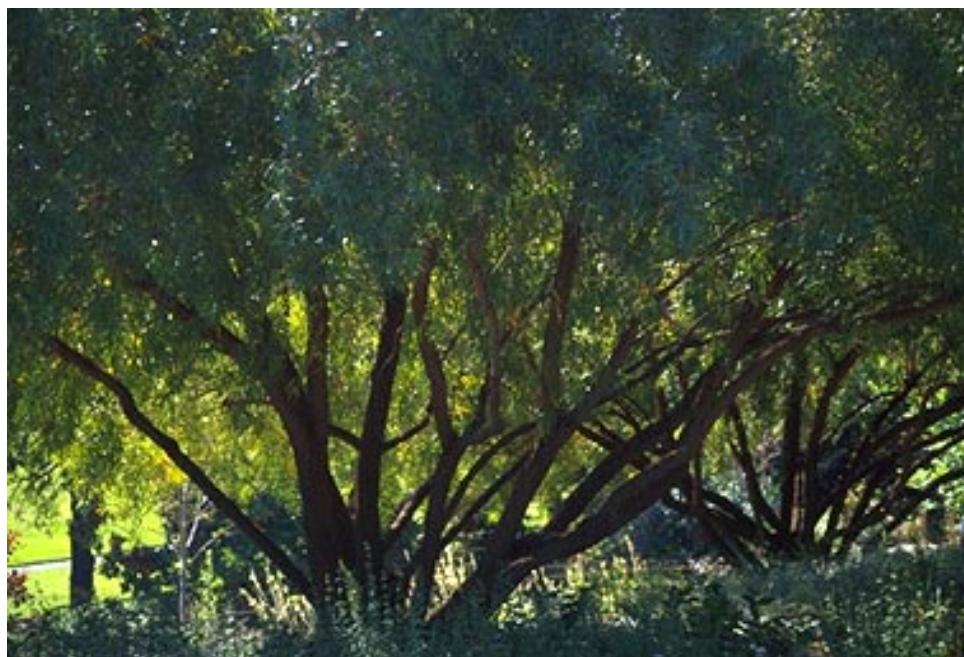
Drought Stress/Insect Attack Relationships

Although some species perform well with little or no irrigation water, their susceptibility to insect attack and injury may increase with water stress. For example, many Eucalyptus species perform well in non-irrigated conditions in many parts of California. When drought stressed, however, they become susceptible to attack and injury from the Eucalyptus long-horned borer. This is the case as well for Monterey pine (California five-spined engraver beetle) and white alder (Flatheaded borer). For these species, evaluations were made with consideration given to water stress and pest interactions. For example, although Eucalyptus globulus will perform well in Regions 3 and 4 with little summer water, it was assigned to the “moderate” category to minimize its susceptibility to borer injury.

Shade

Most species were evaluated for full sun conditions. Light intensity and duration varies with seasons, microclimates and proximity to the coast. Many

species which can be grown in full sun in coastal locations require a measure of shade in inland areas. Others require some shade in all locations. Here, each species was evaluated for the conditions which would produce best appearance and flowering or fruit production for the region. Because of the lack of a standard method for identifying species shade requirements, however, plants needing shade are not



Rhus lancea, African sumac, Medium to Low

noted on the list. Consult horticultural literature for more information on species light requirements.

Winter Irrigation

Although deciduous species are not typically irrigated in the winter months, there may be some need to do so in desert regions. Warm, windy conditions can dehydrate shoots and buds. In addition, some evergreen species may need winter irrigation during drought years or in desert climates.

Summer Deciduous Species

As a drought adaptation, certain species shed their leaves when soil moisture level become low (e.g. California buckeye). Usually, such species do not require irrigation water and are designated Very Low on the list. In cases of low spring rainfall, or when retention of summer leaves is desired, irrigation may be needed.

Special Conditions

Special conditions such as new plantings or a need for rapid growth may require upward adjustments in species water needs.

Revegetation Species

Species selected for revegetation sites should be limited to those which are well adapted to the location and do not require irrigation after establishment. Species used principally for revegetation (i.e., not typically used in irrigated landscape, such as mule fat and poison oak) are not included on the species list.

Invasive Species

Certain species considered invasive both in wildland areas and managed landscapes are available in California nurseries. Their inclusion on this list is not meant to encourage their use, but to alert you that these species can be invasive. For detailed information, see “Invasive Species” (Appendix B).

Using Field Data

Although substantial information exists on the irrigation water needs of agricultural species and turfgrasses, little information is available for woody and herbaceous landscape species. Field studies have quantified the irrigation requirements for six groundcover species (Pittenger, 1990) and three tree species (Hartin, 1991). This information has been used in these evaluations. Considering that over 1,900 tree, shrub, groundcover, vine, and perennial species are available from California nurseries, however, a considerable amount of work still needs to be done before field data alone can be used to determine species water needs.

Limitations of the List

This list is limited in a number of ways:

1. It is subjective (i.e., it is based largely on field observations rather than scientific data). As such, evaluations are not definitive and may change as more research-based information becomes available.
2. It is a partial list—not all landscape species are included. It is a large list which includes most plants available from California nurseries, but it does not include all plants. Additions to the list are expected as new species are introduced or less common species are evaluated.
3. Not all regions of California are included in the evaluations. Extrapolations may be needed from a region evaluated to one that is not.



Astilbe hybrid, false spirea, High to Medium

Species Evaluations

The three plant species listed below are examples of entries on the Species Evaluation List. As a quick reference, a key to symbols is included below. For more information on terms and the evaluation process, see previous sections.

			1	2	3	4	5	6
T	Ailanthus altissima	tree of heaven	VL	VL	L	L	L	L
S	Brugmansia spp.	angel's trumpet	M	/	M	H	/	/
Gc	Dodonaea procumbens	hopseed	L	L	L	?	?	?

Key to Symbols

CATEGORIES OF WATER NEEDS

- H High
- M Moderate
- L Low
- VL Very Low
- / Inappropriate
- ? Unknown

WUCOLS REGIONS

- 1 North Central Coastal
- 2 Central Valley
- 3 South Coastal
- 4 South Inland Valley
- 5 High and Intermediate Desert
- 6 Low Desert

PLANT TYPES

- T Tree
- S Shrub
- V Vine
- Gc Groundcover
- P Perennial (includes ferns, grasses and bulbs)
- Bi Biennial

INVASIVE SPECIES

- @@ Greater Statewide Concern
- @ Lesser Statewide Concern

Species Evaluation List--1999

TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
S	<i>Abelia chinensis</i>	Chinese abelia	M	?	?	?	/	/	
S	<i>Abelia floribunda</i>	Mexican abelia	M	?	M	M	/	/	
S Gc	<i>Abelia X grandiflora</i>	glossy abelia	M	M	M	M	/	/	
S	<i>Abelia 'Sherwoodii'</i>	Sherwood dwarf abelia	M	M	M	M	/	/	
T	<i>Abies spp.</i>	fir	M	/	M	M	/	/	
T	<i>Abies pinsapo</i>	Spanish fir	L	/	L	/	/	/	
S	<i>Abutilon X hybridum</i>	flowering maple	M	H	H	H	/	/	
S	<i>Abutilon palmeri</i>	indian mallow	?	?	L	?	?	?	
S T	<i>Acacia abyssinica</i>	Abyssinian acacia	/	?	/	?	/	L	
T	<i>Acacia aneura</i>	mulga	/	?	?	?	/	L	
T	<i>Acacia baileyana</i>	Bailey acacia	L	L	L	L	/	/	⊗
T S	<i>Acacia berlandieri</i>	guajillo	?	?	?	M	/	L	
T	<i>Acacia boormanii</i>	Snowy River wattle	?	?	L	?	?	?	
T	<i>Acacia cognata (A.subporosa)</i>	bower wattle	L	L	M	M	/	/	
T S	<i>Acacia constricta</i>	whitethorn acacia	?	L	L	L	L	L	
T S	<i>Acacia craspedocarpa</i>	leatherleaf acacia	?	?	?	?	L	L	
T	<i>Acacia cultriformis</i>	knife acacia	L	L	L	L	/	/	
T	<i>Acacia dealbata</i>	silver wattle	VL	L	L	L	/	/	⊗
T	<i>Acacia decurrens</i>	green wattle	VL	L	L	L	/	/	⊗
T	<i>Acacia farnesiana</i>	sweet acacia	?	?	L	L	/	L	
S	<i>Acacia glaucoptera</i>	clay wattle	L	/	L	L	/	/	
T S	<i>Acacia greggii</i>	catclaw acacia	L	L	L	L	L	L	
T S	<i>Acacia longifolia</i>	Sydney golden wattle	L	L	L	L	/	/	⊗
T	<i>Acacia melanoxylon</i>	blackwood acacia	VL	L	L	L	/	/	⊗
T	<i>Acacia pendula</i>	weeping acacia	L	L	M	M	/	L	
T	<i>Acacia pennatula</i>	pennatula acacia	?	?	VL	?	L	L	
T S	<i>Acacia podalyriifolia</i>	pearl acacia	VL	VL	L	M	/	/	
S Gc	<i>Acacia redolens</i>	prostrate acacia	VL	VL	L	L	L	L	
S	<i>Acacia rigens</i>	needleleaf acacia	/	/	?	?	?	?	
T	<i>Acacia rigidula</i>	rigidula acacia	/	/	?	?	?	?	
T	<i>Acacia salicina</i>	willow acacia	L	L	L	M	/	M	
T S	<i>Acacia saligna</i>	blue leaf wattle	L	L	L	L	/	M	
T	<i>Acacia schaffneri</i>	twisted acacia	/	/	?	?	/	L	
T	<i>Acacia smallii</i>	desert sweet acacia	/	/	VL	L	/	L	
T	<i>Acacia stenophyla</i>	eumong/shoestring acacia	VL	L	L	L	/	L	
T S	<i>Acacia subporosa</i>	subporosa acacia	L	/	L	?	?	?	
S	<i>Acacia vestita</i>	hairy wattle	?	?	L	L	?	?	
T	<i>Acacia willardiana</i>	palo blanco	/	/	?	L	/	L	
P	<i>Acanthus mollis</i>	bear's breech	M	M	M	M	/	M	
T S	<i>Acca sellowiana (Feijoa sellowiana)</i>	pineapple guava	L	L	L	M	/	M	
T	<i>Acer buergerianum</i>	trident maple	M	M	M	/	/	/	
T	<i>Acer campestre</i>	hedge maple	M	M	?	?	/	/	
T S	<i>Acer circinatum</i>	vine maple	M	H	/	/	/	/	
T	<i>Acer X freemanii</i>	Freeman maple	M	M	?	?	?	?	
T	<i>Acer griseum</i>	paperbark maple	M	M	?	?	?	?	
T	<i>Acer macrophyllum</i>	big leaf maple	M	H	M	H	/	/	
T	<i>Acer negundo</i>	box elder	M	M	M	M	/	/	
T	<i>Acer oblongum</i>	evergreen maple (oblongum)	M	/	M	M	/	/	
T	<i>Acer palmatum</i>	Japanese maple	M	M	H	H	/	/	
T	<i>Acer paxii</i>	evergreen maple (paxii)	M	M	M	M	/	/	
T	<i>Acer platanoides</i>	Norway maple	M	M	/	H	/	/	
T	<i>Acer rubrum</i>	scarlet red maple	M	H	H	H	/	/	
T	<i>Acer saccharinum</i>	silver maple	M	M	/	M	/	/	
T	<i>Acer saccharum</i>	sugar maple	M	/	/	/	/	/	
T	<i>Acer tataricum ssp. ginnala</i>	amur maple	M	M	?	?	?	?	
T	<i>Acer truncatum</i>	Chinese maple	M	M	/	H	/	/	
P	<i>Achillea ageratifolia</i>	Greek yarrow	L	M	M	M	M	M	
P	<i>Achillea clavennae</i>	silvery yarrow	L	L	L	L	/	/	
P	<i>Achillea filipendulina</i>	fern leaf yarrow	L	L	L	L	M	M	
P	<i>Achillea X kellerii</i>	kellerii achillea	M	?	L	?	?	?	
P	<i>Achillea millefolium & hybrids</i>	common yarrow	L	L	L	L	M	M	⊗

Species Evaluation List--1999

TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
Gc P	Achillea tomentosa	woolly yarrow	L	L	L	L	M	M	
P	Aconitum napellus	garden monkshood	M	M	/	/	/	/	
P	Acorus gramineus	sweet flag	H	H	H	H	H	H	
V	Actinidia arguta	kiwi/Tara	M	M	M	?	/	/	
V	Actinidia deliciosa	kiwi	H	H	H	H	/	/	
S	Adenanthes drummondii	woolly bush	?	?	L	?	?	?	
S	Adenanthes sericea	woolly bush	L	?	?	?	?	?	
P	Adenophora bulleyana	ladybells	H	?	?	?	?	?	
P	Adenophora liliifolia	lilyleaf ladybells	H	?	M	?	?	?	
S	Adenostoma fasciculatum	chamise	VL	VL	VL	VL	/	/	
T S	Adenostoma sparsifolium	red shanks/ribbonwood	VL	?	VL	VL	/	/	
P	Adiantum spp.	maidenhair fern	H	H	H	H	H	H	
S P	Aeonium spp.	Canary Island rose	L	/	L	L	/	L	
T	Aesculus californica	California buckeye	VL	VL	VL	L	/	/	
T	Aesculus X carnea	red horsechestnut	M	M	M	M	/	/	
T S	Aesculus pavia	red buckeye	M	?	?	?	?	?	
P	Aethionema armenium 'Warley Rose'	Warley rose stone cress	M	?	?	?	?	?	
T	Afrocarpus gracilior (Podocarpus gracilior)	African fern pine	M	M	M	M	?	M	
S	Agapetes 'Ludgvan Cross'	Ludgvan cross agapetes	M	?	M	?	?	?	
S	Agapetes serpens (Pentapetpterygium)	agapetes (serpens)	M	?	M	?	?	?	
P	Agapanthus africanus	lily-of-the-Nile	M	M	M	M	/	M	
P	Agapanthus campanulatus		M	M	M	M	/	M	
P	Agapanthus inapertus major		L	?	M	M	/	M	
P	Agapanthus praecox spp. orientalis & cvs		M	M	M	M	/	M	
P	Agastache aurantica	giant hyssop	M	M	M	M	M	M	
P	Agastache cana	mosquito plant	M	M	M	M	M	M	
P	Agastache coccinea pink	agastache	M	M	M	M	M	M	
P	Agastache rugosa	wrinkled agastache	M	M	M	M	M	M	
T	Agathis australis	Australian agathis/ kauri	M	/	M	/	/	/	
T	Agathis robusta	Queensland kauri	M	/	M	M	/	/	
S P	Agave spp.	agave	L	L	L	L	/	L	
T	Agonis flexuosa	peppermint tree	L	/	L	M	/	/	
P	Agryanthemum 'Chelsea girl'	agyranthemum	?	?	M	M	?	?	
T	Ailanthus altissima	tree of heaven	VL	VL	L	L	L	L	⊗
Gc	Ajuga reptans	carpet bugle	M	M	M	H	H	H	
V	Akebia quinata	fiveleaf akebia	M	M	M	M	/	/	
T	Albizia distachya	plume albizia	L	/	L	/	/	/	⊗
T	Albizia julibrissin	silk tree	L	L	M	M	M	M	
T	Alectryon excelsus	alectryon/titoki	M	/	M	/	/	/	
V	Allamanda cathartica	golden trumpet vine	/	/	M	/	/	/	
P	Allium spp.	allium	M	M	M	M	?	?	
T	Allocasuarina torulosa	forest oak	L	?	?	/	?	?	
T	Allocasuarina verticillata (Casuarina stricta)	coast beefwood	L	L	L	L	M	M	
T	Alnus cordata	Italian alder	M	M	M	M	/	/	
T	Alnus glutinosa	black alder	M	M	M	H	/	/	
T	Alnus oregona	Oregon alder	H	H	/	/	/	/	
T	Alnus rhombifolia	white alder	H	H	H	H	H	/	
P	Alocasia spp.	elephant's ear	H	H	H	H	/	/	
T S	Aloe spp.	aloe	L	L	L	L	/	L	
P	Alonsoa warscewiczii	alonsoa	M	?	M	?	?	?	
P	Alopecurus pratensis 'Aureus'	golden foxtail	?	?	M	?	?	?	
S	Aloysia machrostachya	aloysia	?	?	?	?	L	L	
S	Aloysia triphylla	lemon verbena	L	L	L	L	L	L	
S P	Alpinia zerumbet	shell ginger	H	/	H	H	/	H	
P	Alstroemeria spp.	Peruvian lily	M	M	M	M	?	M	
S	Alyogyne hakeifolia	red centered hibiscus	/	/	L	L	/	/	
S	Alyogyne huegelii	blue hibiscus	L	L	L	L	/	L	

Species Evaluation List--1999

TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
P	<i>Alyssum montanum</i>	mountain alyssum	L	L	?	?	?	?	
P	<i>Amaryllis belladonna</i>	naked lady	VL	VL	VL	L	L	L	
S	<i>Ambrosia deltoidea</i>	triangleleaf bursage	?	?	?	?	L	L	
S	<i>Ambrosia dumosa</i>	white bursage	?	?	/	/	L	L	
S	<i>Amorpha fruiticosa</i>	false indigobush	?	?	?	?	M	?	
V	<i>Ampelopsis brevipedunculata</i>	blueberry creeper	M	M	/	M	M	M	
P	<i>Anacyclus pyrethrifolium</i> var <i>depressus</i>	Mount Atlas daisy	?	?	?	?	?	?	
P	<i>Anagallis monelli</i>	pimpernel	?	?	M	/	/	/	
S Gc	<i>Andromeda polifolia</i>	bog rosemary	H	H	/	/	/	/	
P	<i>Androsace lanuginosa</i>	rock jasmine	M	?	?	?	?	?	
P	<i>Anemone X hybrida</i>	Japanese anemone	M	M	M	M	M	M	
P	Anemone pulsatilla (see <i>Pulsatilla vulgaris</i>)								
P	<i>Anemone sylvestris</i>	snowdrop windflower	?	?	M	?	?	?	
V	<i>Anemopaegma chamberlaynii</i>	yellow trumpet vine	?	?	M	M	/	/	
P Gc	<i>Anemopsis californica</i>	yerba mansa	?	?	?	?	H	H	
P	<i>Angelonia angustifolia</i>	angel flower	?	?	M	?	?	?	
T	<i>Angophora cordifolia</i> (<i>Angophora costata</i>)	gum myrtle	L	/	L	M	/	/	
P	<i>Anigozanthos flavidus</i>	kangaroo paw	L	L	L	L	/	M	
P	<i>Anigozanthos viridis</i>	green kangaroo paw	L	L	L	L	/	M	
S	<i>Anisacanthus</i> spp.	desert honeysuckle	?	?	L	L	L	L	
S	<i>Anisodontea X hypomadarum</i>	South African mallow	M	M	M	M	/	M	
S	<i>Anisodontea scabrosa</i>	false mallow	M	M	M	M	/	M	
T	<i>Annona cherimola</i>	cherimoya	M	/	M	M	/	/	
P	<i>Antennaria rosea</i>	pussy toes	L	L	?	?	?	?	
P	<i>Anthoxanthum odoratum</i>	sweet vernal grass	M	?	?	?	?	?	
Gc V	<i>Antigonon leptopus</i>	coral vine	M	/	L	L	/	L	
Gc	<i>Aptenia cordifolia</i>	ice plant (<i>Aptenia</i>)	L	L	L	L	/	H	
GC	<i>Aptenia 'Red Apple'</i>	ice plant (Red Apple)	L	L	L	L	/	H	®
P	<i>Aquilegia</i> spp.	columbine	L	L	M	M	M	M	
P	<i>Arabis</i> spp.	rockcress	L	M	M	?	?	?	
V	<i>Araujia sericifera</i>	cruel vine	?	?	L	?	?	?	
T	<i>Araucaria araucana</i>	monkey puzzle tree	L	M	/	M	/	/	
T	<i>Araucaria bidwillii</i>	bunya-bunya	L	M	M	M	/	/	
T	<i>Araucaria heterophylla</i>	Norfolk Island pine	M	M	M	/	/	/	
T	<i>Arbutus 'Marina'</i>	Marina arbutus	L	L	M	M	/	/	
T	<i>Arbutus menziesii</i>	madrone	L	L	/	/	/	/	
T S	<i>Arbutus unedo</i>	strawberry tree	L	L	L	L	M	M	
T	<i>Archontophoenix cunninghamiana</i>	king palm	M	M	M	M	/	/	
S Gc	<i>Arctostaphylos</i> cultivars	manzanita cultivars	L	L	L	L	/	/	
S T	<i>Arctostaphylos diversiloba</i> (<i>Comarostaphylos diversiloba</i>)	summer holly	VL	L	VL	L	/	L	
S Gc	<i>Arctostaphylos</i> spp.	manzanita	VL	L	L	L	/	/	
Gc P	<i>Arctotheca calendula</i>	cape weed	M	M	M	M	/	M	®
P	<i>Arctotis</i> hybrids	African daisy	M	M	L	L	/	M	
Gc	<i>Ardisia japonica</i>	Japanese ardesia, marlberry	M	/	H	/	/	/	
T	<i>Arecastrum romanzoffianum</i> (See <i>Syagrus romanzoffiana</i>)								
	<i>Arenaria</i> spp. (See <i>Sagina</i>)	Irish, Scotch moss							
P	<i>Arenaria montana</i>	sandwort	?	M	M	M	?	?	
S	<i>Arenga engleri</i>	Ryukyu Island palm	?	?	M	?	?	?	
P	<i>Argyranthemum frutescens</i>	Marguerite daisy	M	M	M	M	/	M	
P	<i>Aristea ecklonii</i>	little Tyler/blue stars	M	?	M	M	/	/	
P	<i>Aristea major</i>	tall aristea	M	?	?	?	?	?	
V	<i>Aristolochia californica</i>	California Dutchman's pipe	L	L	?	M	/	/	
V	<i>Aristolochia durior</i>	Dutchman's pipe	M	M	?	M	/	/	
V	<i>Aristolochia elegans</i>	calico flower	/	/	M	M	/	/	
P	<i>Armeria alliacea</i>	sea pink							
P	<i>Armeria caespitosa</i> (<i>A. juniperifolia</i>)	thrift	?	?	M	M	M	M	
Gc P	<i>Armeria maritima</i>	sea pink	M	M	M	M	M	M	

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			1	2	3	4	5	6	
P	<i>Armeria setacea</i>	thrift	?	?	M	M	M	M	
P	<i>Arnica montana</i>	arnica	M	?	?	?	?	?	
P	<i>Arrhenatherum elatius ssp bulbosum</i>	bulb oat grass	?	?	M	M	M	M	
S Gc	<i>Artemisia spp. (shrubby)</i>	sagebrush	VL	L	L	L	L	L	
Gc P	<i>Artemisia spp. (herbaceous)</i>	tarragon/angel's hair etc.	L	L	L	L	M	M	
P	<i>Arthropodium cirratum</i>	star lily	M	?	M	?	/	/	
P	<i>Arum italicum</i>	Italian Arum	VL	L	VL	?	?	?	
P	<i>Arundo donax</i>	giant reed	M	M	M	M	M	M	⊕ ⊕
<i>Arundinaria</i> (See <i>Chimonobambusa</i> , <i>Drepanostachyum</i> , <i>Pleioblastus</i> , <i>Semiarundinaria</i> , <i>Thamnochalamus</i> & other genera)									
P	<i>Arundinaria gigantea</i>	cane reed	L	L	M	M	/	M	
V	<i>Asarina antirrhiniflora</i> (Maurandya)	snapdragon vine	M	?	M	?	/	M	
V	<i>Asarina barclaiana</i> (Maurandya)	climbing snapdragon	M	?	M	?	?	?	
V	<i>Asarina erubescens</i> (Maurandya)	creeping gloxinia	M	?	M	?	?	?	
Gc P	<i>Asarum caudatum</i>	wild ginger	M	M	H	?	/	/	
P	<i>Asclepias tuberosa</i>	butterfly weed	M	M	M	M	M	M	
P	<i>Asclepias</i> (wild species)	milk/silk weed	L	L	L	L	L	L	
P	<i>Asparagus</i> spp.	ornamental asparagus	M	M	M	M	/	M	
P	<i>Asphodeline lutea</i>	Jacob's rod/kings spear	L	?	?	?	?	?	
P	<i>Asphodeline taurica</i>	Asphodel	L	?	?	?	?	?	
P	<i>Aspidistra elatior</i>	cast iron plant	L	L	M	M	/	M	
P	<i>Asplenium bulbiferum</i>	mother fern	M	M	H	H	/	/	
P	<i>Asplenium nidus</i>	bird's nest fern	M	M	H	/	/	/	
P	<i>Asplenium scolopendrium</i> (Phyllitis)	Hart's tongue fern	L	?	L	?	?	?	
P	<i>Astelia nervosa chathamica</i>	silver spear	M	/	M	?	?	?	
P	<i>Astelia nivicola</i>	astelia	M	?	?	?	?	?	
P	<i>Aster</i> spp.	aster	M	M	M	M	M	M	
P	<i>Asteriscus maritimus</i>	gold coin, Canary Island daisy	M	M	L	M	/	/	
P	<i>Asteriscus sericeus</i> (See <i>Nauplius sericecus</i>)								
P	<i>Astilbe</i> hybrids	false spirea	M	H	/	/	/	/	
P	<i>Astrantia major rosea</i>	greater masterwort	M	M	?	?	?	?	
S	<i>Athanasia acerosa</i>	athanasia	L	?	?	?	?	?	
P	<i>Athyrium filix-femina</i>	lady fern	M	H	H	H	H	/	
P	<i>Athyrium nipponicum</i> 'Pictum'	painted lady fern	M	M	?	?	?	?	
S Gc	<i>Atriplex</i> spp.	saltbush	VL	VL	VL	VL	L	VL	⊕
P	<i>Aubrieta deltoidea</i>	rock cress	L	M	?	?	?	?	
S	<i>Aucuba japonica</i>	Japanese aucuba	M	M	M	M	/	M	
P	<i>Aurinia saxatilis</i>	hardy alyssum/basket of gold	L	L	M	M	?	?	
T	<i>Azadirachta indica</i>	neem	M	?	?	?	?	?	
S	<i>Azaliadendron</i> 'Hardijizer's Beauty'	Hardijizer's beauty	M	?	?	?	?	?	
S T	<i>Azara dentata</i>	orono	M	/	M	?	/	/	
S T	<i>Azara integrifolia</i>	azara	M	/	M	?	/	/	
S T	<i>Azara microphylla</i>	box leaf azara	M	/	M	M	M	/	
P	<i>Babiana stricta</i> hybrids	baboon flower	L	L	L	?	/	/	
S	<i>Baccharis pilularis</i> consanguinea	coyote brush	L	L	L	L	/	/	
S Gc	<i>Baccharis pilularis</i> cvs.	dwarf coyote brush	L	L	L	L	/	/	
S	<i>Baccharis sarothroides</i>	desert broom	VL	L	VL	L	L	L	
S Gc	<i>Baccharis</i> 'Centennial'	bentennial baccharis	VL	L	VL	L	L	L	
<i>Bacopa</i> 'Snowflake' (See <i>Sutera</i> spp.)									
S T	<i>Baeckea virgata</i>	tall baeckia	L	?	?	?	?	?	
P	<i>Baileya multiradiata</i>	desert marigold	?	?	?	L	L	L	
P	<i>Ballota pseudodictamnus</i>	Grecian horehound	VL	VL	?	?	?	?	
S	<i>Bambusa</i> spp.	bamboo (Bambusa)	L	L	M	M	M	M	
P S	<i>Banksia ericifolia</i>	heath-leaved banksia	L	?	?	?	?	?	
T S	<i>Banksia integrifolia</i>	tree banksia	L	/	M	M	/	M	
T S	<i>Banksia praemorsa</i>	cut-leaf banksia	?	?	?	?	?	?	
T S	<i>Banksia speciosa</i>	showy banksia	L	/	M	?	/	M	
P	<i>Baptista australis</i>	false indigo	L	L	?	?	?	?	

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			1	2	3	4	5	6	
S	<i>Barleria obtusa</i>	barleria	?	?	M	M	/	/	
T	<i>Bauhinia X blakeana</i>	Hong Kong orchid tree	M	/	M	M	/	M	
V	<i>Bauhinia corymbosa</i>	phanera	?	?	M	?	/	M	
T	<i>Bauhinia forficata</i>	Brazilian butterfly tree	M	M	M	M	/	/	
T S	<i>Bauhinia galpinii</i>	red orchid bush	L	\	M	M	/	/	
	<i>Bauhinia punctata</i> (see <i>galpinii</i>)								
T	<i>Bauhinia variegata</i> (purpurea)	purple orchid tree	M	/	M	M	/	M	
P	<i>Baumea rubiginosa</i>	baumea	?	?	H	?	?	?	
T S	<i>Beaucarnea recurvata</i> (See <i>Nolina recurvata</i>)								
V	<i>Beaumontia grandiflora</i>	Easter lily vine	M	/	M	H	/	/	
P	<i>Begonia fuchoides</i> rosea	fuchsia begonia	M	M	M	M	/	/	
P	<i>Begonia grandis</i>	hardy begonia	M	M	M	M	/	/	
P	<i>Begonia 'Richmondensis'</i>	Richmond begonia	M	M	M	M	/	M	
P	<i>Begonia semperflorens</i>	Wax begonia	M	M	M	M	/	M	
P	<i>Bellis perennis</i>	English daisy	M	M	M	M	/	/	
S V	<i>Berberidopsis corallina</i>	coral plant	M	?	?	?	?	?	
S GC	<i>Berberis</i> spp.	barberry	L	L	L	L	L	M	
Gc	<i>Berberis X stenophylla</i> 'Irwinii'	barberry	M	M	M	?	M	M	
P	<i>Bergenia cordifolia</i>	heartleaf bergenia	M	M	M	H	H	H	
P	<i>Bergenia crassifolia</i>	winter blooming bergenia	M	M	M	H	H	H	
P	<i>Berlandiera lyrata</i>	chocolate scented daisy	?	M	?	M	M	M	
P	<i>Beschorneria yuccoides</i>	Mexican lily	/	/	M	?	?	?	
T	<i>Betula fontinalis</i> (occidentalis)	water birch	H	/	H	H	/	/	
T	<i>Betula utilis</i> var. <i>jaquemontii</i>	white barked Himalayan birch	H	H	/	/	/	/	
T	<i>Betula nigra</i>	river/red birch	H	H	H	H	/	/	
T	<i>Betula occidentalis</i> (See <i>B. fontinalis</i>)								
T	<i>Betula pendula</i>	European white birch	H	H	H	H	/	/	
T	<i>Betula platyphylla</i> japonica	Japanese mountain birch	H	H	?	?	?	?	
P	<i>Bidens triplinervia</i>	tickseed	VL	?	?	?	?	?	
V	<i>Bignonia capreolata</i>	cross vine	M	?	?	?	?	?	
P	<i>Billbergia</i> spp.	queen's tears etc.	M	/	M	M	/	M	
T	<i>Bischofia javanica</i>	toog	/	/	M	?	/	/	
P	<i>Blechnum occidentale</i>	hammock fern	H	?	H	?	?	?	
P	<i>Blechnum penna-marina</i>	alpine water fern	?	?	?	?	?	?	
P	<i>Blechnum spicant</i>	deer fern	L	?	M	?	?	?	
P	<i>Bletilla striata</i>	hyacinth orchid	M	M	M	?	?	?	
P	<i>Bolax gummifera</i> (glebaria)	bolax/glebaria	M	?	?	?	?	?	
S	<i>Boronia</i> spp.	boronia	M	/	M	/	/	/	
P	<i>Bothriochloa barbinoides</i>	cane bluestem	L	?	?	?	?	?	
S Gc	<i>Bougainvillea</i> spp.	bougainvillea	L	L	L	L	/	M	
P	<i>Bouteloua curtipendula</i>	sideoats gramma	VL	L	?	?	?	?	
P	<i>Bouteloua gracilis</i>	blue gramma	L	L	?	?	M	?	
T	<i>Brachychiton acerifolius</i>	flame tree	L	/	L	M	/	/	
T	<i>Brachychiton discolor</i>	Queensland lace bark	M	/	L	M	/	/	
T	<i>Brachychiton X hybridus</i>	hybrid brachychiton	M	/	M	M	/	M	
T	<i>Brachychiton populneus</i>	bottle tree	L	L	L	L	M	M	
T	<i>Brachychiton rupestris</i>	Queensland bottle tree	/	/	L	L	/	M	
P	<i>Brachycome</i> spp.	Swan River daisy	M	M	M	M	M	M	
P	<i>Brachyglossis greyi</i> (Senecio greyi)	groundsel	L	?	M	?	?	?	
T	<i>Brahea armata</i>	blue hesper palm	L	L	L	L	L	L	
T	<i>Brahea brandegeei</i>	San Jose hesper palm	L	?	M	?	?	?	
T	<i>Brahea edulis</i>	Guadalupe palm	L	?	L	L	L	L	
	<i>Brassaia actinophylla</i> (See <i>Schefflera actinophylla</i>)								
	<i>Bravoa geminiflora</i> (See <i>Polyanthes geminiflora</i>)								
S	<i>Breynia nivosa</i> (distacha)	Hawaiian snow bush	?	?	H	H	/	/	
P	<i>Briza media</i>	quaking grass	L	?	M	M	M	M	⊗
P	<i>Brodiaea</i> spp.	brodiaea	VL	VL	L	L	/	/	

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			1	2	3	4	5	6	
S	Brugmansia spp.	angel's trumpet	M	/	M	H	/	/	
S	Brunfelsia pauciflora	yesterday today and tomorrow	M	M	M	H	/	H	
P	Brunnera macrophylla	Siberian bugloss	H	H	H	?	?	?	
S	Buddleja alternifolia	fountain butterfly bush	L	L	M	/	M	M	
S	Buddleja davidii	butterfly bush	L	L	M	M	M	M	
S	Buddleja marrubiifolia	woolly butterfly bush	?	L	?	L	/	L	
P	Bulbine frutescens	stalked bulbine	L	?	L	L	/	L	
P	Bulbinella robusta	bulbinella	L	?	?	?	?	?	
T	Bursera hindsiana	bursera	?	?	/	/	/	M	
T	Butia capitata	pindo palm	L	L	L	L	L	L	
S	Buxus microphylla japonica	Japanese boxwood	M	M	M	M	M	M	
S	Buxus sempervirens	English boxwood	M	M	M	/	M	M	
S	Caesalpinea cacalaco	cascalote	?	?	?	?	/	L	
S	Caesalpinea gilliesii	desert bird of paradise	L	L	L	L	M	M	
S	Caesalpinea mexicana	Mexican bird of paradise	?	/	?	L	/	L	
S	Caesalpinea platyloba		?	?	?	?	?	?	
S	Caesalpinea pulcherrima	dwarf poinciana	L	L	M	M	/	M	
P	Calamagrostis spp.	feather reed	L	?	M	M	?	?	
P	Calamintha spp.	calamint	M	M	?	?	?	?	
P	Calceolaria spp.	slipper flower/slipperwort	M	/	M	?	?	?	
S	Calliandra californica	Baja fairy duster	/	/	VL	L	/	L	
S	Calliandra emarginata	dwarf powderpuff	?	?	?	?	?	?	
S	Calliandra eriophylla	fairy duster	/	/	VL	VL	/	L	
S	Calliandra haematocephala	pink powder puff	/	/	M	M	/	H	
S	Calliandra tweedii	trinidad flame bush	/	/	M	M	/	M	
S	Callicarpa bodinieri	beauty berry	M	M	?	?	?	?	
S	Callicarpa dichotoma	lavender beautyberry	M	M	M	?	?	?	
S	Callicarpa japonica	beauty berry	M	M	?	M	/	/	
TS	Callistemon citrinus	bottle brush	L	L	L	L	/	M	
TS	Callistemon pinifolius	pine-leafed bottlebrush	?	?	L	L	?	?	
TS	Callistemon salignus	pink tips/white bottlebrush	L	M	M	?	/	?	
TS	Callistemon speciosus	Albany bottlebrush	?	?	M	?	/	M	
TS	Callistemon subulatus	callistemon (subulatus)	?	?	L	?	?	?	
TS	Callistemon viminalis	weeping bottle brush	L	L	M	M	/	M	
S	Calluna vulgaris	Scotch heather	M	M	/	/	/	/	
T	Calocedrus decurrens	incense cedar	M	M	M	M	M	/	
S	Calocephalus brownii	cushion bush	L	/	L	L	/	L	
T	Calodendrum capense	cape chestnut	L	/	M	M	/	/	
S	Calostemma purpureum	garland lily	M	?	?	?	?	?	
S	Calothamnus quadrifidus	net bush	L	?	M	?	/	?	
S	Calycanthus floridus	Carolina allspice	M	?	?	?	?	?	
S	Calycanthus occidentalis	western spice bush	L	L	M	M	/	/	
P	Calyophus drummondii	calyophus (drummondii)	M	?	?	?	?	M	
Gc	Calyophus hartwegii	Sierra sundrop	L	?	?	?	?	M	
S	Camellia japonica	camellia	M	M	M	H	/	H	
S	Camellia sasanqua	sasanqua camellia	M	M	M	M	/	H	
P	Camissonia cherianthifolia (Oenothera)	beach evening primrose	L	?	L	/	/	/	
Gc	Campanula poscharskyana	Serbian bell flower	M	M	M	M	/	M	
P	Campanula spp.	bell flower	M	M	M	M	/	M	
V	Campsis spp.	trumpet creeper	L	L	M	M	M	M	
P	Canna spp.	canna	M	M	M	H	M	M	
S	Cantua buxifolia	magic flower	M	/	M	?	?	?	
S	Capparis spinosa	caper bush	L	/	L	?	?	?	
P	Carex (garden spp.)	sedge	M	M	M	M	/	M	
Gc	Carissa macrocarpa (prost.cvs.)	Natal plum	L	/	M	M	/	M	
S	Carissa spp.	Natal plum	L	/	M	M	/	M	
P	Carlina acaulis	stemless carline thistle	?	?	?	?	?	?	
S	Carnegiea gigantea	saguaro	/	/	VL	L	/	L	
S	Carpenteria californica	bush anemone	L	L	L	M	/	/	
T	Carpinus betulus 'Fastigiata'	European hornbeam	M	M	/	/	/	/	

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			1	2	3	4	5	6
Gc	Carpobrotus spp.	ice plant (Carpobrotus)	L	M	VL	L	/	L
T	Carya illinoensis	pecan	L	M	M	M	M	M
S P	Caryopteris X clandonensis	blue mist	M	M	M	M	/	/
S P	Caryopteris incana	common bluebeard	?	?	?	M	?	?
T	Caryota mitis	clustered fishtail palm	/	/	M	/	/	/
T S	Caryota urens	fishtail wine palm	H	/	M	H	/	/
T	Casimiroa edulis	white sapote	M	/	M	M	/	/
	Cassia australis (See Senna australis)							
	Cassia artemesioides (See Senna artemesioides)							
	Cassia bicapsularis (C. candelleana) See Senna bicapsularis							
	Cassia didymobotria (See Senna didymobotria)							
S	Cassia eremophila (C.nemophila)	desert cassia	/	?	L	L	L	L
	Cassia goldmanii (See Senna polyantha)							
T	Cassia leptophylla	gold medallion tree	L	L	M	M	/	/
	Cassia lindheimeriana (See Senna lindheimeriana)							
	Cassia odorata (See Senna odorata)							
	Cassia phyllodenia (See Senna phyllodenia)							
	Cassia spectabilis (C.excelsa)							
	Cassia splendida (See Senna splendida)							
	Cassia sturtii (See Senna sturtii)							
S	Cassia tomentosa (See Senna multiglandulosa)							
S	Cassia wizlizeni	shrubby cassia	?	?	L	?	/	L
T	Castanopsis cuspidata	copper false chestnut	?	?	?	?	?	?
T	Castanospermum australe	Moreton Bay chestnut	L	/	M	M	/	/
T	Casuarina cunninghamiana	river she-oak	L	L	L	L	M	M
	Casuarina stricta (See Allocasuarina verticillata)							
T	Catalpa bungei	umbrella catalpa	L	?	?	?	?	?
T	Catalpa speciosa	western catalpa	L	M	M	M	M	M
P	Catananche caerulea	cupid's dart	M	L	M	?	?	?
P	Catharanthus roseus	Madagascar periwinkle	M	M	M	M	M	M
P	Cautleya spicata	cautleya	H	?	?	?	?	?
S Gc	Ceanothus spp.	California lilac	VL	L	VL	L	L	/
S Gc	Ceanothus cultivars	ceanothus	L	L	L	L	L	/
T	Cedrus atlantica	Atlas cedar	M	M	L	M	M	M
T	Cedrus deodora	deodar cedar	L	M	L	M	M	M
T	Cedrus libani	cedar of Lebanon	M	M	L	M	?	?
T	Celtis australis	European hackberry	L	M	/	/	M	M
T	Celtis occidentalis	common hackberry	L	L	/	M	M	M
T	Celtis reticulata	western hackberry	L	/	/	/	L	L
T	Celtis sinensis	Chinese hackberry	L	M	/	M	M	M
P	Centaurea cineraria	dusty miller (cineraria)	L	L	M	M	/	M
P	Centaurea dealbata	Persian knapweed	M	?	M	?	?	?
P	Centaurea gymnocarpa	velvet centaurea	L	L	M	M	/	M
P	Centaurea montana	perennial cornflower	L	?	?	?	?	?
P	Centaurea rupestris	centaurea (rupestris)	?	?	?	?	?	?
P	Centranthus ruber	red valerian	VL	VL	L	L	/	M
P	Centratherum punctatum	porcupine flower	?	?	M	?	?	?
S	Cephalocereus spp.	old man cactus	VL	/	VL	L	L	L
Gc	Cephalophyllum spp.	ice plant (Cephalophyllum)	L	L	L	L	/	L
Gc	Cerastium tomentosum	snow in summer	M	M	M	M	M	M
T	Ceratonia siliqua	carob	L	L	L	L	/	L

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TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
S	<i>Ceratostigma abyssinicum</i>	African plumbago	L	/	M	M	M	M	
S	<i>Ceratostigma griffithii</i>	Burmese plumbago	L	M	M	M	M	M	
Gc	<i>Ceratostigma plumbaginoides</i>	dwarf plumbago	L	M	M	M	M	M	
S	<i>Ceratostigma willmottianum</i>	Chinese plumbago	M	M	M	M	?	?	
T	<i>Cercidiphyllum japonicum</i>	Katsura tree	M	M	?	?	/	/	
T	<i>Cercidium floridum</i> (See <i>Parkinsonia florida</i>)								
T	<i>Cercidium microphyllum</i>	little leaf palo verde	/	VL	VL	L	/	L	
T	<i>Cercidium praecox</i>	Sonoran palo verde	/	L	VL	L	/	L	
T	<i>Cercidium 'Sonorae'</i>	Sonora cercidium	?	?	?	?	/	L	
T	<i>Cercis canadensis</i>	eastern redbud	M	M	M	M	/	/	
S	<i>Cercis chinensis</i>	Chinese redbud	M	M	?	?	?	?	
TS	<i>Cercis mexicana</i>	Mexican redbud	L	L	?	?	?	?	
TS	<i>Cercis occidentalis</i>	western redbud	VL	VL	L	L	/	/	
T	<i>Cercis reniformis</i>	southwest redbud	L	L	?	?	?	?	
TS	<i>Cercis siliquastrum</i>	Judas tree	M	M	?	?	?		
S	<i>Cercocarpus betuloides</i>	mountain ironwood	VL	VL	VL	VL	VL	/	
S	<i>Cercocarpus minutiflorus</i>	San Diego mountain mahogany	L	?	VL	VL	/	/	
S	<i>Cereus peruvianus</i>	Peruvian apple cactus	/	?	L	L	/	L	
SV	<i>Cestrum auranticum</i>	orange cestrum	M	/	M	M	?	?	
S	<i>Cestrum elegans</i>	red cestrum	M	/	M	M	/	M	
S	<i>Cestrum fasciculatum</i> var. ' <i>Newellii</i>	Newell cestrum	M	?	M	?	?	?	
S	<i>Cestrum nocturnum</i>	night jessamine	M	M	M	M	/	M	
S	<i>Chaenomeles cvs.</i>	flowering quince	L	L	M	M	L	M	
P	<i>Chaenorhinium glareosum</i>	dwarf snapdragon	M	?	?	?	?	?	
TS	<i>Chamaecyparis spp.</i>	false cypress	M	M	/	/	/	/	
SP	<i>Chamaedorea spp.</i>	chamaedorea	/	/	H	H	/	H	
Gc P	<i>Chamaemelum nobile</i>	chamomile	L	M	M	M	M	M	
TS	<i>Chamaerops humilis</i>	Mediterranean fan palm	L	L	M	M	M	M	
S	<i>Chamelaucium uncinatum</i>	Geraldton wax flower	L	L	L	M	/	M	
P	<i>Chasmanthe aethiopica</i>	chasmanthe	L	?	L	L	?	?	
P	<i>Chasmanthium latifolium</i>	sea oats	L	M	M	M	M	M	
P	<i>Cheilanthes lanosa</i>	hairy lip fern	M	?	?	?	?	?	
P	<i>Cheiranthus cheiri</i> (See <i>Erysimum cheiri</i>)								
T	<i>Chilopsis linearis</i>	desert willow	VL	VL	VL	L	M	M	
S	<i>Chimonanthus praecox</i>	wintersweet	?	?	M	?	?	?	
S	<i>Chimonobambusa marmorea</i> (Arundinarearea)	marbled bamboo	L	L	M	M	/	M	
T	<i>Chimonobambusa quadrangularis</i>	square-stemmed bamboo	L	L	M	M	/	M	
T	<i>Chionanthus retusus</i>	Chinese fringe tree	M	M	M	M	/	/	
T	<i>Chionanthus virginicus</i>	white fringe tree	M	/	?	?	?	?	
T	<i>X Chitalpa tashkentensis</i>	chitalpa	L	M	L	L	L	M	
S	<i>Choisya ternata</i>	Mexican orange	M	M	M	M	/	M	
P	<i>Chondropetalum tectorum</i>	cape reed	H	?	M	?	?	?	
T	<i>Chorisia insignis</i>	white floss silk tree	M	/	M	L	/	M	
T	<i>Chorisia speciosa</i>	floss silk tree	L	/	L	L	/	M	
S	<i>Chorizema cordata</i>	flame pea	M	?	?	?	?	?	
	Chrysanthemum frutescens (See <i>Argyranthemum frutescens</i>)								
	Chrysanthemum maximum (See <i>Leucanthemum X superbum</i>)								
	Chrysanthemum parthenium (See <i>Tanacetum parthenium</i>)								
P	<i>Chrysopsis villosa</i> (See <i>Heterotheca villosa</i>)								
S	<i>Chrysothamnus nauseosus albicaulis</i>	rabbit brush	/	/	?	?	VL	?	
P	<i>Chusquea coronalis</i>	bamboo	H	?	M	H	?	?	
P	<i>Cibotium glaucum</i>	Hawaiian tree fern	/	/	H	H	/	/	
T	<i>Cinnamomum camphora</i>	camphor tree	M	/	M	M	/	M	
V	<i>Cissus antarctica</i>	kangaroo treebine	L	M	M	M	/	M	

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			1	2	3	4	5	6	
V	<i>Cissus rhombifolia</i>	grape ivy	M	/	M	M	/	M	
V	<i>Cissus trifoliata</i>	treebine	?	/	?	?	?	L	
S Gc	<i>Cistus spp.</i>	rockrose	L	L	L	L	L	L	⊕
T S	<i>Citrus spp.</i>	orange, lemon etc.	M	M	M	M	/	M	
V	<i>Clematis armandii</i>	evergreen clematis	M	M	M	M	M	M	
V	<i>Clematis hybrids and cvs</i>	deciduous clematis	M	M	H	H	M	M	
S	<i>Clematis integrifolia</i>	bushy clematis	M	M	?	?	?	?	
V	<i>Clematis lasiantha</i>	pipestem clematis	L	L	VL	L	/	/	
V	<i>Clematis ligusticifolia</i>	western virgin's bower	M	?	?	L	/	/	
V	<i>Clematis pauciflora</i>	small flowered clematis	?	?	VL	L	?	?	
S	<i>Cleome isomeris</i>	bladder pod	VL	VL	VL	VL	L	L	
P	<i>Clerodendrum bungei</i>	cashmere bouquet	L	M	M	?	?	?	
T S	<i>Clerodendrum trichotomum</i>	harlequin glory bower	M	?	?	?	?	?	
S	<i>Clerodendrum ugandense</i>	butterfly bush	M	?	M	M	/	M	
T S	<i>Clethra alnifolia</i>	summersweet	M	/	?	?	?	?	
S	<i>Cleyera japonica</i>	sakaki	M	M	M	?	?	?	
S	<i>Clianthus puniceus</i>	parrot's beak	L	L	M	M	?	?	
P	<i>Clivia miniata</i>	Kaffir lily	M	M	L	M	/	M	
V	<i>Clytostoma callistigoides</i>	violet trumpet vine	M	M	M	M	/	M	
S	<i>Cneoridium dumosum</i>	bushrue	?	?	?	?	L	L	
V	<i>Cobaea scandens</i>	cup and saucer vine	M	M	?	?	?	?	
T S	<i>Coccoculus laurifolius</i>	laurel leaf coccoculus	M	M	M	M	/	M	
P	<i>Colchicum agrippium</i>	autumn crocus	VL	VL	M	M	M	M	
S	<i>Coleonema album</i>	white breath of heaven	M	M	M	M	/	/	
S	<i>Coleonema pulchrum</i>	breath of heaven	M	M	M	M	/	/	
S T	<i>Comarostaphylis diversifolia</i> (See <i>Archstaphylos diversifolia</i>)								
V	<i>Combretum fruticosum</i>	combretum	/	/	M	M	/	/	
S	<i>Convolvulus cneorum</i>	bush morning glory	L	L	L	L	L	L	
	<i>Convolvulus mauritanicus</i> (see C. Sasbatus)								
Gc P	<i>Convolvulus sabatius</i>	ground morning glory	L	L	L	L	M	M	
S Gc	<i>Coprosma X kirkii</i>	creeping coprosma	L	L	M	M	/	/	
	<i>Coprosma pumila</i> (See C. petriei)								
S Gc	<i>Coprosma petriei 'Verde vista'</i>	verde vista coprosma	L	L	M	M	/	/	
S	<i>Coprosma repens</i>	mirror plant	M	M	M	M	/	/	⊕
T S	<i>Cordia boissieri</i>	Texas olive	?	?	?	L	L	L	
S	<i>Cordia parvifolia</i>	little leaf cordia	?	?	L	L	/	L	
T	<i>Cordyline australis</i>	New Zealand cabbage tree	L	M	L	M	M	M	⊕
T S	<i>Cordyline indivisa</i>	blue dracaena palm	L	L	?	?	?	?	
S	<i>Cordyline stricta</i>	palm lily	/	M	M	M	/	M	
S	<i>Cordyline terminalis</i>	ti plant	M	/	M	/	/	/	
P	<i>Coreopsis auriculata 'Nana'</i>	dwarf coreopsis	L	L	L	L	M	M	
P	<i>Coreopsis gigantea</i>	giant coreopsis	?	?	VL	L	/	/	
P	<i>Coreopsis lanceolata</i>	coreopsis	L	L	L	L	M	M	
P	<i>Coreopsis maritima</i>	sea dahlia	L	?	VL	?	?	?	
P	<i>Coreopsis verticillata</i> cvs.	threadleaf coreopsis	L	L	L	L	M	M	
P	<i>Corethrodyncne californica</i>	black bush	?	?	/	/	VL	/	
T	<i>Cornus alba</i>	red-barked dogwood	M	M	?	?	/	/	
Gc	<i>Cornus canadensis</i>	bunchberry	M	M	?	?	/	/	
T	<i>Cornus capitata</i>	evergreen dogwood	M	M	M	?	/	/	
T	<i>Cornus 'Eddie's White Wonder'</i>	Eddie's white wonder dogwood	M	M	?	?	/	/	
T	<i>Cornus kousa</i>	Japanese dogwood	M	M	/	/	/	/	
T	<i>Cornus kousa chinensis</i>	Chinese dogwood	M	M	/	/	/	/	
T	<i>Cornus florida</i>	eastern dogwood	M	M	H	H	/	/	
T	<i>Cornus nuttallii</i>	western dogwood	M	M	/	M	/	/	
	<i>Cornus sericea</i> (See C. stolonifera)								
S	<i>Cornus stolonifera</i>	red osier dogwood	H	H	/	H	/	/	
S	<i>Corokia cotoneaster</i>	wire-netting bush	M	M	M	M	M	M	
S	<i>Corokia X virgata</i>	corokia	M	?	M	?	?	?	
S	<i>Correa spp.</i>	Australian fuchsia	L	L	L	L	/	M	

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			1	2	3	4	5	6	
S	Cortaderia sellowana cvs.	pampas grass	VL	L	L	L	L	L	⊗ ⊗
S T	Corylopsis spicata	winter hazel	M	?	?	?	/	/	
S	Corylus avellaneana contorta	Harry Lauder's walking stick	M	M	/	/	/	/	
S	Corylus cornuta californica	western hazelnut	L	?	/	/	/	/	
T S	Corylus maxima	filbert	L	/	/	/	/	/	
T	Corynocarpus laevigata	New Zealand laurel	M	/	H	/	/	/	
P	Cosmos atrosanguineus	chocolate cosmos	M	M	M	?	?	?	
T S	Cotinus coggygria	smoke tree	L	L	L	L	L	/	
T S	Cotinus obvatus	American smoke tree	L	?	?	?	?	?	
S	Cotoneaster spp. (shrubs)	cotoneaster	L	L	L	M	M	M	⊗ ⊗
Gc	Cotoneaster spp.(ground covers)	cotoneaster	M	M	M	M	M	M	
P	Cotula lineariloba	silver button plant	H	H	M	?	?	?	
P	Cotula 'Silver Mound'	cotula	H	H	?	?	?	?	
S P	Cotyledon spp.	cotyledon	L	L	L	L	/	L	
S	Coursetia axillaris	baby bonnets	?	?	?	?	?	L	
S	Cowania mexicana	cliff rose	L	/	/	L	L	L	
S P	Crassula spp.	crassula	L	L	L	L	/	L	
P	Craspedia globosa	drumsticks	M	M	M	M	?	?	
T	Crataegus spp.	hawthorn	M	M	/	M	M	/	⊗
T	Crinodendron hookerianum	lantern tree	?	?	?	?	?	?	
T	Crinodendron patagua	lily-of-the-valley tree	M	/	M	M	/	/	
P	Crinum spp.	crinum lily, spider lily	M	M	M	M	?	M	
P	Crocrosmia hybrids (Tritonia)	montbretia	L	L	L	L	/	L	
S	Crotalaria agatiflora	canary-bird bush	L	/	M	M	/	H	
T S	Cryptomeria japonica	Japanese cryptomeria	M	H	H	H	/	/	
T	Cupaniopsis anacardioides	carrotwood	M	/	M	M	/	/	
P	Cuphea hyssopifolia	false heather	M	M	M	M	/	/	
P	Cuphea ignea	cigar plant	M	M	M	M	/	/	
P Gc	Cuphea llavea	bat-faced cuphea	M	?	?	?	/	/	
S P	Cuphea micropetala	cuphea (micropetala)	?	?	M	?	/	/	
T	X Cupressocyparis leylandii	Leyland cypress	M	M	M	/	M	M	
T	Cupressus arizonica ssp. arizonica	Cuayamaca cypress	VL	VL	VL	L	L	L	
T	Cupressus arizonica var.glabra	smooth Arizona cypress	VL	VL	VL	L	L	L	
T	Cupressus goveniana	Gowen cypress	?	?	?	?	?	?	
T	Cupressus guadalupensis forbesii	tecate cypress	L	L	VL	VL	/	/	
T	Cupressus macrocarpa	Monterey cypress	M	M	M	/	/	/	⊗
T	Cupressus sempervirens	Italian cypress	L	M	L	L	M	M	
T	Cussonia paniculata	little cabbage tree	/	/	M	?	/		
S P	Cyathea cooperii	Australian tree fern	H	H	H	H	/	/	
S	Cycas revoluta	sago palm	M	M	M	M	M	M	
P	Cyclamen hederifolium	cyclamen	L	L	M	?	/	M	
P	Cyclamen persicum hybrids	florists' cyclamen	M	M	M	M	/	M	
Gc P	Cymbalaria muralis	Kenilworth ivy	M	M	H	H	/	/	
P	Cyperus albostriatus	dwarf umbrella plant							
P	Cyperis spp.	umbrella sedge/papyrus	H	H	H	H	H	H	
P	Cyrtanthus brachyscyphus	dobo lily	M	?	?	?	?	?	
P	Cyrtanthus purpureus	fire lily	M	?	?	?	?	?	
P	Cyrtomium falcatum	holly fern	M	M	H	M	/	M	
Gc	Cytisus X kewensis	Kew broom	M	M	/	/	M	/	
S	Cytisus spp.	broom (Cytisus)	L	L	/	M	/	/	⊗ ⊗
S	Daboecia cantabrica	Irish heath	M	?	?	?	/	/	
S	Dahlia imperialis	tree dahlia	M	M	M	M	/	?	
P	Dahlia spp.	dahlia	M	M	M	H	H	H	
T	Dalbergia sissoo	sissoo	/	/	/	/	/	M	
S	Dalea bicolor	dalea (bicolor)	/	/	L	L	/	M	
Gc	Dalea capitata	dalea (capitata)	/	/	?	?	M	M	
S	Dalea dorychnioides	dalea (dorychnioides)	?	?	?	?	?	?	
S	Dalea frutescens	black dalea	/	/	M	/	M	M	
P	Dalea gattingeri (Petalostemum purpureum)	purple prairie clover	?	?	?	?	?	?	
Gc	Dalea greggii	trailing indigo bush	?	/	L	L	L	L	

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			1	2	3	4	5	6	
S	Dalea lutea	dalea (lutea)	/	/	/	?	M	M	
Gc	Dalea orcutii	Baja indigo bush	/	/	L	L	/	L	
S	Dalea pulchra	indigo/pea bush	/	/	M	/	M	M	
T	Dalea spinosa (See Psorothamnus spinosa)								
S	Dalea versicolor	dalea (versicolor)	/	/	M	/	M	M	
P	Dalechampia dioscorifolia	purple wings	?	?	M	?	?	?	
S Gc	Dampiera diversifolia	dampiera	L	/	M	?	?	?	
P	Dampiera trigona	dampiera	L	/	M	?	?	?	
S	Daphne X burkwoodii	Burkwood daphne	M	M	?	?	?	?	
S	Daphne caucasica	daphne (caucasia)	M	?	M	?	?	?	
S	Daphne odora	winter daphne	M	M	M	M	/	/	
P	Darmera peltata	umbrella plant/Indian rhubarb	H	?	?	?	?	?	
S	Dasyliion spp.	desert spoon	VL	/	L	L	L	L	
P	Davallia trichomanoides	squirrel's foot fern	L	M	M	H	/	H	
Gc	Delosperma spp.	ice plant (Delosperma)	L	M	L	L	/	L	⊗
P	Delphinium spp.	delphinium	M	M	M	M	M	M	
T S	Dendriopoterium menendezii	dendriopoterium	?	?	M	?	/	?	
S	Dendromecon spp.	bush poppy	VL	L	VL	L	/	/	
P	Deschampsia caespitosa	tufted hairgrass	L	L	L	L	/	/	
S	Deutzia spp.	bridal wreath	M	M	/	M	M	/	
P	Dianella intermedia	Turutu	M	?	M	?	?	?	
P	Dianella tasmanica	blueberry	M	?	M	M	/	?	
P	Dianthus spp.	pink/carnation	M	M	M	M	M	M	
P	Diascia spp.	twinspur	M	M	M	M	/	/	
P	Dicentra spp.	bleeding heart	M	M	M	H	/	/	
P	Dichelostemma capitatum	wild hyacinth	L	L	M	?	?	?	
Gc	Dichondra argenta	silver dichondra	?	?	M	?	?	?	
Gc	Dichondra micrantha	dichondra	M	M	M	H	/	H	
P	Dichorisandra thyrsifolia	blue ginger	/	/	H	?	/	?	
P	Dichroa febrifuga	evergreen hydrangea	?	?	M	?	?	?	
S P	Dicksonia antarctica	Tasmanian tree fern	H	H	H	H	/	/	
P	Dicliptera suberecta	velvet honeysuckle	L	?	M	?	?	M	
P	Dictamnus spp.	burning bush/dittany	L	L	?	?	?	?	
P	Dierama spp.	fairy wand	M	M	M	?	?	?	
P	Dieteris bicolor	fortnight lily	L	L	M	M	/	M	
P	Dieteris iridioides	fortnight lily	L	L	M	M	/	M	
P	Dieteris vegeta (See D. iridioides)								
P	Digitalis lutea	hardy/straw foxglove	M	M	?	?	?	?	
P	Digitalis X mertonensis	foxglove	M	M	M	M	M	M	
S	Dioon spp.	Mexican cycad	/	/	M	M	M	M	
T	Diospyros kaki	Japanese persimmon	L	M	M	M	M	M	
	Diplacus (see Mimulus)								
V	Dipogon lignosus	Australian pea	H	?	?	?	?	?	
V	Distictis buccinatoria	blood red trumpet vine	M	M	M	M	/	M	
V	Distictis 'Rivers'	royal trumpet vine	M	M	M	M	/	M	
	Disygotheca elegantissima (see Schlefflera elegantissima)								
Gc	Dodonaea procumbens	hopseed bush (procumbens)	L	L	L	?	?	?	
S	Dodonaea viscosa	hopseed bush	L	L	L	M	/	M	
S	Dodonaea viscosa 'Purpurea'	purple hopseed bush	L	L	L	M	/	M	
V	Dolichos lablab	see Labab purpureus							
T S	Dombeya spp.	dombeya	/	/	M	M	/	/	
T	Dombeya cacuminum	strawberry snowball	/	/	M	M	/	/	
P	Doronicum orientale (D. caucasicum)	leopard's bane	M	?	M	?	?	?	
S	Doryanthes palmeri	spear lily	L	/	L	L	/	/	
S	Dorycnium hirsutum	hairy canary clover	/	?	L	?	?	?	
T	Dracaena draco	dragon tree	L	/	VL	L	/	/	
S	Drepanostachyum falcatum (Arundinaria)	blue bamboo	L	L	M	M	/	M	
S	Drepanostachyum hookerianum	bamboo	L	L	M	M	/	M	

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TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
T	Drimys lanceolata	pepper tree	M	?	?	?	?	?	
T	Drimys winteri	winter's bark	M	?	?	?	?	?	
Gc	Drosanthemum spp.	ice plant (Drosanthemum)	L	L	L	L	/	L	
P	Dryopteris arguta	sheild/wood fern	M	?	M	?	?	?	
P	Dryopteris dilatata	broad buckler fern	M	?	M	?	?	?	
P	Dryopteris erythrosora	wood fern	M	M	M	M	/	/	
P	Dryopteris felix-mas	male fern	M	?	?	?	?	?	
Gc	Duchesnea indica	Indian mock strawberry	M	M	M	M	/	M	⊕
P	Dudleya spp.	dudleya, live forever	L	L	VL	L	L	L	
S	Duranta erecta (D. repens)	sky flower	/	/	M	M	/	M	
S	Duranta stenostachya	Brazilian sky flower	/	/	M	M	/	/	
P	Dyckia spp.	dyckia	L	?	L	L	?	?	
P Gc	Dymondia margaretae	dymondia	L	L	L	L	/	/	
	Dyssodia acerosa	shrubby dogweed	?	?	?	?	?	L	
P	Dyssodia pentachaeta	golden fleece	?	M	?	?	M	M	
S P	Echeveria spp.	hens and chickens	L	L	L	L	/	M	
P	Echinacea spp.	cone flower	M	M	M	M	M	M	
S	Echinocactus spp.	barrel cactus	VL	VL	L	L	/	L	
	Note: Many Echinocactus spp. are now in other genera including Ferrocactus, Echinopsis, Parodia, Sclerocactus and others								
P	Echinops exaltus	globe thistle	M	M	M	?	?	M	
P	Echinopsis spp. (Trichocereus spp.)	torch cactus	L	L	L	L	L	L	
S P	Echium candicans (fastuosum)	pride of Madeira	L	L	L	L	/	M	⊕
S P	Echium pininana	pride of Teneriffe	L	L	?	?	?	?	
Bi	Echium 'Purple Tower'	purple tower echium	L	L	?	?	?	?	
Bi	Echium wildpretii	tower of jewels	L	L	M	M	/	/	
S	Edraianthus graminifolius	grassy bells	L	L	?	?	?	?	
T S	Elaeagnus angustifolia	Russian olive	L	L	L	L	M	M	⊕
S	Eleagnus X ebbingei	Ebbing's silverberry	L	L	?	?	M	M	
S	Elaeagnus pungens	silverberry	L	L	L	L	L	L	
T	Elaeocarpus decipiens	Japanese blueberry tree	M	?	M	?	?	?	
P	Elymus spp. (also see Leymus spp.)	wild rye	L	L	L	L	M	M	
P	Encelia californica	California encelia	/	/	VL	L	/	L	
S	Encelia farinosa	brittle bush	/	/	VL	L	L	L	
S	Enkianthus campanulatus	red-veined enkianthus	M	H	?	?	?	/	
S P	Ensete ventricosum	Abyssinian banana	H	H	H	H	/	H	
S	Epacris gunii	Australian heath	M	?	?	?	?	?	
P	Epidendrum reed stem hybrids	epidendrum	M	/	M	M	?	?	
P	Epilobium spp. (Zauchneria)	California fuchsia	L	L	VL	L	M	M	
Gc	Epimedium grandiflorum	bishop's hat	M	M	/	/	/	/	
P	Equisetum spp.	horsetail	H	H	H	H	H	H	
S	Eremophila glabra	emu bush	L	L	L	?	/	L	
S	Eremophila maculata	spotted emu bush	L	L	L	L	/	L	
S	Eremophila racemosa	Easter egg bush	?	?	L	L	?	?	
P	Erianthus ravennae	plume grass	?	?	?	?	?	?	
S Gc	Erica spp.	heath	M	M	M	/	/	/	⊕
S	Ericameria laricifolia (Haplopappus)	turpentine bush	/	/	/	/	L	L	
P	Erigeron divergens	native fleabane	?	?	?	?	?	?	
P	Erigeron formosissimus	fleabane	M	?	?	?	?	?	
P	Erigeron glaucus	beach aster	L	/	M	M	/	/	
P	Erigeron karvinskianus	fleabane	L	M	M	M	M	M	
P	Erigeron speciosus	Oregon fleabane	?	?	?	?	?	?	
S P	Eriogonum spp.	buckwheat	L	L	VL	L	L	L	
P	Eriophyllum confertiflorum	golden yarrow	L	?	VL	VL	/	/	
P	Eriophyllum lanatum	chalk buckwheat	L	?	?	?	?	?	
	Erodium chaemedryoides (See E. reichardii)								
P Gc	Erodium chrysanthum	cranessbill (chrysanthum)	L	M	M	M	M	M	
P	Erodium corsicum	heron's-bill	?	?	?	?	?	?	

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			1	2	3	4	5	6	
P	<i>Erodium reichardii</i>	alpine geranium	L	M	M	M	M	M	
P	<i>Eryngium pandanifolium</i>	sea holly	M	?	?	?	?	?	
P	<i>Eryngium variiifolium</i>	sea holly	M	?	?	?	?	?	
T	<i>Eryobotrya deflexa</i>	bronze loquat	M	M	M	M	/	M	
T	<i>Eryobotrya japonica</i>	loquat	L	L	M	M	/	M	
P	<i>Erysimum 'Bowles Mauve'</i>	Bowles mauve wallflower	L	L	M	M	?	?	
P	<i>Erysimum cheiri</i> (<i>Cherianthus cheiri</i>)	wallflower	M	M	M	M	M	M	
P	<i>Erysimum heliticum</i>	wallflower	M	?	?	?	?	?	
P	<i>Erysimum hyacinthoides</i>	Siberian wallflower	L	L	L	?	?	?	
P	<i>Erysimum 'Jubilee'</i>	jubilee wallflower	L	L	L	?	?	?	
P	<i>Erysimum linifolium</i>	wallflower	L	L	L	M	/	M	
P	<i>Erysimum menziesii</i>	wallflower	L	L	L	?	?	?	
P	<i>Erysimum pulchellum</i>	wallflower	L	L	L	?	?	?	
P	<i>Erysimum suffrutescens</i> (<i>concinnum</i>)	Pt. Reyes wallflower	L	L	?	?	?	?	
P	<i>Erysimum 'Wenlock Beauty'</i>	Wenlock beauty wallflower	?	?	L	?	?	?	
T	<i>Erythrina americana</i> (<i>E.coralloides</i>)	naked coral tree	/	/	L	L	/	/	
T	<i>Erythrina X bidwillii</i>	coral tree	L	L	L	L	/	/	
T	<i>Erythrina caffra</i>	Kaffir bloom coral tree	/	/	L	L	/	/	
T S	<i>Erythrina crista-galli</i>	cockspur coral tree	M	M	L	L	/	M	
T	<i>Erythrina falcata</i>	coral tree (falcata)	/	/	L	/	/	/	
T	<i>Erythrina humeana</i>	Natal coral tree	/	M	L	M	/	/	
T	<i>Erythrina X sykesii</i>	Sykes coral tree	/	/	L	L	/	/	
S	<i>Escallonia</i> spp.	escallonia	M	M	M	M	/	M	
P	<i>Eschscholzia californica</i>	California poppy	VL	VL	L	L	L		
S	<i>Espostoa lantana</i>	Peruvian old man cactus	?	?	L	L	L	L	
T	<i>Eucalyptus camaldulensis</i>	red gum	L	L	L	L	M	M	⊗
T	<i>Eucalyptus campaspe</i>	silver gimlet	?	L	M	?	/	M	
T	<i>Eucalyptus cinerea</i>	ash leaved gum, silver dollar tree	VL	L	L	M	?	?	
T	<i>Eucalyptus citriodora</i>	lemon scented gum	L	/	L	M	/	M	
T	<i>Eucalyptus cladocalyx</i>	sugar gum	L	/	L	L	/	/	
T	<i>Eucalyptus deglupta</i>	mindinao gum	/	/	M	M	/	/	
T	<i>Eucalyptus erythrocorys</i>	red cap gum	L	L	M	M	/	M	
T	<i>Eucalyptus ficifolia</i>	red flowering gum	L	/	M	M	/	/	
T	<i>Eucalyptus formanii</i>	Forman's mallee	?	?	L	?	?	L	
T	<i>Eucalyptus globulus</i>	blue gum	L	L	L	M	/	/	⊗ ⊗
T	<i>Eucalyptus grandis</i>	flooded/rose gum	M	M	M	M	/	/	
T	<i>Eucalyptus gunnii</i>	cider gum	L	L	L	L	?	?	
T	<i>Eucalyptus kruseana</i>	book-leaf mallee	VL	/	L	?	/	?	
T	<i>Eucalyptus largiflorens</i>	black box	?	?	?	?	?	?	
T	<i>Eucalyptus lehmannii</i>	bushy yate	L	L	L	L	/	/	
T	<i>Eucalyptus leucoxylon</i>	white ironbark	L	L	L	L	/	M	
T	<i>Eucalyptus loxophleba</i>	York gum	?	VL	?	VL	/	/	
T	<i>Eucalyptus macrandra</i>	long flowered marlock	VL	VL	VL	L	/	L	
T	<i>Eucalyptus maculata</i>	spotted gum	L	/	M	M	/	/	
T	<i>Eucalyptus microtheca</i>	coolibah	L	L	L	L	M	M	
T	<i>Eucalyptus nicholii</i>	Nichol's willow leaf peppermint	L	L	M	M	M	M	
T	<i>Eucalyptus polyanthemos</i>	silver dollar gum	L	L	L	L	M	M	
T	<i>Eucalyptus preissiana</i>	bell mallee	VL	/	L	?	/	?	
T	<i>Eucalyptus pulverulenta</i>	silver mountain gum	L	M	M	M	/	M	⊗
T	<i>Eucalyptus robusta</i>	swamp mahogany	L	L	L	L	/	/	
T	<i>Eucalyptus rudis</i>	flooded gum	L	L	L	L	M	M	
T	<i>Eucalyptus sargentii</i>	Salt River mallet	?	VL	?	L	/	L	
T	<i>Eucalyptus sideroxylon</i>	red iron bark	L	L	L	L	M	M	
T	<i>Eucalyptus spathulata</i>	swamp mallee	L	/	L	L	/	M	
T	<i>Eucalyptus torelliana</i>	cadaga	/	/	?	?	?	?	
T	<i>Eucalyptus torquata</i>	coral gum	L	L	L	M	/	M	
T	<i>Eucalyptus viminalis</i>	manna gum	L	L	L	M	/	M	
T	<i>Eucalyptus woodwardii</i>	lemon flowered gum	VL	?	L	?	?	L	
P	<i>Eucomis bicolor</i> hybrids	pineapple lily	M	?	?	?	?	?	
T	<i>Eucryphia glutinosa</i>	hardy eucryphia	M	?	?	?	?	?	

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			1	2	3	4	5	6	
T	<i>Eucryphia x intermedia</i>	eucryphia	M	M	?	?	?	?	
T	<i>Eucryphia lucida</i> (billardieri)	leatherwood	M	M	?	?	?	?	
S	<i>Euonymous alatus</i>	burning bush	M	M	?	?	?	?	
Gc	<i>Euonymus fortunei</i>	purple winter creeper	M	M	M	M	M	/	
V	<i>Euonymus fortunei</i> radicans	winter creeper	M	M	/	M	M	M	
S	<i>Euonymus japonicus</i>	evergreen euonymus	L	L	M	M	M	M	
S	<i>Euonymus kiautschovicus</i>	euonymus	L	?	?	?	?	?	
P	<i>Eupatorium</i> spp.	mistflower	M	?	M	?	M	M	
P	<i>Euphorbia characias</i>	euphorbia	L	L	L	L	?	?	
T S	<i>Euphorbia cotinifolia</i>	Carribean copper plant	/	/	M	/	/	/	
P	<i>Euphorbia cyparissias</i>	cypress spurge	L	?	?	?	?	?	
P	<i>Euphorbia dulcis</i>	euphorbia (dulcis)	M	?	?	?	?	?	
S	<i>Euphorbia lambii</i>	tree euphorbia	?	?	?	?	?	?	
S	<i>Euphorbia milii</i>	crown of thorns	/	L	L	L	/	L	
P	<i>Euphorbia myrsinites</i>	euphorbia	L	?	L	L	?	?	
P	<i>Euphorbia polychroma</i> (epithymoides)	cushion spurge	L	L	?	?	?	?	
S	<i>Euphorbia pulcherrima</i>	poinsettia	/	/	L	M	/	M	
S	<i>Euphorbia rigida</i>	euphorbia	/	L	VL	L	/	L	
P	<i>Euphorbia seguieriana</i> niciciana	euphorbia	?	?	?	?	?	?	
S	<i>Euphorbia tirucalli</i>	milk bush	/	/	VL	/	/	L	
S P	<i>Euryops pectinatus</i>	euryops/shrub daisy	L	L	L	L	M	M	
S P	<i>Euryops pectinatus</i> viridis	green euryops	M	M	M	M	M	M	
P	<i>Evolvulus pilosus</i> (nuttallianus)	evolvulus	?	?	M	M	/	?	
S	<i>Fabiana imbricana</i>	pichi	?	?	M	?	?	?	
T	<i>Fagus sylvatica</i>	European beech	M	H	/	/	/	/	
P	<i>Fallopia japonica</i>	Japanese knotweed	?	?	?	?	?	?	
S	<i>Fallugia paradoxa</i>	Apache plume	/	?	VL	VL	L	L	
P	<i>Farfugium japonicum</i> (Ligularia)	farfugium/ligularia	H	H	H	?	?	?	
	<i>Fargesia murielae</i>	see <i>Thamnochalamus spathaceus</i>							
S P	<i>Fargesia nitida</i> (See <i>Sinarundinaria nitida</i>)								
P	<i>Fascicularia pitcairnifolia</i>	fascicularia	?	?	L	?	?	?	
V	X <i>Fatshedera lizei</i>	tree ivy	M	M	M	H	/	H	
S	<i>Fatsia japonica</i>	Japanese aralia	M	M	M	M	/	H	
	<i>Feijoa sellowiana</i> (See <i>Acca sellowiana</i>)								
S	<i>Felicia amelloides</i>	blue marguerite	M	M	M	M	/	M	
S	<i>Felicia fruticosa</i>	shrub aster	L	L	L	M	/	M	
S	<i>Ferocactus</i> spp.	barrel cactus	VL	VL	VL	L	L	L	
P	<i>Festuca californica</i>	California fescue	L	M	M	M	M	M	
P	<i>Festuca cinerea</i>	fescue (cinerea)	L	?	M	?	?	?	
P	<i>Festuca idahoensis</i>	Idaho fescue	VL	L	?	?	?	?	
P	<i>Festuca muelleri</i>	Mueller's fescue	?	?	M	M	?	?	
P	<i>Festuca glauca</i>	blue fescue	L	L	M	M	M	M	
P Gc	<i>Festuca rubra</i>	creeping red fescue	L	/	H	H	/	/	
P	<i>Festuca tenuifolia</i>	fescue (tenuifolia)	M	?	?	?	?	?	
T	<i>Ficus auriculata</i>	Roxburgh fig	/	/	M	M	/	/	
T	<i>Ficus barteri</i>	banana-leaf fig	?	?	?	?	?	?	
T S	<i>Ficus benjamina</i>	weeping Chinese banyan	/	/	M	/	/	M	
T	<i>Ficus carica</i>	edible fig	M	M	M	M	M	M	⊕
T S	<i>Ficus elastica</i>	rubber plant	/	/	M	M	/	/	
T	<i>Ficus florida</i>	Florida fig	/	/	M	M	/	/	
T	<i>Ficus macrophylla</i>	Moreton Bay fig	/	/	M	M	/	/	
T	<i>Ficus microcarpa</i>	Indian laurel fig/ laurel fig	M	/	M	M	/	M	
T	<i>Ficus microcarpa</i> 'Green Gem'	green gem ficus	M	/	L	M	/	M	
T	<i>Ficus microphylla</i> (See <i>Ficus rubiginosa</i>)								
V	<i>Ficus pumila</i>	creeping fig	M	M	M	M	M	M	
T	<i>Ficus retusa</i> nitida (See <i>Ficus microcarpa</i>)								

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			1	2	3	4	5	6	
T	<i>Ficus rubiginosa</i>	rusty leaf fig	M	/	M	M	/	/	
	<i>Filipendula hexapetala</i>	see <i>Filipendula vulgaris</i>							
P	<i>Filipendula vulgaris</i>	Meadowsweet	H	?	?	?	?	?	
S	<i>Forestiera neomexicana</i>	desert olive	?	?	L	L	L	L	
S	<i>Forsythia X intermedia</i>	forsythia	L	L	M	M	M	M	
S	<i>Fothergilla gardenii</i>	dwarf fothergilla	M	M	?	?	?	?	
S	<i>Fouquieria splendens</i>	ocotillo	/	/	VL	L	L	L	
Gc	<i>Fragaria</i> spp.	strawberry	M	M	M	M	M	M	
P	<i>Francoa ramosa</i>	bridal wreath	M	M	M	M	/	/	
P	<i>Francoa sonchifolia</i>	bridal wreath	M	?	M	?	/	/	
T S	<i>Franklinia alatamaha</i> (<i>Gordonia altamaha</i>) franklin tree	franklin tree	M	/	/	/	/	/	
T	<i>Fraxinus americana</i>	white ash	M	M	/	/	/	/	
T	<i>Fraxinus griffithi</i>	Griffith ash	?	?	?	?	?	?	
T	<i>Fraxinus latifolia</i>	Oregon ash	M	M	/	/	/	/	
T	<i>Fraxinus 'Moraine'</i>	moraine ash	M	M	/	/	M	M	
T	<i>Fraxinus oxycarpa</i> 'Raywood'	raywood ash	M	M	M	M	M	/	
T	<i>Fraxinus pennsylvanica</i> 'Marshal'	green ash	M	M	/	/	M	/	
T	<i>Fraxinus uhdei</i>	evergreen ash	M	M	M	M	H	H	
T	<i>Fraxinus velutina</i>	Arizona ash	M	M	M	M	M	M	
T	<i>Fraxinus velutina</i> 'Modesto'	Modesto ash	M	M	M	M	M	M	
S	<i>Fremontodendron</i> spp.	flannel bush	VL	VL	VL	L	/	/	
P	<i>Fuchsia</i> spp.	fuchsia	M	M	H	H	/	/	
S	<i>Furcraea</i> spp.	furcraea	L	/	/	L	L	?	
P	<i>Gaillardia grandiflora</i>	blanket flower	L	L	M	M	M	M	
P	<i>Galium odoratum</i>	sweet woodruff	M	M	H	/	/	/	
P	<i>Galtonia candicans</i>	summer hyacinth	?	?	?	?	?	?	
S	<i>Galvesia juncea</i>	Baja bush-snapdragon	/	/	VL	L	/	M	
S	<i>Galvesia speciosa</i>	island bush snapdragon	L	L	VL	L	?	M	
S	<i>Gamolepis chrysanthemumoides</i>	gamolepis	M	M	M	M	/	H	
S	<i>Gardenia</i> spp.	gardenia	M	M	M	M	/	M	
S	<i>Garrya elliptica</i>	coast silktassel	L	L	L	M	/	/	
S	<i>Garrya flavescens</i>	ashy silktassel	/	?	L	L	/	/	
S	<i>Garrya fremontii</i>	Fremont silktassel	L	L	VL	/	/	/	
P	<i>Gasteria</i> spp.	mother-in-law's tongue etc.	L	L	L	L	/	?	
S	<i>Gaultheria mucronata</i> (<i>Pernettya mucronata</i>)	prickly heath	M	?	?	?	?	?	
Gc	<i>Gaultheria procumbens</i>	creeping wintergreen	M	M	/	/	/	/	
S	<i>Gaultheria shallon</i>	salal	M	M	/	H	/	/	
P	<i>Gaura lindheimeri</i>	gaura	M	M	M	M	M	M	
Gc	<i>Gazania</i> spp.	gazania	M	M	M	M	M	M	
T	<i>Geijera parviflora</i>	Australian willow	M	M	L	M	M	M	
V	<i>Gelsemium rankinii</i>	swamp jessamine	?	?	?	?	?	?	
V	<i>Gelsemium sempervirens</i>	Carolina jessamine	L	L	M	M	/	M	
Gc	<i>Genista lydia</i>	Lydia woadwaxen	M	?	M	?	/	/	
Gc	<i>Genista pilosa</i> (Vancouver Gold)	Vancouver gold genista	M	M	/	M	?	M	
S	<i>Genista</i> spp.	broom (Genista)	L	L	M	M	/	M	⊗ ⊗
P	<i>Gentiana scabra</i> procumbens	gentian	H	?	?	?	?	?	
P	<i>Geranium</i> spp.	cranesbill	M	M	M	M	M	M	
P	<i>Gerbera jamesonii</i>	Transvaal daisy	M	M	M	M	/	M	
P	<i>Geum</i> spp.	avens	M	M	M	M	M	/	
T	<i>Ginkgo biloba</i>	maiden hair tree	M	M	M	M	M	?	
P	<i>Gladiolus</i> spp.	gladiolus	L	L	L	L	/	/	
P	<i>Gladiolus</i> hybrids & selections	gladiolus	M	M	M	M	/	/	
P Gc	<i>Glechoma hederaceae</i>	ground ivy	L	M	M	H	/	/	
T	<i>Gleditsia triacanthos</i>	honey locust	L	L	M	L	L	L	
P	<i>Globularia cordifolia</i>	creeping globe daisy	L	?	?	?	?	?	
P	<i>Globularia X indubia</i>	globe daisy	M	?	?	?	?	?	
P	<i>Goniolimon incanum</i> (<i>Limonium speciosum</i>)	statice	L	L	L	M	/	M	

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TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
P	Goniolimon tataricum (Limonum tataricum)	Tartarian statice	L	?	M	?	?	?	
T	Gordonia axillaris	gordonia	H	?	?	?	?	?	
T	Gordonia lasianthus	lob lolly bay	M	?	H	?	?	?	
S	Graptopetalum spp.	graptopetalum	VL	L	L	L	/	M	
S	Grevillea spp.	grevillea	L	L	L	L	/	M	
T	Grevillea robusta	silk oak	L	L	L	M	/	M	
S	Grewia occidentalis	lavender star flower	M	M	M	M	/	M	
P	Grindelia camporum	gum plant	?	?	L	?	?	?	
S	Griselinia littoralis	kapuka	M	/	M	/	/	/	
S	Griselinia lucida	puka	M	/	M	/	/	/	
P	Gunnera magellanica	gunnera	H	/	H	H	/	/	
S	Gutierrezia sarothrae	snakeweed	?	?	/	/	L	L	
P	Gypsophila cerastioides	baby's breath	?	L	M	M	/	/	
P	Gypsophila paniculata	baby's breath	L	L	M	M	/	M	
P	Gypsophila repens	creeping baby's breath	M	M	M	M	/	/	
	Habranthus andersonii (See H. tubispathus)								/
P	Habranthus robustus (Zephranthes)	pampas lily	M	M	M	M	/	M	
	Habranthus texanus (See H. tubispathus)								
P	Habranthus tubispathus	habranthus	M	M	M	M	/	/	
S	Hakea laurina	sea urchin tree	L	L	L	L	/	/	
S	Hakea suaveolens	sweet hakea	L	L	L	L	/	/	
P	Hakonechloa macra	hakone grass	M	M	?	?	?	?	
S	X Halmiocistus B866sahucci	halmiocistus	L	?	L	L	?	?	
S	X Halmiocistus wintonensis	halmiocistus	L	?	L	L	?	?	
S	Halimium lasianthum	sun rose	L	L	L	?	?	?	
S	Hamamelis virginiana	common witch hazel	M	M	/	/	/	/	
S	Hamelia patens	Texas firecracker bush	?	?	?	?	?	/	M
V S	Hardenbergia comptoniana	western Australia coral pea	M	M	M	M	/	M	
V S	Hardenbergia violacea	lilac vine	M	M	M	M	/	M	
T	Harpephyllum caffrum	Kaffir plum	M	/	M	M	/	/	
T	Harpullia arborea	tulipwood	/	/	M	/	/	/	
P	Haworthia spp.	haworthia	L	L	L	L	/	L	
S	Hebe spp.	hebe	M	M	M	M	/	/	
GC V	Hedera canariensis	Algerian ivy	M	M	M	M	M	M	⊗
GC V	Hedera helix	English ivy	M	M	M	M	M	M	⊗ ⊗
Gc V	Hedera nepalensis	Himalayan ivy	M	?	?	?	?	?	
P	Hedychium coccinum	red ginger lily	/	/	H	H	/	H	
P	Hedychium coronarium	white ginger lily	M	/	H	H	/	H	
P	Hedychium flavescens	yellow ginger	L	?	H	H	/	H	
P	Hedychium garnerianum	Kahili ginger	M	/	H	H	/	H	
P	Hedychium greenei	red ginger	/	/	H	H	/	H	
P	Helenium bigelovii	Bigelow sneezeweed	L	L	?	?	?	?	
P	Helenium hoopesii	orange sneezeweed	L	L	?	?	?	?	
S	Helianthemum appenium	white rock rose	?	?	?	?	?	?	
P	Helianthemum nummularium	helianthemum	L	L	L	L	/	/	
P	Helianthus angustifolius	swamp sunflower	H	?	?	?	?	?	
P	Helianthus maximiliani	Maximilian sunflower	M	L	?	?	?	?	
P	Helichrysum bracteatum	straw flower	?	L	M	M	?	?	
P	Helichrysum petiolare	licorice plant	?	M	M	M	?	?	⊗
S	Helichrysum rosemarinifolium (See Ozothamnus roasemarinifolius)								
P	Helictotrichon sempervirens	blue oat grass	L	L	M	M	M	M	
P	Heliopsis helianthoides scabra	golden sunflower	H	?	?	?	?	?	
P	Heliotropum arborescens	common heliotrope	M	M	M	M	?	M	
P	Helleborus spp.	Christmas/Lenten rose	M	M	M	M	/	/	
P	Hemerocallis spp.	day lily	M	M	M	M	M	M	
Gc	Hernaria glabra	green carpet	H	M	M	M	/	/	
S	Hesperaloe funifera	Coahuilan hesperaloe	/	/	VL	L	L	L	

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TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
S	Hesperaloe parviflora	red/ yellow yucca	/	/	VL	L	L	L	
S	Hesperantha spp.	hesperantha	L	?	?	L	?	?	
S	Heterocentron elegans	Spanish shawl	/	/	?	?	?	?	
S	Heteromeles arbutifolia	toyon	VL	VL	L	L	/	/	
P	Heterotheca villosa (chrysopsis villosa)	hairy golden aster	L	?	?	?	?	?	
P	Heuchera maxima	island alum root	M	/	M	M	/	/	
P	Heuchera micrantha	alum root	M	M	M	M	M	M	
P	Heuchera sanguinea	coral bells	M	M	M	M	M	M	
P	X Heucherella tiarellaoides 'Bridget Bloom'	Bridget bloom heucherella	H	H	M	?	?	?	
P	Hibanebambusa tranquillans	inyouchikuzoku	H	?	?	?	?	?	
S	Hibbertia aspera	hibbertia (aspera)	M	/	?	?	?	?	
S	Hibbertia cuneiformis	cut leaf Guinea flower	M	M	M	?	/	M	
S Gc	Hibbertia pedunculata	hibbertia (pedunculata)	M	/	?	?			M
V	Hibbertia scandens	Guinea gold vine	M	M	M	M	/	M	
S	Hibbertia vestita	hibbertia (vestita)	M	/	?	?	?	?	
P	Hibiscus moscheutos	mallow rose	M	M	M	?	?	?	
S	Hibiscus mutabilis	confederate rose	M	M	?	M	?	?	
S	Hibiscus rosa-sinensis	Chinese hibiscus	M	M	M	M	/	H	
S	Hibiscus syriacus	rose of Sharon	L	M	M	M	M	M	
P	Hibiscus trionum	flower-of-an-hour	M	?	?	?	?	?	
P	Hippeastrum spp.	amaryllis	M	M	M	M	?	?	
P	Hippolytia herderi (Tanacetum herderi)	hippolytia	?	?	?	?	?	?	
S	Holodiscus discolor	sea foam	L	?	M	M	/	/	
P	Homeria spp.	cape tulip	?	?	M	M	?	?	
	Homoglossum watsonium (See Gladiolus spp.)								
P	Hosta spp.	plantain lily	M	M	/	/	/	/	
P	Houttuynia cordata 'Chameleon'	chameleon houttuynia	M	M	M	?	?	?	
S	Howea forsteriana	Kentia palm	/	/	M	M	/	/	
P	Hunnemannia fumarifolia	Mexican tulip poppy	L	L	M	M	?	?	
S V	Hydrangea anomala petiolaris	climbing hydrangea	M	H	/	H	/	/	
S	Hydrangea arborescens	snowball hydrangea	M	H	?	?	?	?	
S	Hydrangea aspera villosa	lacecap hydrangea	M	H	?	?	?	?	
S	Hydrangea macrophylla	hydrangea	M	H	M	H	H	H	
S	Hydrangea paniculata 'Grandiflora'	peegee hydrangea	M	?	M	?	?	?	
S	Hydrangea quercifolia	oakleaf hydrangea	M	?	M	M	H	H	
S	Hydrangea serrata	blue bird hydrangea	H	?	?	?	?	?	
S	Hymenoclea monogyna	cheese bush	?	?	?	?	VL	VL	
T	Hymenosporum flavum	sweet shade	M	/	M	M	/	/	
	Hymenoxyx acaulis (See Tetraneuris acaulis)								
S	Hypericum beanii	Henry St. John's wort	M	M	M	M	M	/	
Gc	Hypericum calycinum	Aaron's beard	M	M	M	M	M	/	
S Gc	Hypericum empetrifolium nanum	hypericim (e nanum)	M	?	?	?	?	/	
S P	Hypericum frondosum	hypericum (frondosum)	M	?	?	?	?	/	
S	Hypericum 'Hidecote'	St.Johnswort	M	M	M	M	M	/	
S	Hypericum X inodorum 'Albury Purple'	Albury purple hypericum	M	?	?	?	?	/	
P	Hypericum kelleri	Keller hypericum	M	?	?	?	?	/	
S P	Hypericum X moseranum	gold flower	M	M	M	M	M	/	
S	Hypericum olympicum	olympic hypericum	L	?	?	?	?	/	
S	Hypericum 'Rowallane'	Rowall hypericum	M	?	?	?	?	/	
P S	Hypoestes aristata	ribbon bush	?	?	M	?	?	?	
P	Hyptis emoryi	desert lavender	?	?	?	?	/	L	
P	Iberis gibraltarica	Gibraltar candytuft	M	?	?	?	?	?	
P	Iberis sempervirens	evergreen candy tuft	M	M	M	M	M	M	
S	Ilex X altaclarensis 'Wilsonii'	Wilson holly	M	M	M	M	M	M	
S	Ilex aquifolium	English holly	L	M	M	M	M	M	⊗
S	Ilex cornuta 'Burfordii'	Burford holly	L	M	M	M	M	M	

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			1	2	3	4	5	6	
S	<i>Ilex crenata</i>	box-leaved holly	M	?	M	M	?	?	
S	<i>Ilex dimorphophylla</i>	Okinawan holly	M	M	M	M	/	?	
P	<i>Ilex integra</i>	Nepal holly	?	?	?	?	?	?	
S	<i>Ilex X meserveae</i>	blue boy/girl etc. cvs.	M	M	M	M	/	?	
S	<i>Ilex verticillata</i>	winterberry	?	?	?	?	?	?	
S	<i>Ilex vomitoria</i>	yaupon	L	M	L	L	M	M	
P	<i>Illicium floridanum 'Alba'</i>	white Florida anise-tree	M	?	?	?	?	?	
P S	<i>Impatiens sodeni (oliveri)</i>	poor man's rhododendron	M	/	H	/	/	/	
S	<i>Impatiens uguensis</i>	impatiens (uguensis)	H	?	H	?	?	?	
P	<i>Imperata cylindrica 'Rubra'</i>	Japanese blood grass	H	H	M	M	?	M	⊗
S	<i>Indigofera decora (incarnata)</i>	Chinese indigo	M	?	?	?	?	?	
P	<i>Inula ensifolia</i>	inula	M	?	?	?	?	?	
S	<i>Lochroma cyanea</i>	violet tubeflower	M	?	M	M	/	/	
S	<i>Lochroma fuchsioides</i>	red tubeflower	M	?	M	M	?	?	
P	<i>Ipheion uniflorum (Tritelia)</i>	spring star flower	L	L	L	?	?	?	
V	<i>Ipomea indica (acuminata)</i>	blue dawn flower	L	M	L	M	/	M	
P	<i>Ipomopsis rubra</i>	standing cypress	L	?	?	?	?	?	
P	<i>Iris spp.</i>	Douglas iris hybrids	L	L	M	M	H	/	
P	<i>Iris spp.</i>	bearded iris	L	L	M	M	M	M	
P	<i>Iris spp.</i>	Siberian iris	M	M	H	?	?	?	
P	<i>Iris spp.</i>	Japanese iris	H	H	H	H	/	/	
P	<i>Iris spp.</i>	Spanish/Dutch iris	M	M	M	M	M	M	
S	<i>Isocoma spp. (Haplopappus)</i>	goldenbush	?	?	VL	VL	VL	VL	
P	<i>Isolepis cernua (Scirpus cernuus)</i>	low bull rush	H	H	H	H	H	H	
P S	<i>Isoplexis chalcantha</i>	isoplexis	L	?	?	?	?	?	
S	<i>Isopogon formosus</i>	rose cone flower/drumsticks	L	?	?	?	?	?	
S	<i>Itea ilicifolia</i>	holly sweetspire	M	M	M	M	?	?	
Gc	<i>Iva hayesiana</i>	poverty weed	VL	VL	VL	L	/	/	
P	<i>Ixia spp.</i>	African corn lily	L	I	M	M	?	?	
S	<i>Ixora coccinea</i>	jungle geranium	?	?	M	?	/	?	
T	<i>Jacaranda mimosifolia</i>	jacaranda	M	M	M	M	/	M	
S V	<i>Jasminum angulare</i>	South African jasmine	?	/	M	?	?	?	
S V	<i>Jasminum azoricum</i>	lemon scented jasmine	M	?	M	?	?	?	
S V	<i>Jasminum beesianum</i>	jasmine (beesianum)	M	?	?	?	?	?	
S	<i>Jasminum floridum</i>	showy jasmine	L	M	M	M	/	M	
	<i>Jasminum grandiflorum</i>	see <i>J officinale f.grandiflorum</i>							
S	<i>Jasminum humile</i>	Italian jasmine	L	M	M	M	/	M	
V	<i>Jasminum leratii</i>	jasmine (leratii)	M	?	M	M	/	/	
S	<i>Jasminum mesnyi</i>	primrose jasmine	L	M	M	M	/	M	
S	<i>Jasminum nitidum</i>	angel wing jasmine	L	M	M	M	/	M	
S	<i>Jasminum nudiflorum</i>	winter jasmine	L	L	?	?	?	?	
S	<i>Jasminum officinale f. grandiflorum</i>	common jasmine	L	L	M	M	?	?	
S	<i>Jasminum parkeri</i>	dwarf jasmine	L	L	M	?	?	?	
V	<i>Jasminum polyanthum</i>	pink jasmine	M	M	M	M	/	M	
SV	<i>Jasminum sambac</i>	Arabian jasmine	M	?	M	?	?	M	
V	<i>Jasminum X stephanense</i>	Stephan jasmine	M	?	?	?	?	?	
T	<i>Jatropha integerrima</i>	spicy jatropha	?	?	L	?	?	L	
T	<i>Jubaea chilensis</i>	Chilean wine palm	L	M	L	M	/	/	
T	<i>Juglans californica</i>	S. California black walnut	M	/	L	L	/	/	
T	<i>Juglans hindsii</i>	California black walnut	M	M	/	L	/	/	
T	<i>Juglans major</i>	Arizona walnut	?	?	?	?	?	M	
T	<i>Juglans nigra</i>	eastern black walnut	M	M	/	/	/	/	
T	<i>Juglans regia</i>	English walnut	M	M	M	M	/	/	
P	<i>Juncus spp.</i>	rush	H	H	M	M	?	?	⊗
P	<i>Juniperus californica</i>	California juniper	L	L	L	L	L	L	
T	<i>Juniperus scopulorum 'Tolleson'</i>	Tolleson's juniper	L	L	M	M	M	M	
T	<i>Juniperus spp.</i>	juniper	L	L	L	M	M	M	
S	<i>Justicia aurea</i>	yellow plume flower	?	?	H	H	?	?	
S	<i>Justicia brandegeana</i>	shrimp plant	M	M	M	M	/	M	
S	<i>Justicia californica</i>	chuparosa	M	/	VL	L	L	M	
S	<i>Justicia candicans</i>	red justicia	?	?	?	?	?	?	

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			1	2	3	4	5	6	
S	Justicia carnea	Brazilian plume flower	M	H	H	H	/	H	
P	Justicia leonardii	justicia (leonardii)	?	?	?	?	?	?	
S	Justicia sonorensis	Sonoran justicia	?	?	?	?	?	L	
S	Justicia spicigera	Mexican honeysuckle	/	?	L	L	/	L	
P	Kalanchoe spp.	kalanchoe	L	L	L	L	/	M	
Gc P	Keckiella antirrhinoides	yellow penstemmon	?	?	L	L	/	/	
Gc P	Keckiella cordifolia	heart-leaved penstemmon	?	?	VL	L	/	/	
V	Kennedia nigricans	black coral pea	L	?	?	?	?	?	
V	Kennedia rubicunda	dusky coral pea	L	?	?	?	?	?	
S	Kerria japonica	Japanese rose	M	M	?	M	M	?	
P	Kirengeshoma koreana	yellow waxbells	H	?	?	?	?	?	
P	Kirengeshoma palmata	yellow waxbells	H	?	?	?	?	?	
P	Kniphofia triangularis (galpinii)	coral poker	M	M	L	L	/	M	
P	Kniphofia uvaria	red hot poker	M	M	L	L	/	M	
P	Koelaria glauca	blue hair grass	M	?	M	M	M	?	
T	Koelreuteria bipinnata	Chinese flame tree	M	M	M	M	/	M	
T	Koelreuteria elegans	Chinese flame tree	M	M	M	M	/	M	
T	Koelreuteria paniculata	golden rain tree	M	M	L	L	M	M	
S	Kolkwitzia amabilis	beauty bush	L	M	M	M	M	/	
S	Kunzea spp.	kunzea	L	/	M	?	?	?	
V	Lablab purpureus (Dolichos lablab)	hyacinth bean	M	M	M	?	?	?	
T	Laburnum X watereri	golden chain tree	M	M	/	/	/	/	
P	Lachenalia spp.	cowslip	L	L	?	?	?	?	
TS	Lagerstroemia X faureei	crape myrtle	L	L	M	M	M	M	
TS	Lagerstroemia indica	crape myrtle	L	L	M	M	M	M	
T	Lagunaria patersonii	primrose tree	L	/	L	L	/	/	
S	Lambertia intermis	lambertia	L	?	?	?	?	?	
P Gc	Lamiastrum galeobdolon	yellow archangel	M	M	M	?	?	?	
Gc	Lamium maculatum	spotted deadnettle	M	M	M	?	?	?	
Gc	Lampranthus spp.	ice plant (Lampranthus)	L	L	L	L	/	L	
S	Lantana camara	lantana	L	L	L	L	/	M	
S Gc	Lantana montevidensis (sellowiana)	trailing lantana	L	L	L	L	/	M	
T	Larix decidua	European larch	M	/	/	/	/	/	
P	Larrea tridentata	creosote	VL	VL	VL	L	L	L	
P Gc	Laurentia fluvialis	blue star creeper	M	M	M	M	?	M	
TS	Laurus nobilis	sweet bay	L	L	L	L	M	M	
T	Laurus 'Saratoga'	Saratoga laurel	L	L	L	L	M	M	
S	Lavandula spp.	lavender	L	L	L	L	M	M	
S	Lavatera assurgentiflora	tree mallow	L	M	L	L	/	M	
S	Lavatera hybrids	lavatera	L	L	M	M	?	?	
S	Lavatera maritima	bush mallow	L	L	M	M	?	?	
S	Lechenaultia formosa orange		L	?	?	?	?	?	
	Lemaireocereus thurberi (See Stenocereus thurberi)								
S	Leonotis leonurus	lion's tail	L	L	L	L	M	M	
P	Leontopodium alpinum	eidelweiss	M	M	?	?	?	?	
S	Lepechinia hastata	Mexican pitcher sage	L	?	M	?	?	?	
TS	Leptospermum laevigatum	Australian tea tree	L	L	L	L	/	/	
TS	Leptospermum petersonii	lemon scented tea tree	L	?	M	M	/	/	
TS	Leptospermum polygalifolium	tea tree	?	?	?	?	/	/	
T	Leptospermum rotundifolium	tea tree	L	L	?	L	/	/	
S Gc	Leptospermum rupestre (humifusum)	tea tree	L	?	?	?	/	/	
TS	Leptospermum scoparium	New Zealand tea tree	M	M	M	M	/	/	
T	Leucadendron argenteum	Silver tree	L	/	L	/	/	/	
T	Leucadendron galpinii	Galpin's leucadendron	?	/	?	?	?	?	
T	Leucadendron hybrids	hybrid leucadendron	L	?	?	?	?	?	
P	Leucanthemum X superbum	Shasta daisy	M	M	M	M	M	M	
P	Leucojum aestivum	summer snowflake	?	L	M	M	?	?	
S	Leucophyllum spp.	purple sage, Texas ranger etc.	L	L	L	L	L	L	
S	Leucospermum cordifolium	nodding pincushion	/	/	L	/	/	/	
S	Leucothoe fontanesiana	drooping laurel	M	?	?	?	?	?	

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			1	2	3	4	5	6	
P	Lewisia columbiana rupicola	columbia lewisia	L	/	?	?	?	?	
P	Lewisia cotyledon	bitter root	L	/	?	?	?	?	
P	Lewisia hybrids	lewisia	L	/	?	?	?	?	
P	Leymus spp. (also see Elymus spp.)	wild rye	VL	VL	M	M	?	?	
P	Liatris spicata	gay feather	M	M	M	M	M	M	
P	Libertia spp.	libertia	L	?	M	?	?	?	
P	Ligularia tussilaginea (See Farfugium japonicum)								
S	Ligustrum japonicum	Japanese privet	M	M	M	M	M	M	
T	Ligustrum lucidum	glossy privet	L	L	M	M	M	M	⊗
S	Ligustrum ovalifolium	California privet	L	L	M	M	?	?	
S	Ligustrum X vicaryi	golden privet	L	L	M	M	?	?	
P	Lilium (garden hybrids)	lily	M	M	M	M	M	M	
P	Limonium commune var. californicum	coastal statice	L	L	L	M	/	/	
P	Limonium perezii	statice	L	L	L	M	/	M	⊗
P	Limonium speciosum (See Gonolemon incanum)								
P	Limonium tataricum (See Gonolemon tataricum)								
P	Linaria purpurea	toadflax	L	M	L	M	M	M	
P	Linaria supina	toadflax	?	?	?	?	?	?	
P	Linum spp.	flax	VL	VL	M	?	M	M	
T	Liquidambar styraciflua	sweet gum	M	M	M	M	M	/	
T	Liriodendron tulipifera	tulip tree	M	H	M	H	/	/	
P	Liriopae spp.	lilyturf	M	M	M	M	M	M	
T	Lithocarpus densiflorus	tanbark oak	L	/	L	L	/	/	
T	Lithocarpus edulis (Pasania edulis)	Japanese false oak							
P	Lithodora diffusa	heavenly blue	M	M	/	/	/	/	
T	Livistona australis	Australia fountain palm	/	/	M	M	/	/	
T	Livistona chinensis	Chinese fan palm	?	/	M	M	/	/	
T	Livistona mariae	central Australian fan palm	/	/	?	?	?	?	
T	Livistona rigida	livistona (rigida)	/	/	?	?	?	?	
P	Lobelia 'Brightness'	brightness lobelia	H	H	H	?	?	?	
P	Lobelia chinensis	lobelia (chinensis)	H	?	?	?	?	?	
P	Lobelia fulgens	Mexican cardinal flower	H	H	H	?	?	?	
S P	Lobelia laxiflora	Mexican bush lobelia	?	?	VL	VL	?	M	
S	Lobelia ricardii	lobelia (ricardii)	?	?	M	?	?	?	
P	Lobelia richmondensis	perennial lobelia	M	?	M	?	?	?	
P	Lobelia siphilitica	great blue lobelia	?	?	?	?	?	?	
S	Lobostemon fruiticosus	eight-day-healing bush	/	?	L	?	?	?	
P	Lomandra longifolia	spiny headed mat rush	?	?	M	?	?	?	
V	Lonicera confusa	honeysuckle (confusa)	?	?	M	?	?	?	
V	Lonicera hildebrandiana	giant Burmese honeysuckle	M	M	M	M	M	M	
S	Lonicera hispidula	honeysuckle (hispidula)	L	?	L	VL	?	?	
V	Lonicera japonica	Japanese honeysuckle	M	M	L	L	M	M	⊗
V Gc	Lonicera japonica 'Halliana'	Hall's honeysuckle	M	M	L	L	M	M	⊗
S	Lonicera nitida	box honeysuckle	L	M	/	M	/	/	
V	Lonicera periclymenum	flowering woodbine	L	L	?	?	?	?	
V	Lonicera sempervirens	trumpet honeysuckle	M	M	/	M	M	M	
S	Lonicera subspicata	chaparral honeysuckle	L	?	L	VL	?	?	
V	Lonicera tatarica	tatarian honeysuckle	M	?	?	?	?	?	
T	Lophostemon confertus	Brisbane box	M	/	M	M	/	/	
S	Loropetalum chinense	fringe flower	L	M	M	?	?	?	
Gc	Lotus corniculatus	birdsfoot trefoil	L	M	M	M	/	M	⊗
P	Lotus scoparius	deer weed	VL	VL	VL	VL	L	L	
S T	Luculia pinceana	luculia	M	/	?	?	?	?	
S	Luma apiculata	palo Colorado	M	/	M	M	/	/	
S	Lupinus albifrons	silver lupine	VL	L	/	L	/	/	
S	Lupinus arboreus	coastal bush lupine	L	/	L	/	/	/	⊗
S	Lupinus excubitus	grape soda lupine	VL	VL	?	?	?	?	
P	Lupinus (Russell hybrids)	Russell lupines	M	M	/	/	/	/	

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TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
P	<i>Lupinus sparsiflorus</i>	arroyo lupin	?	?	?	?	?	?	
P	<i>Luzula nivea</i>	snowy woodrush	M	?	?	?	?	?	
P	<i>Luzula purpurea</i>	purple woodrush	M	?	?	?	?	?	
P	<i>Luzula sylvatica</i>	greater woodrush	M	?	?	?	?	?	
P	<i>Lychnis alpina</i>	alpine campion	M	M	?	?	?	?	
P	<i>Lychnis chalcedonica</i>	Maltese cross	M	M	M	M	M	M	
P	<i>Lychnis coronaria</i>	rose campion/crown pink	L	L	L	L	M	M	
S	<i>Lycianthus rantonnetii</i>	Paraguay nightshade/blue potato bush M	M	M	M	M	/	M	
S	<i>Lycium exertum</i>	boxthorn	/	?	?	?	?	?	
S	<i>Lycium fremontii</i>	wolfberry	/	L	L	L	L	L	
T	<i>Lyonothamnus floribundus</i>	Catalina ironwood	L	/	VL	L	/	/	
TS	<i>Lysiloma candida</i>	palo blanca	/	/	?	?	/	M	
TS	<i>Lysiloma microphylla</i> var. <i>thornberi</i>	feather bush	?	/	L	L	/	M	
P Gc	<i>Lysimachia</i> spp.	loosestrife/moneywort	H	H	H	H	/	/	⊗
T	<i>Macadamia</i> spp.	macadamia nut	M	/	M	M	/	/	
V	<i>Macfadyena unguis-cati</i>	cat's claw	L	L	L	L	L	L	
S	<i>Mackaya bella</i>	forest bell bush	M	?	M	M	/	/	
P	<i>Macleaya</i> spp.	plume poppy	M	?	M	?	?	?	
T	<i>Magnolia grandiflora</i>	southern magnolia	M	M	M	M	/	H	
T	<i>Magnolia</i> hybrids	hybrid magnolias	M	M	?	?	?	?	
TS	<i>Magnolia X loebneri</i>	loebner magnolia	M	M	?	?	?	?	
TS	<i>Magnolia sieboldii</i>	oyama magnolia	M	M	?	?	?	?	
T	<i>Magnolia X soulangiana</i>	saucer magnolia	M	M	M	M	/	/	
T	<i>Magnolia stellata</i>	star magnolia	M	M	M	M	/	/	
T	<i>Magnolia X veitchii</i>	veitch magnolia	M	M	?	?	?	?	
S	<i>Mahonia aquifolium</i>	Oregon grape	M	M	M	M	M	M	
S	<i>Mahonia bealei</i>	leatherleaf mahonia	M	M	M	M	M	M	
S	<i>Mahonia fortunei</i>	chinese mahonia	M	M	?	?	?	?	
S	<i>Mahonia 'Golden Abundance'</i>	golden abundance mahonia	L	L	L	M	M	M	
S	<i>Mahonia lomariifolia</i>	Chinese holly grape	M	M	L	M	M	M	
S	<i>Mahonia nervosa</i>	longleaf mahonia	M	?	?	M	?	?	
S	<i>Mahonia nevinii</i>	Nevin mahonia	VL	L	L	L	M	M	
S	<i>Mahonia pinnata</i> & cvs.	California holly grape	L	L	M	M	M	M	
Gc	<i>Mahonia repens</i>	creeping mahonia	L	L	L	M	M	/	
P	<i>Maianthemum dilatatum</i>	May lily	M	H	?	?	?	?	
S	<i>Maireana sedifolia</i>	pearl bluebush	?	?	L	?	?	?	
S	<i>Malacothamnus clementinus</i>	San Clemente Island bush mallow							
S	<i>Malacothamnus fasciculatus</i>	bush mallow	VL	L	VL	L	/	/	
S	<i>Malacothamnus fremontii</i>	Fremont's bush mallow	VL	L	?	?	?	?	
Gc	<i>Maleophora</i> spp.	ice plant (Maleophora)	L	L	L	L	/	L	⊗
S	<i>Malosma laurina</i> (<i>Rhus laurina</i>)	laurel sumac	VL	L	VL	L	/	/	
T	<i>Malus</i> spp. (edible)	apple	M	M	M	M	M	/	
T	<i>Malus</i> hybrids	crabapple	M	M	/	M	M	/	
S	<i>Malvaviscus arboreus</i>	Turk's cap	M	?	M	M	/	/	
V	<i>Mandevilla laxa</i>	Chilean jasmine	M	/	M	M	/	M	
S	<i>Mandevilla splendens</i>	mandevilla	M	/	M	M	/	M	
V	<i>Mandevilla</i> cvs.	'Alice Dupont' etc.	M	/	M	H	/	H	
	Mandevilla suaveolens (See <i>M. laxa</i>)								
P	<i>Manfreda</i> spp.	manfreda	L	?	?	?	?	?	
T	<i>Markhamia lutea</i> (<i>hildebrandtii</i>)	markhamia	?	/	M	/	/	/	
V	<i>Mascagnia lilacina</i>	purple orchid vine	?	?	?	?	?	M	
V	<i>Mascagnia macroptera</i>	yellow orchid vine	?	?	?	?	?	M	
P	<i>Matteuccia struthiopteris</i>	ostrich fern	?	?	M	H	?	?	
	<i>Maurandya antirrhiniflora</i> (See <i>Asarina antirrhiniflora</i>)								
	<i>Maurandya barclaiana</i> (See <i>Asarina barclaiana</i>)								
	<i>Maurandya erubescens</i> (See <i>Asarina erubescens</i>)								

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TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
T	<i>Maytenus boaria</i>	mayten tree	M	M	M	M	/	/	
S T	<i>Maytenus phyllanthoides</i>	mangle dulce	?	?	?	?	?	?	
P Gc	<i>Mazus reptans</i>	mazus	M	H	M	H	?	?	
T S	<i>Melaleuca armillaris</i>	bracelet honey-myrtle	VL	/	L	M	/	M	
T S	<i>Melaleuca decussata</i>	totem poles (lilac melaleuca)	VL	/	L	M	/	M	
T S	<i>Melaleuca elliptica</i>	granite honey-myrtle	VL	/	L	M	/	M	
T	<i>Melaleuca ericifolia</i>	heath melaleuca	L	/	?	?	?	?	
S	<i>Melaleuca fulgens</i>	melaleuca (fulgens)	L	?	L	M	/	M	
S	<i>Melaleuca huegelii</i>	chenile honey-myrtle	?	/	L	M	/	M	
S	<i>Melaleuca incana</i>	grey honey-myrtle	L	?	L	M	/	M	
T	<i>Melaleuca lanceolata</i>	black tea	?	L	?	L	/	/	
T	<i>Melaleuca linariifolia</i>	flax leaf paper bark	L	L	L	L	/	/	
T	<i>Melaleuca nesophila</i>	pink melaleuca	L	L	L	L	/	/	
T	<i>Melaleuca quinquenervia</i> (See <i>Melaleuca viridifolia</i> var <i>rubifolia</i>)								
T	<i>Melaleuca raphiophylla</i>	swamp paper bark	?	/	?	L	/	/	
T	<i>Melaleuca squamea</i>	swamp honey-myrtle	?	?	L	M	/	M	
T	<i>Melaleuca styphelioides</i>	prickly-leaved paperback	L	L	L	M	/	M	
T	<i>Melaleuca thymifolia</i>	thyme honey-myrtle	L	L	?	?	?	?	
T	<i>Melaleuca viridiflora</i> var. <i>rubiflora</i>	cajeput tree	L	L	M	M	/	M	⊕
S	<i>Melaleuca wilsonii</i>	Wilson melaleuca	L	L	?	?	?	?	
P	<i>Melampodium leucanthum</i>	blackfoot daisy	L	/	?	L	L	L	
T	<i>Melia azedarach</i>	chinaberry	VL	L	VL	L	L	L	
S	<i>Melianthus major</i>	honey bush	L	M	M	M	/	M	
P Gc	<i>Melissa officinalis</i>	lemon balm	?	M	M	?	?	?	
Gc P	<i>Mentha spp.</i>	mint	L	M	M	M	M	M	⊕
V	<i>Merremia aurea</i>	merremia (aurea)	?	?	?	?	/	M	
V	<i>Merremia quinquefolia</i>	merremia (quinquefolia)	?	?	?	?	/	M	
T	<i>Meryta sinclairii</i>	puka	/	/	M	?	/	/	
T	<i>Metasequoia glyptostroboides</i>	dawn redwood	H	H	H	H	/	/	
T	<i>Metrosideros excelsa</i>	New Zealand Christmas tree	L	/	M	M	/	/	
S	<i>Metrosideros colliniae</i>	Lehua of Hawaii	?	?	?	?	?	?	
	<i>Metrosideros tomentosa</i> (see <i>M. excelsa</i>)								
T	<i>Michelia champaca</i>	fragrant Himalayan champaca	M	?	M	?	/	/	
T	<i>Michelia doltsopa</i>	wong-lan	M	M	M	M	/	/	
S	<i>Michelia figo</i>	banana shrub	M	M	M	H	/	H	
T	<i>Michelia X foggi 'Jack Fogg'</i>	Jack Fogg michelia	M	?	?	?	?	?	
S Gc	<i>Microbiota decussata</i>	Siberian cypress	M	?	?	?	?	?	
P	<i>Microlepia strigosa</i>	lace fern	M	/	M	H	/	/	
P	<i>Milium effusum</i>	golden wood millet	M	?	?	?	?	?	
V	<i>Millettia reticulata</i>	evergreen wisteria	M	?	M	M	/	/	
V	<i>Millettia taiwanensis</i>	Chinese evergreen wisteria	H	?	?	?	?	?	
S	<i>Mimulus spp. (shrubby)</i>	monkey flower	L	L	L	L	/	/	
P	<i>Mimulus spp. (herbaceous)</i>	monkey flower	H	H	H	H	/	/	
P	<i>Mirabilis californica</i>	wishbone bush	?	?	M	?	?	?	
P	<i>Mirabilis jalapa</i>	four o'clock	VL	L	/	L	M	M	
P	<i>Mirabilis multiflora</i>	giant four o'clock	?	L	?	?	?	?	
P	<i>Misanthus sinensis</i>	eulalia grass	H	H	M	M	M	M	
P	<i>Misanthus transmorrisonensis</i>	evergreen eulalia	H	H	M	M	M	M	
P	<i>Molinia caerulea</i>	Moor grass	M	?	?	?	?	?	
P	<i>Monarda didyma</i>	bee balm	M	M	M	M	M	M	
P	<i>Monardella linoides</i> ssp. <i>viminea</i>	San Diego willowy mint	L	?	M	?	?	?	
P	<i>Monardella macrantha</i>	scarlet monardella	L	?	?	?	?	?	
P	<i>Monardella odoratissima</i>	mountain pennyroyal	/	?	M	?	?	?	
P	<i>Monardella villosa</i>	coyote mint	VL	VL	VL	L	?	M	
P	<i>Monochaetum volanicum</i>	monochaetum	M	?	?	?	?	?	
S	<i>Montanoa grandiflora</i>	daisy tree	M	?	M	?	?	?	
P	<i>Moraea</i> spp. (summer growing)	moraea	M	M	?	?	?	?	
P	<i>Moraea</i> spp. (winter growing)	morea	VL	VL	?	?	?	?	
P	<i>Morina longifolia</i>	whorlflower	M	?	?	?	?	?	

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			1	2	3	4	5	6	
T	<i>Morus alba</i>	white mulberry	M	M	M	M	M	M	
Gc V	<i>Muehlenbeckia axillaris</i>	creeping wire vine	M	M	M	M	/	M	
Gc V	<i>Muehlenbeckia complexa</i>	mattress vine	L	L	M	M	/	M	
P	<i>Muhlenbergia capillaris</i>	hairy awn muhly	L	?	M	?	M	M	
P	<i>Muhlenbergia dumosa</i>	bamboo muhly	L	?	M	M	M	M	
P	<i>Muhlenbergia emersleyi</i>	bull grass	M	?	?	?	?	M	
P	<i>Muhlenbergia lindheimeri</i>	Lindheimer muhly	L	?	?	M	?	M	
P	<i>Muhlenbergia pubescens</i>	soft muhly	L	?	?	?	?	M	
P	<i>Muhlenbergia rigens</i>	deer grass	L	M	L	M	M	M	
S	<i>Murraya paniculata</i>	orange jessamine	/	H	M	M	/	M	
P	<i>Muscaris macrocarpum</i>	grape hyacinth	VL	VL	VL	VL	M	H	
S P	<i>Musa spp.</i>	banana	H	H	H	H	/	H	
T S	<i>Myoporum laetum</i>	myoporum	L	M	M	M	/	/	⊗
S Gc	<i>Myoporum X 'Pacificum'</i>	pacifica saltbush	L	L	L	M	/	/	
S Gc	<i>Myoporum parvifolium & cvs.</i>	myoporum	L	L	L	L	/	M	
P	<i>Myosotis scorpioides</i>	forget-me-not	M	M	/	M	/	H	⊗
S	<i>Myrica californica</i>	Pacific wax myrtle	L	L	L	M	/	/	
S	<i>Myrica pensylvanica</i>	bayberry	M	M	?	?	/	/	
S	<i>Myrica rubra</i>	Chinese strawberry tree	?	?	?	?	?	?	
S	<i>Myrsine africana</i>	African boxwood	L	L	L	M	/	/	
S	<i>Myrtus communis</i>	true myrtle	L	L	L	M	M	M	
T	<i>Nageia nagi</i> (<i>Podocarpus nagi</i>)	Nageia	M	M	M	M	?	M	
S	<i>Nandina domestica</i>	heavenly bamboo	L	L	L	M	M	M	
S	<i>Nandina domestica</i> 'Purpurea'	heavenly bamboo (Nana)	M	M	M	M	M	M	
P	<i>Narcissus spp.</i>	daffodil	VL	VL	L	L	L	L	
P	<i>Nassella cernua</i>	nodding needlegrass	VL	L	VL	VL	VL	L	
P	<i>Nassella lepida</i>	foothill needlegrass	VL	L	VL	VL	VL	L	
P	<i>Nassella pulchra</i>	purple needlegrass	VL	L	VL	VL	VL	L	
P	<i>Nassella tenuissima</i>	Texas needle grass	?	?	VL	VL	VL	L	
P	<i>Nauplius sericeus</i> (<i>Asteriscus sericeus</i>)	Canary island daisy	L	?	VL	/	/	/	
T	<i>Neodypsis decaryi</i>	triangle palm	?	/	M	M	/	/	
P	<i>Neomarica caerulea</i>	poor man's orchid	L	?	M	?	?	?	
P	<i>Nepeta spp.</i>	catmint/catnip	L	M	M	M	M	M	
P	<i>Nephrolepis cordifolia</i>	southern sword fern	M	M	M	M	M	M	
P	<i>Nephrolepis exaltata</i>	Boston fern	/	M	M	M	M	M	
P	<i>Nerine spp.</i>	nerine	L	L	L	L	M	M	
S	<i>Nerium oleander</i>	oleander	L	L	L	L	M	M	⊗
P	<i>Nierembergia hippomanica</i>	cup flower	M	M	M	M	/	M	
TS	<i>Nolina recurvata</i> (<i>Beaucarnea recurvata</i>)	bottle palm	/	/	L	L	/	L	
S P	<i>Nolina spp.</i>	bear grass	VL	VL	VL	VL	L	L	
T	<i>Nyssa sylvatica</i>	sour gum/tupelo	M	M	M	H	/	/	
S	<i>Ochna serrulata</i>	bird's eye bush	L	/	M	M	/	/	
S	<i>Odontonema strictum</i>	firespike	?	?	?	?	?	?	
Gc	<i>Odontospermum hybrida</i>	gold coin	?	L	M	M	?	?	
P	<i>Oenanthe javanica</i>	water dropwort	H	?	?	?	?	?	⊗
	<i>Oenothera berlandieri</i> (See <i>Oenothera speciosa</i>)								
P	<i>Oenothera caespitosa</i>	tufted (white) evening primrose	L	?	/	L	L	L	
	<i>Oenothera cherianthifolia</i> (See <i>Camissonia cherianthifolia</i>)								
P	<i>Oenothera fruticosa</i>	golden sundrops	M	?	VL	/	/	/	
	<i>Oenothera missouriensis</i> (See <i>O. macrocarpa</i>)								
P Gc	<i>Oenothera macrocarpa</i>	Ozark sundrops	M	M	L	?	L	L	
P	<i>Oenothera pallida</i>	evening primrose (pallida)	L	?	L	?	L	L	
P	<i>Oenothera rosea</i>	evening primrose (rosea)	M	?	L	?	?	?	
Gc P	<i>Oenothera speciosa</i>	Mexican/white evening primrose	L	L	L	L	M	M	
Gc P	<i>Oenothera speciosa</i> 'Rosea'	pink evening primrose	L	L	L	L	M	M	
Gc P	<i>Oenothera stubbei</i>	Baja evening primrose	L	L	L	L	L	L	

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			1	2	3	4	5	6	
	Oenothera tetragona (See O. fruticosa spp. glauca)								
T	Olea europaea	olive	VL	VL	L	L	M	M	⊕
T	Olmediella betschleriana	Guatemalan holly	M	/	M	M	/	/	
T	Olneya tesota	desert ironwood	/	/	/	/	L	L	
P	Omphalodes cappadocica	navelwort	M	M	M	?	?	?	
P	Omphalodes verna	creeping forget-me-not	M	?	?	?	?	?	
P	Onoclea sensibilis	sensitive fern	H	H	M	?	?	?	
P	Ophiopogon clarkii	Clark lily turf	M	M	M	M	M	M	
P	Ophiopogon jaburan	giant lily turf	M	M	M	M	M	M	
P	Ophiopogon japonicus	mondo grass	M	M	M	M	M	M	
P	Ophiopogon planiscapus var. nigrescens	black mondo grass	M	M	M	M	M	M	
S	Opuntia spp.	prickly pear/cholla	VL	VL	VL	L	L	L	
P	Origanum spp.	dittany/oregano etc.	M	M	L	L	M	L	
P	Ornithogalum thyrsoides	chincherinchee	?	?	L	L	?	?	
P	Orthosiphon labiatus	shell bush	M	?	?	?	?	?	
P	Orthrosanthus chimboracensis centroamericanus	orthrosanthus	L	?	?	?	?	?	
P	Orthrosanthus multiflorus	orthrosanthus	L	?	?	?	?	?	
S	Osmanthus spp.	sweet olive/osmanthus	M	M	M	M	M	M	
P	Osmunda cinnamomea	cinnamon fern	H	H	H	H	/	/	
P	Osmunda regalis	royal/flowering fern	H	H	H	?	/	/	
Gc	Osteospermum spp.	African daisy	L	L	L	L	/	M	
P S	Otatea acuminata (aztecorum)	Mexican weeping bamboo	M	?	M	M	/	H	
P	Otholobium fruiticans	blue cape pea	?	?	M	?	?	?	
P	Oxalis spp.	sorrel/shamrock	M	M	M	M	?	?	
P	Oxera pulchella	royal climber	?	/	M	M	/	/	
T	Oxydendrum arboreum	sourwood tree	M	M	/	?	?	/	
P	Oxypetalum caeruleum (See Tweedia caesulea)								
S	Ozothamnus rosemarinifolius (Helichrysum)	ozothamnus	M	?	L	?	?	?	
T	Pachycormis discolor	elephant tree	?	?	L	?	/	L	
T	Pachypodium lamerei	Madagascar palm	?	/	L	M	/	M	
Gc	Pachysandra terminalis	Japanese spurge	M	M	M	/	M	/	
P	Paeonia spp.	peony	M	M	/	/	/	/	
V	Pandorea jasminoides	bower vine	M	/	M	M	/	/	
V	Pandorea pandorana	wonga wonga vine	M	/	M	M	/	/	
P	Panicum virgatum cvs.	switch grass	M	?	?	?	?	?	
P	Panicum (native spp.)	switch grass	?	?	L	L	VL	VL	
P	Papaver orientale	oriental poppy	M	M	M	M	M	H	
P	Papaver pilosum	poppy	L	/	M	?	?	?	
P	Parahebe spp.	veronica/speedwell	M	?	M	?	?	?	
T	Parkinsonia aculeata	Mexican palo verde/ Jerusalem thorn	VL	VL	L	L	L	L	
T	Parkinsonia florida (Cercidium floridum)	blue palo verde	VL	VL	VL	L	/	L	
T	Parrotia persica	Persian witch hazel	M	?	/	?	?	/	
V	Parthenocissus henryana	silver vein creeper	M	?	M	?	?	?	
Gc V	Parthenocissus quinquefolia	Virginia creeper	M	M	M	M	M	M	
Gc V	Parthenocissus tricuspidata	Boston ivy	M	M	M	M	M	M	
	Pasania edulis (See Lithocarpus edulis)								
V	Passiflora spp.	passion vine	M	M	M	M	/	M	
P	Pattersonia drummondii	pattersonia	M	?	M	?	?	?	
T	Paulownia kawakamii	sapphire dragon tree	?	?	M	M	?	/	
T	Paulownia tomentosa	empress tree	M	H	M	M	?	/	
S	Pavonia praemorsa	yellow mallow	?	?	M	?	?	?	
P	Pelargonium cordifolium	heartleaf geranium	M	?	M	M	?	?	
P	Pelargonium domesticum	Martha Washington pelargonium	M	M	M	M	/	M	

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			1	2	3	4	5	6	
P	<i>Pelargonium X hortorum</i>	garden geranium	L	L	M	M	/	M	
Gc P	<i>Pelargonium peltatum</i>	ivy geranium	M	M	M	M	/	M	
P Gc	<i>Pelargonium sidoides</i>	geranium (sidoides)	M	?	L	?	?	?	
P	<i>Pelargonium tomentosum</i>	peppermint-scented geranium	M	M	L	M	?	?	
P	<i>Pellaea mucronata</i>	bird's foot fern	L	?	M	?	?	?	
P	<i>Pellaea rotundifolia</i>	button fern	M	?	M	?	?	?	
P	<i>Pennisetum alopecuroides</i>	black pennisetum	L	L	L	L	L		
P	<i>Pennisetum orientale</i>	Chinese fountain grass	M	?	L	?	?	?	
	<i>Pennisetum macrostachym</i> (see <i>P. setaceum</i>)								
P	<i>Pennisetum setaceum</i>	fountain grass	L	L	L	L	L	L	⊗ ⊗
P	<i>Pennisetum setaceum</i> cvs,	purple/burgundy fountain grass	M	L	M	L	L	L	
P	<i>Penstemon</i> hybrids	penstemon (hybrids)	M	M	M	M	M	M	
P	<i>Penstemon</i> wild spp.	penstemon (wild)	L	L	L	L	L	L	
	<i>Pentapterygium</i> (See <i>Agapetes</i>)								
S	<i>Perityle incana</i>	Guadalupe island rock daisy	/	?	?	?	?	/	
	<i>Pernettyea mucronata</i> (See <i>Gaultheria mucronata</i>)								
S P	<i>Perovskia</i> spp.	Russian sage	M	M	M	M	L	L	
T	<i>Persea americana</i>	avocado	M	M	M	M	/	/	
	<i>Petalostemon purpureum</i> (See <i>Dalea gattingeri</i>)								
V	<i>Petrea volubilis</i>	queens wreath	?	/	M	M	?	?	
P	<i>Phalaris</i> spp. (ornamental)	ribbon grass	M	M	M	M	/	/	⊗
S	<i>Philadelphus lewisii californicus</i>	wild mock orange	M	?	M	M	?	?	
S	<i>Philadelphus mexicanus</i>	evergreen mock orange	L	M	M	M	M	M	
S	<i>Philadelphus X virginalis</i>	double mock orange	M	M	M	/	/	/	
S P	<i>Philodendron bipinnatifidum</i> (selloum)	tree philodendron	M	M	M	M	/	M	
P	<i>Phlebodium aureum</i> (Polypodium aureum)	rabbit's foot fern	M	?	M	?	?	?	
P	<i>Phlomis caballeroi</i>	phlomis (caballeroi)	?	?	L	L	?	?	
S P	<i>Phlomis cashmeriana</i>	phlomis (cashmeriana)	?	?	L	L	?	?	
P	<i>Phlomis cretica</i>	phlomis (cretica)	?	?	L	L	?	?	
S P	<i>Phlomis fruticosa</i>	Jerusalem sage	L	L	L	L	M	M	
S P	<i>Phlomis italicica</i>	phlomis (italicica)	L	M	L	L	?	?	
P	<i>Phlomis lanata</i>	phlomis (lanata)	L	?	L	L	?	?	
P	<i>Phlomis purpurea</i>	phlomis (purpurea)	?	?	L	L	?	?	
P	<i>Phlomis russeliana</i>	phlomis (russeliana)	L	?	M	M	?	?	
S	<i>Phlomis tuberosa</i>	phlomis (tuberosa)	M	?	L	L	?	?	
P	<i>Phlox</i> (shrubby cvs.)	phlox	M	M	M	M	M	M	
Gc P	<i>Phlox subulata</i>	moss pink	M	M	/	/	M	M	
T	<i>Phoenix canariensis</i>	Canary Island date palm	L	L	L	L	M	M	
T	<i>Phoenix dactylifera</i>	date palm	L	L	L	L	M	M	
T	<i>Phoenix reclinata</i>	Senegal date palm	/	/	M	M	/	M	
T	<i>Phoenix roebelenii</i>	pigmy date palm	L	/	M	M	/	M	
T	<i>Phoenix rupicola</i>	cliff date palm	/	/	M	M	/	/	
S	<i>Phormium</i> hybrids	flax	L	M	M	M	/	M	
S	<i>Phormium tenax</i>	New Zealand flax	L	L	L	M	/	M	
T S	<i>Photinia X fraseri</i>	Fraser photinia	M	M	M	M	M	M	
T S	<i>Photinia serratifolia</i> (<i>P. serrulata</i>)	Chinese photinia	M	M	/	M	M	M	
S	<i>Phygelius X rectus</i>	cape fuchsia	M	?	M	?	?	?	
Gc	<i>Phyla nodiflora</i> (<i>Lippia nodiflora</i>)	cape weed	L	M	L	L	/	M	⊗
	<i>Phyllitis scolopendrium</i> (See <i>Asplenium scolopendrium</i>)								
S	<i>Phyllostachys</i> spp.	bamboo (<i>Phyllostachys</i>)	L	L	M	M	M	M	
P	<i>Physostegia virginiana</i>	obedient plant	M	M	M	M	M	M	
T	<i>Picea abies</i>	Norway spruce	M	M	M	/	/	/	
T	<i>Picea glauca</i>	Alberta spruce	M	M	/	/	M	/	
T	<i>Picea mariana</i>	black spruce	?	?	?	?	?	/	
T	<i>Picea omorika</i>	Serbian spruce	?	?	?	?	?	/	

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			1	2	3	4	5	6	
T	<i>Picea orientalis</i>	oriental spruce	?	?	?	?	?	/	
T	<i>Picea pungens</i>	Colorado spruce	M	M	M	M	M	/	
S	<i>Pieris formosa</i> var. <i>forestii</i>	Chinese pieris	M	M	/	/	/	/	
S	<i>Pieris japonica</i> (<i>taiwanensis</i>)	lily-of-the-valley shrub	M	M	/	/	/	/	
S	<i>Pimelea ferruginea</i>	rice flower	M	/	/	/	?	?	
S	<i>Pimelea prostrata</i>	rice flower	M	/	/	/	?	?	
P	<i>Pinellia ternata</i>	pinellia	M	?	M	?	?	?	
T	<i>Pinus attenuata</i>	knobcone pine	L	L	L	L	/	/	
T	<i>Pinus X attenuata</i>	knobcone-Monterey pine	M	/	L	M	/	/	
T	<i>Pinus brutia</i>	Calabrian pine	L	L	L	L	M	M	
T	<i>Pinus brutia</i> ssp. <i>eldarica</i>	eldarica pine	L	L	L	L	L	L	
T	<i>Pinus canariensis</i>	Canary Island pine	L	L	L	M	M	M	
T	<i>Pinus contorta</i>	beach pine	M	M	/	/	/	/	
T	<i>Pinus coulteri</i>	Coulter pine	L	L	L	L	M	/	
T	<i>Pinus densiflora</i>	Japanese red pine	M	M	/	M	/	/	
T	<i>Pinus edulis</i>	pinyon pine	L	L	VL	L	L	/	
	<i>Pinus eldarica</i> (See <i>P brutia</i> spp. <i>eldarica</i>)								
T	<i>Pinus flexilis</i>	limber pine	?	?	L	?	?	?	
T	<i>Pinus halepensis</i>	Aleppo pine	L	L	L	L	L	L	
T	<i>Pinus heldreichii</i>	Bosnian pine	M	?	?	?	?	?	
T	<i>Pinus jeffreyi</i>	Jeffrey pine	L	L	/	/	/	/	
	<i>Pinus leucodermis</i> (See <i>P. heldreichii</i>)								
T	<i>Pinus monophylla</i>	single leaf pinyon pine	L	/	L	L	L	/	
T	<i>Pinus montezumae</i>	Montezuma pine	L	?	L	L	/	/	
S	<i>Pinus mugo</i>	mugo pine	L	L	/	M	M	/	
T	<i>Pinus muricata</i>	bishop pine	M	M	L	/	/	/	
T	<i>Pinus nigra</i>	Austrian black pine	M	M	/	M	M	/	
T	<i>Pinus parviflora</i>	Japanese white pine	M	M	/	/	?	/	
T	<i>Pinus patula</i>	Jelecote pine	M	M	M	M	M	M	
T	<i>Pinus pinaster</i>	cluster pine	M	M	L	/	/	/	⊗
T	<i>Pinus pinea</i>	Italian stone pine	L	L	L	L	M	M	⊗
T	<i>Pinus ponderosa</i>	ponderosa pine	L	L	/	L	/	/	
T	<i>Pinus radiata</i>	Monterey pine	M	/	M	M	/	/	⊗
T	<i>Pinus roxburghii</i>	chir pine	M	M	M	M	M	M	
T	<i>Pinus sabiniana</i>	foothill/Gray pine	VL	VL	VL	L	/	/	
T	<i>Pinus strobus</i>	eastern white pine	M	?	/	/	?	/	
T	<i>Pinus sylvestris</i>	Scotch pine	M	M	/	M	/	/	
T	<i>Pinus thunbergii</i>	Japanese black pine	M	M	M	M	M	M	
T	<i>Pinus torreyana</i>	Torrey pine	L	L	L	M	/	/	
T	<i>Pisonia umbellifera</i>	bird catcher tree	?	/	M	?	/	/	
T	<i>Pistacia chinensis</i>	Chinese pistache	L	L	M	M	M	M	
TS	<i>Pistacia lentiscus</i>	mastic tree	VL	?	M	M	?	?	
T	<i>Pistacia vera</i>	pistachio	L	L	M	M	/	/	
T	<i>Pithecellobium flexicaule</i>	Texas ebony	?	?	/	?	/	L	
T	<i>Pithecellobium pallens</i>	tenaza	?	?	?	?	L	L	
V	<i>Pithecoctenium crucigerum</i>	pithecoctenium	?	?	M	M	?	?	
TS	<i>Pittosporum crassifolium</i>	evergreen pittosporum	M	M	M	M	/	/	
TS	<i>Pittosporum eugenioides</i>	tarata	M	M	M	M	/	/	
T	<i>Pittosporum phillyraeoides</i>	willow pittosporum	M	M	L	L	/	M	
TS	<i>Pittosporum rhombifolium</i>	Queensland pittosporum	M	/	M	M	/	/	
TS	<i>Pittosporum tenuifolium</i>	tawhiwhi	M	M	M	M	/	/	
S	<i>Pittosporum tobira</i>	mock orange	L	M	M	M	M	M	
S	<i>Pittosporum tobira</i> 'Wheelers Dwarf'	dwarf pittosporum	M	M	M	M	M	M	
T	<i>Pittosporum undulatum</i>	victorian box	M	/	M	M	/	/	
T	<i>Platanus X acerifolia</i> and cvs.	London plane	M	M	M	M	H	H	
T	<i>Platanus occidentalis</i> 'Glabrata'	Texas sycamore	?	?	?	?	?	?	
T	<i>Platanus racemosa</i>	California sycamore	M	M	M	M	H	H	
T	<i>Platanus wrightii</i>	Arizona sycamore	M	?	M	M	H	H	
S	<i>Platycladus orientalis</i>	oriental arborvitae	M	M	M	M	M	M	

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			1	2	3	4	5	6	
P	<i>Platycodon grandiflorus</i>	balloon flower	M	M	M	M	M	M	
S	<i>Plecostachys serpyllifolia</i> (<i>Helichrysum</i>)	straw flower	L	L	L	L	M	M	
S P Gc	<i>Plectranthus</i> spp.	Swedish ivy	M	/	M	M	/	/	
P	<i>Pleioblastus</i> spp.	dwarf bamboo	M	?	M	?	?	?	
S	<i>Plumbago auriculata</i> (<i>campense</i>)	cape plumbago	L	M	M	M	/	M	
S	<i>Plumbago scandens</i>	summer snow	?	?	?	M	/	L	
S	<i>Plumeria rubra</i>	frangipani	/	/	L	/	/	M	
P	<i>Poa costineata</i>	Australian blue grass	M	?	?	?	?	?	
	<i>Podocarpus gracilior</i> (See <i>Afrocarpus gracillior</i>)								
T	<i>Podocarpus henkelii</i>	long leaf yellow wood	M	H	M	M	M	/	
T	<i>Podocarpus latifolius</i>	yellow wood	M	?	M	/	/	/	
T S	<i>Podocarpus macrophyllus</i>	yew pine	M	M	M	M	M	M	
	<i>Podocarpus nagi</i> (See <i>Nageia nagi</i>)								
S	<i>Podocarpus nivalis</i>	alpine totara	M	?	?	?	?	?	
T	<i>Podocarpus totara</i>	totara	?	?	M	M	?	?	
V	<i>Podranea ricasoliana</i>	pink trumpet vine	/	M	M	M	/	M	
P	<i>Polemonium</i> spp.	Jacob's ladder	H	H	M	M	?	?	
P	<i>Poliomintha longiflora</i>	Mexican oregano	L	?	?	?	L	L	
P	<i>Polyanthes tuberosa</i>	tuberose	M	M	L	?	L	L	
S	<i>Polygala X dalmaisiana</i>	sweet pea shrub	L	M	M	M	/	/	
P	<i>Polygonatum odoratum</i> (<i>japonicum</i>)	Soloman's seal	H	/	M	?	?	?	
V	<i>Polygonum aubertii</i>	silver lace vine	L	L	L	L	M	M	
P	<i>Polypodium</i> (native spp.)	plypody	VL	?	?	?	?	?	
P	<i>Polypodium</i> (subtropical spp.)	polypody	M	?	?	?	?	?	
P	<i>Polystichum californicum</i>	sword fern	L	M	M	H	/	/	
P	<i>Polystichum munitum</i>	western sword fern	M	M	M	H	/	H	
P	<i>Polystichum polyblepharum</i>	Japanese lace fern	M	H	H	H	M	M	
P	<i>Polystichum X setigerum</i>	Alaskan fern	M	H	H	H	M	M	
T	<i>Populus alba</i> 'Pyramidalis'	bolleana poplar	M	M	M	M	H	H	
T	<i>Populus balsamifera</i>	balsam/balm of Gilead poplar	M	M	M	M	H	H	
T	<i>Populus X canadensis</i>	Carolina poplar	H	H	?	M	H	H	
T	<i>Populus fremontii</i>	western cottonwood	M	M	M	M	H	H	
T	<i>Populus 'Mohavensis'</i>	Mohave poplar	?	?	?	?	M	M	
T	<i>Populus nigra</i> 'Italica'	Lombardy poplar	M	M	M	M	H	H	
T	<i>Populus 'Red Caudina'</i>	cottonless cottonwood	?	?	?	?	?	?	
T	<i>Populus trichocarpa</i>	black cottonwood	H	H	M	M	H	/	
S P	<i>Portulacaria afra</i>	elephant's food	L	L	L	L	/	L	
S	<i>Potentilla fruticosa</i> cvs.	cinquefoil	M	M	/	/	M	/	
Gc	<i>Potentilla neumanniana</i> (<i>tabernaemontani</i>)	spring cinquefoil	M	M	M	M	/	M	
P Gc	<i>Pratia angulata</i>	pratia	H	H	H	H	/	/	
T	<i>Prosopis alba</i>	Argentine mesquite	/	L	L	L	M	M	
	<i>Prosopis chilensis</i> (See <i>P. glandulosa</i>)								
T	<i>Prosopis glandulosa</i>	Chilean mesquite	/	L	L	L	L	L	
T	<i>Prosopis glandulosa</i> <i>glandulosa</i>	Honey mesquite	/	L	L	L	L	L	
T	<i>Prosopis juliflora</i>	Arizona mesquite	?	?	L	L	L	L	
T	<i>Prosopis pubescens</i>	screwbean mesquite	/	L	L	L	M	M	
T	<i>Prosopis velutina</i>	velvet mesquite	/	L	L	L	M	M	
S	<i>Prostanthera denticulata</i>	mint bush	L	?	?	?	?	?	
S	<i>Prostanthera lasianthos</i>	victorian dogwood	M	?	?	?	?	?	
S	<i>Prostanthera rotundifolia</i>	round leaf mint bush	L	M	L	M	/	/	
S P	<i>Protea</i> spp.	protea	M	/	M	M	/	/	
Gc P	<i>Prunella</i> spp.	self heal	M	M	M	M	?	?	
T S	<i>Prunus caroliniana</i>	Carolina laurel cherry	L	L	M	M	M	M	
T S	<i>Prunus ilicifolia</i>	holly leaf cherry	L	L	VL	VL	/	/	
T S	<i>Prunus laurocerasus</i>	English laurel	M	M	/	H	/	/	
T S	<i>Prunus lusitanica</i>	Portugal laurel	L	L	/	/	/	/	

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			1	2	3	4	5	6	
T S	<i>Prunus lyonii</i>	Catalina cherry	L	L	L	L	/	/	
T	<i>Prunus sargentii</i>	Sargent cherry	M	?	M	?	?	/	
T	<i>Prunus spp. (edible)</i>	almond	L	M	M	M	M	/	
		apricot	M	M	M	M	M	/	
T	<i>Prunus spp. (edible)</i>	cherry	M	M	M	M	M	/	
		peach	M	M	M	M	M	/	
		peach (low chill only)	M	M	M	M	/	M	
		nectarine	M	M	M	M	M	/	
		plum	M	M	M	M	M	/	
		plum (low chill only)	L	M	M	M	/	M	
		prune	L	M	M	M	M	/	
T	<i>Prunus spp. (ornamental)</i>	flowering cherry	M	M	M	M	M	/	
		flowering peach	L	M	M	M	M	/	
		flowering plum	L	M	M	M	M	M	
T	<i>Pseudobomax ellipticum</i>	shaving brush	?	?	L	?	/	L	
V	<i>Pseudogynoxys chenopodioides</i> (<i>Senecio</i>)	Mexican flame vine	M	M	M	?	?	?	
T	<i>Pseudolarix kaempferi</i>	golden larch	?	?	/	/	?	/	
T S	<i>Pseudopanax lessonii</i>	houpara	M	?	M	/	/	?	
S	<i>Pseudosasa japonica</i>	arrow bamboo	M	?	M	M	?	?	
P	<i>Pseudosasa japonica tsutsumiana</i>	dwarf arrow bamboo	M	?	M	M	?	?	
	<i>Psidium cattleianum</i> (See <i>P. littoralis</i> var. <i>longipes</i>)								
S T	<i>Psidium guajava</i>	common guava	/	/	M	/	/	M	
S T	<i>Psidium littoralis</i> var. <i>longipes</i>	strawberry guava	M	M	M	/	/	M	
S P	<i>Psilostrophe cooperi</i>	paper flower	?	?	?	?	L	L	
S P	<i>Psilostrophe tagetina</i>	paper flower	?	?	?	L	L	L	
S	<i>Psoralea pinnata</i>	blue pea	M	?	L	M	?	?	
S	<i>Psorothamnus spinosa</i> (<i>Dalea spinosa</i>)	smoke tree	/	L	/	L	L	L	
P	<i>Pteris spp.</i>	brake fern	M	M	M	H	H	/	
P	<i>Pulmonaria spp.</i>	lungwort	M	H	/	?	?	?	
P	<i>Pulsatilla vulgaris</i> (<i>Anemone pulsatilla</i>)	Pasque flower	M	M	\	?	?	?	
T	<i>Punica granatum</i>	pomegranate	L	L	M	M	M	M	
S	<i>Punica granatum</i> 'Nana'	dwarf pomegranate	L	L	M	M	M	M	
P	<i>Puya spp.</i>	puya	VL	?	L	L	/	M	
S Gc	<i>Pyracantha spp.</i>	firethorn	L	L	L	M	M	M	⊗
P	<i>Pyrethropsis hosmariense</i>	Moroccan daisy	L	?	L	?	?	?	
	<i>Pyrethrum roseum</i> (See <i>Tanacetum coccinum</i>)								
V	<i>Pyrostegia venusta</i>	flame vine	/	/	M	M	/	M	
P	<i>Pyrrosia spp.</i>	felt fern	L	/	L	?	?	?	
T	<i>Pyrus calleryana</i> cultivars	Callery pear	M	M	M	M	M	M	
T	<i>Pyrus communis</i>	edible pear	M	M	M	M	M	/	
T	<i>Pyrus kawakamii</i>	evergreen pear	M	M	M	M	M	M	
T	<i>Quercus agrifolia</i>	coast live oak	VL	VL	L	L	/	M	
T S	<i>Quercus berberidifolia</i>	California scrub oak	VL	VL	VL	VL	L	/	
T	<i>Quercus buckleyi</i>	Texas red oak	?	?	/	?	?	?	
T	<i>Quercus chrysolepis</i>	canyon live oak	VL	L	L	L	/	/	
T	<i>Quercus coccinea</i>	scarlet oak	M	M	/	M	/	/	
T	<i>Quercus douglasii</i>	blue oak	VL	VL	VL	L	/	/	
T S	<i>Quercus dumosa</i>	Nutall's scrub oak	VL	VL	VL	VL	L	/	
T	<i>Quercus engelmannii</i>	mesa oak	/	L	L	L	/	/	
T	<i>Quercus fusiformis</i>	escarpment live oak	?	?	?	?	?	L	
T	<i>Quercus ilex</i>	holly oak	L	L	L	L	M	M	
T	<i>Quercus kelloggii</i>	California black oak	L	M	/	M	/	/	
T	<i>Quercus lobata</i>	valley oak	L	L	/	M	/	/	
T	<i>Quercus muhlenbergii</i>	chinquapin oak	L	?	?	L	L	M	
T	<i>Quercus palustris</i>	pin oak	M	M	M	M	/	/	
T	<i>Quercus robur</i>	English oak	M	M	?	M	?	/	

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			1	2	3	4	5	6	
T	<i>Quercus rubra</i>	red oak	M	M	/	M	/	/	
T	<i>Quercus shumardii</i>	Shumard red oak	M	M	?	/	/	/	
T	<i>Quercus suber</i>	cork oak	L	L	L	L	L	L	
T	<i>Quercus texana</i>	Spanish oak	L	?	?	L	L	M	
T	<i>Quercus tomentella</i>	island oak	L	?	L	/	/	/	
T	<i>Quercus virginiana</i>	southern live oak	M	M	M	M	M	M	
T	<i>Quercus wislizeni</i>	interior live oak	VL	VL	VL	VL	M	/	
T	<i>Quillaja saponaria</i>	soapbark tree	VL	L	L	?	?	?	
T	<i>Radermachera sinica</i>	Asian bell flower	/	/	M	/	/	/	
P	<i>Ranunculus californicus</i>	California buttercup	VL	VL	VL	VL	?	?	
P	<i>Ranunculus cortusaefolius</i>	buttercup	L	?	L	?	?	?	
P	<i>Ranunculus repens</i>	creeping buttercup	H	M	L	?	?	?	
P	<i>Raoulia australis</i>	golden scabweed	L	/	/	?	?	?	
P	<i>Ratibida columnifera</i>	Mexican hat	M	?	L	?	?	?	
T	<i>Ravanea rivularis</i>	ravanea	/	/	M	M	/	/	
P	<i>Rehmannia elata</i>	Chinese foxglove	H	H	M	H	M	M	
P	<i>Reineckia carnea</i>	reineckia	M	?	?	?	?	?	
Gc	<i>Rhagodia deltophylla</i>	rhagodia	L	?	VL	?	?	?	
S	<i>Rhamnus alaternus</i>	Italian buckthorn	L	L	L	M	/	/	
S	<i>Rhamnus californicus</i>	coffeeberry	L	L	VL	L	/	M	
S	<i>Rhamnus croceus</i>	redberry	L	L	VL	L	/	M	
S	<i>Rhamnus croceus ilicifolia</i>	hollyleaf redberry	L	L	VL	L	/	M	
S	<i>Rhaphiolepis indica</i>	Indian hawthorne	L	L	M	M	M	M	
T	<i>Rhaphiolepis 'Majestic Beauty'</i>	majestic beauty	L	L	M	M	M	M	
S	<i>Rhaphiolepis umbellata</i>	Yeddo hawthorne	L	L	M	M	?	?	
S	<i>Rhapis excelsa</i>	lady palm	/	/	M	M	/	/	
S	<i>Rhododendron</i> spp.	azalea	M	M	H	H	/	/	
S	<i>Rhododendron</i> spp.	rhododendron	M	M	H	H	/	/	
P	<i>Rhodohypoxis</i> spp.	rose grass	M	?	L	?	?	?	
P	<i>Rhodophiala bifida</i>	rhodophiala	L	?	?	?	?	?	
V	<i>Rhoicissus capensis</i>	evergreen grape	M	/	M	M	/	M	
TS	<i>Rhopalostylis baueri</i>	Norfolk palm	?	/	M	M	/	/	
TS	<i>Rhopalostylis sapida</i>	Nikau palm	?	/	H	H	/	/	
S Gc	<i>Rhus aromatica</i>	fragrant sumac	?	?	?	?	?	?	
S	<i>Rhus choriophylla</i>	evergreen sumac	?	?	?	?	?	?	
S	<i>Rhus integrifolia</i>	lemonade berry	L	L	VL	L	/	/	
T	<i>Rhus lancea</i>	African sumac	L	L	L	L	M	M	
T	<i>Rhus lanceolata</i>	prairie flameleaf sumac	?	?	?	?	L	L	
	<i>Rhus laurina</i> (see <i>Malosma laurina</i>)								
S	<i>Rhus lentii</i>	pink-flowering sumac	/	?	L	?	?	?	
S	<i>Rhus microphylla</i>	littleleaf sumac	?	?	?	?	?	?	
S	<i>Rhus ovata</i>	sugar bush	L	L	VL	L	M	M	
S	<i>Rhus trilobata</i>	squawbush	L	L	L	L	L	/	
ST	<i>Rhus typhina</i>	staghorn sumac	L	L	L	?	L	/	
S	<i>Rhus virens</i>	evergreen sumac	?	?	?	?	?	?	
S	<i>Rhynchospora neriglume</i>	ruby grass	?	?	?	?	?	?	
S	<i>Ribes aureum</i>	golden currant	L	L	L	L	L	/	
S	<i>Ribes indecorum</i>	white flowering currant	L	L	L	L	L	/	
S	<i>Ribes malvaceum</i>	chaparral currant	VL	VL	VL	L	/	/	
S	<i>Ribes sanguineum</i>	red flowering currant	L	L	L	M	/	/	
S	<i>Ribes speciosum</i>	fuchsia flowering gooseberry	L	L	L	M	/	/	
S	<i>Ribes thacherianum</i>	Santa Cruz Island gooseberry	/	?	M	?	?	?	
S Gc	<i>Ribes viburnifolium</i>	evergreen currant	L	L	L	M	/	/	
T	<i>Robinia X ambigua</i>	locust	L	L	L	L	M	M	
T	<i>Robinia pseudoacacia</i>	black locust	L	L	L	L	L	L	⊕
P	<i>Rodgersia aesculifolia</i>	rogersia (aesculifolia)	M	?	?	?	?	?	
P	<i>Rodgersia pinnata</i>	rogersia (pinnata)	M	?	?	?	?	?	
P	<i>Rohdea japonica</i>	rohdea	L	M	M	M	?	?	
SP	<i>Romneya coulteri</i>	Matilija poppy	VL	VL	VL	L	/	/	
V	<i>Rosa banksiae</i>	Lady Banks rose	L	L	M	M	M	M	
S	<i>Rosa californica</i>	California wild rose	L	L	L	L	/	/	

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			1	2	3	4	5	6	
V	Rosa 'Cecile Brunner'	Cecile Brunner rose	L	L	M	M	M	M	
S	Rosa hybrids..bush	rose		M	M	M	H	H	
V	Rosa hybrids..climbing	climbing roses		M	M	M	H	H	
S	Rosa minutifolia	Baja California wild rose	L	?	L	?	M	?	
S	Rosa rugosa	Japanese rose	L	M	M	?	M	M	
S	Rosa woodsii var. ultramontana	mountain wood rose	M	?	?	?	M	?	
P	Roscoea purpurea	roscoea	M	?	?	?	?	?	
S P	Rosmarinus officinalis	rosemary	L	L	L	L	M	M	
P Gc	Rosemarinus 'Prostratus'	trailing rosemary	L	L	L	L	M	M	
S	Rubus lineatus	bramble (lineatus)	M	?	?	?	?	?	
S	Rubus pentalobus (calcynioides)	bramble	M	M	M	/	/	/	
S	Rubus ursinus	California blackberry	L	L	M	?	?	?	
P	Rudbeckia spp.	coneflower	M	M	M	M	?	?	
S	Ruellia X brittoniana	dwarf ruellia	M	?	L	?	M	L	
S	Ruellia californica	rama parda	?	?	VL	VL	/	L	
S	Ruellia macrantha	Christmas pride	M	/	M	?	?	?	
S	Ruellia peninsularis	Baja ruellia	/	?	M	M	/	M	
P	Rumohra adiantiformis	leather leaf fern	M	M	M	M	/	/	
P	Ruscus spp.	butcher's broom	L	L	L	?	?	?	
T	Sabal spp.	palmetto	/	/	M	M	/	/	
Gc P	Sagina subulata	Irish moss	M	M	M	H	H	H	
Gc P	Sagina subulata 'Aurea'	Scotch moss	M	M	M	H	H	H	
T S	Salix spp.	willow	H	H	H	H	H	H	
S	Salvia apiana	white sage	VL	L	VL	VL	L	L	
S	Salvia argentea	silver sage	L	L	L	L	?	?	
P	Salvia azurea grandiflora	prairie sage	M	M	L	?	?	?	
P	Salvia 'Bee's Bliss'	bee's bliss sage	L	?	L	?	L	?	
P	Salvia blepharophylla	eyelash-leaved sage	M	?	M	?	?	?	
P	Salvia buchananii	Buchanan's sage	M	?	M	M	?	?	
P	Salvia cacaliaefolia	Guatemalan blue sage	M	?	M	M	?	?	
P	Salvia californica	Baja California sage	/	?	VL	VL	?	?	
P	Salvia chamaedryoides	blue sage	L	L	L	L	M	M	
P	Salvia chiapensis	Chiapas sage	M	?	M	M	?	?	
S	Salvia clevelandii & hybrids	Cleveland/Alan Chickering etc.	L	L	VL	L	L	L	
S P	Salvia coahuilensis	Coahuila sage	L	?	L	?	?	?	
P	Salvia coccinea	Texas sage	L	M	M	M	M	M	
P S	Salvia confertiflora	spike sage	M	?	M	?	?	?	
S	Salvia 'Costa Rica Blue'	Costa Rica blue sage	M	?	M	?	?	?	
P	Salvia 'Dara's Choice'	Sonoma sage	L	L	L	L	L	L	
P S	Salvia darcyi	Darcy sage	M	?	?	?	?	?	
P	Salvia discolor	Andean silver leaf sage	M	/	?	?	?	?	
P	Salvia dorisiana	grapefruit-scented sage	M	?	M	?	?	?	
P	Salvia dorrii	purple sage	/	M	L	?	L	L	
P S	Salvia elegans	pineapple sage	M	M	M	M	?	?	
P	Salvia farinacea	nealy cup sage	M	M	M	M	/	M	
P	Salvia 'Firescape'	Firescape sage	?	?	?	?	?	?	
P	Salvia forskaohlei (hians)	sage (forskaohlei/hians)	M	?	?	?	?	?	
P S	Salvia fulgens	Mexican cardinal sage	M	?	M	?	?	?	
P S	Salvia gesneriflora	scarlet sage	M	?	M	?	?	?	
P	Salvia glechomaefolia	sage (glechomaefolia)	M	?	?	?	?	?	
	Salvia grahamii (See S. microphylla)								
S	Salvia greggii & hybrids	autumn sage	L	L	L	L	M	M	
P S	Salvia guarantica	anise scented sage	M	/	?	?	?	?	
	Salvia hians (See S. forskaohlei)								
P S	Salvia involucrata	roseleaf sage	M	?	M	?	?	?	
S	Salvia iodantha	sage (iodantha)	M	?	M	?	?	?	
S	Salvia X jamensis cvs.	sage (jamensis cvs.)	L	?	?	?	?	?	
S	Salvia karwinskii	Karwinski's sage	M	?	?	?	?	?	
P	Salvia koyamae	maniko	M	?	?	?	?	?	
S P	Salvia leucantha	Mexican bush sage	L	L	L	L	/	M	
S	Salvia leucophylla	purple sage	L	/	L	L	/	M	

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			1	2	3	4	5	6	
P S	<i>Salvia madrensis</i>	forsythia sage	M	?	?	?	?	?	
P	<i>Salvia 'Maraschino'</i>	maraschino sage	M	?	M	?	?	?	
P	<i>Salvia 'Mrs. Beard'</i>	Mrs. Beard sage	?	?	M	?	?	?	
S	<i>Salvia mellifera</i>	black/green sage	L	L	L	L	/	M	
S	<i>Salvia mexicana</i>	Mexican sage	M	/	M	?	?	?	
S	<i>Salvia microphylla</i>	cherry/Graham sage	?	M	L	M	L	L	
P S	<i>Salvia muelleri</i>	royal purple autumn sage	L	M	L	?	M	M	
	<i>Salvia muirii</i>		?	?	?	?	?	?	
S	<i>Salvia munzii</i>	San Miguel Mountain sage	L	?	VL	L	L	/	
P S	<i>Salvia officinalis</i>	garden/kitchen sage	L	M	M	M	M	M	
P	<i>Salvia patens</i>	gentian sage	M	M	M	?	?	?	
P	<i>Salvia pratensis haematodes</i>	medow sage	M	M	?	?	?	?	
S	<i>Salvia penstemonoides</i>	big red sage	M	?	?	?	?	?	
S	<i>Salvia 'Purple Majesty'</i>	purple magesty sage	M	M	M	?	?	?	
S	<i>Salvia regla</i>	mountain sage	L	?	M	?	?	?	
P	<i>Salvia reptans</i>	sage (reptans)	L	?	?	?	?	?	
P	<i>Salvia roemeriana</i>	cedar sage	M	?	?	?	?	?	
P	<i>Salvia sinaloensis</i>	Sinaloan blue sage	M	?	M	?	?	?	
P	<i>Salvia sonomensis</i>	creeping/Sonoma sage	L	?	?	?	?	?	
P S	<i>Salvia spathacea</i>	hummingbird/pitcher sage	L	?	L	?	?	?	
P	<i>Salvia X superba</i> hybrids & cvs.	sage (superba)	M	M	M	?	?	?	
P	<i>Salvia thymoides</i>	blue salvia	L	?	L	?	?	?	
P	<i>Salvia uliginosa</i>	bog sage	M	M	M	?	/	/	
P	<i>Salvia verticillata</i> 'Purple Rain'	purple rain sage	M	?	?	M	?	?	
P S	<i>Salvia 'Waverly'</i>	Waverly sage	M	?	M	?	?	?	
T S	<i>Sambucus</i> spp.	elderberry	L	L	L	L	M	M	
S P	<i>Santolina</i> spp.	lavender cotton	L	L	L	L	L	L	
T	<i>Sapium sebiferum</i>	Chinese tallow tree	M	M	M	M	/	/	⊗
Gc P	<i>Saponaria ocymoides</i>	rock soapwort	L	L	M	M	/	/	
S	<i>Sarcococca confusa</i>	sweet box	L	M	M	?	/	/	
S Gc	<i>Sarcococca hookerana humilis</i>	sweet sarcococca	L	M	M	M	/	/	
S	<i>Sarcococca ruscifolia</i>	fragrant sarcococca	L	M	M	M	/	/	
S	<i>Sasa</i> spp.	bamboo (Sasa)	L	L	M	M	/	M	
S Gc	<i>Sasaella masamuniana albostriata</i>	white striped dwarf bamboo	M	?	M	?	?	?	
P	<i>Satureja chandleri</i>	San Miguel savory	L	?	?	?	?	?	
P	<i>Satureja douglasii</i>	yerba buena	L	?	M	?	?	?	
P	<i>Satureja mexicana</i>	savory	L	?	?	?	?	?	
P	<i>Saxifraga</i> spp.	saxifrage	M	M	M	H	H	H	
P	<i>Scabiosa</i> spp.	pincushion flower	M	M	M	M	M	M	
Gc P	<i>Scaevola aemula</i> 'Diamond Head'	blue wonder	L	L	M	M	/	/	
Gc P	<i>Scaevola</i> 'Mauve Clusters'	fan flower	L	L	M	M	/	/	
S	<i>Schlefflera actinophylla</i> (<i>Brassaia</i>)	Queensland umbrella tree	/	/	M	/	/	M	
S	<i>Schefflera arboricola</i>	Hawaiian elf schefflera	/	/	H	H	/	H	
S	<i>Schefflera elegantissima</i> (<i>Dizygotheca</i>)	thread leaf false aralia	M	M	M	M	/	M	
T S	<i>Schefflera pueckleri</i> (<i>Tupidanthus</i>)	Australian umbrella tree	/	/	M	H	/	H	
T	<i>Schinus molle</i>	California pepper tree	VL	L	VL	L	M	M	⊗
T	<i>Schinus polygamous</i>	Peruvian pepper tree	VL	L	L	L	L	M	
T	<i>Schinus terebinthefolius</i>	Brazilian pepper tree	M	M	M	M	/	M	⊗
P	<i>Schizostylis coccinea</i>	Kaffir lily	M	M	M	M	/	M	
P	<i>Schoenoplectus lacustris</i> var. <i>tabernaemontani</i>	zebra rush	M	?	H	H	?	?	
T	<i>Schotia latifolia</i>	forest Boer bloom	?	?	M	?	?	?	
T	<i>Sciadopitys verticillata</i>	Japanese umbrella pine	M	?	M	/	/	/	
P	<i>Scilla hughii</i>	bluebell	VL	VL	?	?	?	?	
P	<i>Scilla peruviana</i>	Peruvian lily	VL	VL	M	M	?	?	
	<i>Scirpus cernuus</i> (See <i>Isolepis cernua</i>)								
P Gc	<i>Sedum</i> spp.	stone crop	L	L	L	L	L	L	
P	<i>Selliera radicans</i>	swamp weed	M	?	M	?	?	?	
P	<i>Semiaquilegia ecalcarata</i>	semiaquilegia	H	?	M	?	?	?	

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			1	2	3	4	5	6	
P S	<i>Semiarundinaria fastuosa</i>	Narihira bamboo	M	?	M	M	?	M	
P	<i>Sempervivum</i> spp.	house leek	L	L	L	L	/	L	
P	<i>Senecio cineraria</i>	dusty miller	L	L	L	L	/	M	
	<i>Senecio confusus</i> (See <i>Pseudogynoxys chenopodioides</i>)								
S	<i>Senecio flaccidus</i> var. <i>douglasii</i>	bush groundsel	VL	?	L	L	/	M	
	<i>Senecio greyi</i> (See <i>Brachyglottis greyi</i>)								
Gc	<i>Senecio mandraliscae</i>	kleinia	/	/	L	M	/	M	
S	<i>Senna australis</i> (<i>Cassia australis</i>)	Australian senna/cassia							
S	<i>Senna artemesioides</i> (<i>Cassia artemesioides</i>)	feathery cassia/senna	L	L	L	L	L	L	
S	<i>Senna bicapsularis</i> (<i>Cassia candolleana</i>)	New Zealand cassia/senna	L	L	L	/	/	L	
S	<i>Senna didymobotrya</i> (<i>Cassia didymobotrya</i>)	senna/cassia didymobotrya	?	?	L	?	?	?	
S	<i>Senna lindheimeriana</i> (<i>Cassia lindheimeriana</i>)	Lindheim's senna/cassia							
S	<i>Senna multiglandulosa</i> (<i>Cassia tomentosa</i>)	woolly senna	VL	/	L	?	/	M	
S	<i>Senna odorata</i> (<i>Cassia odorata</i>)	senna/cassia (odorata)	?	?	L	L	/	L	
S	<i>Senna polyantha</i> (<i>Cassia goldmanii</i>)	Goldman's senna/cassia	?	?	L	?	?	?	
S	<i>Senna phyllodenia</i> (<i>Cassia phyllodenia</i>)	silver cassia/senna	?	?	L	L	L	L	
S	<i>Senna spectabilis</i> (<i>Cassia excelsa</i>)	senna/cassia (spectabilis/excelsa)	?	?	L	L	?	?	
S	<i>Senna splendida</i> (<i>Cassia splendida</i>)	golden wonder	?	?	L	?	?	?	
S	<i>Senna sturtii</i> (<i>Cassia sturtii</i>)	Sturt's cassia/senna	/	/	L	L	L	L	
T	<i>Sequoia sempervirens</i>	coast redwood	H	H	H	H	/	/	
T	<i>Sequoiadendron giganteum</i>	giant sequoia	M	M	/	M	/	/	
S	<i>Serissa foetida</i>	serissa	M	/	M	M	?	?	
P	<i>Sesleria</i> spp.	moor grass	M	?	M	?	/	/	
P	<i>Setaria palmifolia</i>	palm grass	H	?	M	M	?	?	⊗
P	<i>Setcreasea pallida</i> 'Purple Heart'	purple heart setcreasea	/	/	M	M	H	H	
S	<i>Shepherdia argentea</i>	silver buffaloberry	L	?	VL	VL	?	?	
P Gc	<i>Shibatea kumasasa</i>	Okame-Zaza bamboo	M	?	M	?	?	?	
P	<i>Sidalcea</i> spp.	false mallow	M	M	M	?	?	?	
P	<i>Sideritis syriaca</i>	sideritis	L	?	?	?	?		
P	<i>Silene</i> spp.	moss pink/campion	M	M	L	L	?	M	
S	<i>Simmondsia chinensis</i>	jojoba	VL	VL	VL	VL	L	L	
S	<i>Sinarundinaria nitida</i> (<i>Fargesia nitida</i>)	blue fountain bamboo	M	?	?	?	?	?	
P	<i>Sinningia tubiflora</i>	velvet slipper			L	?	?	?	
P	<i>Sisyrinchium bellum</i>	blue-eyed grass	VL	VL	L	L	M	M	
P	<i>Sisyrinchium californicum</i>	golden-eyed grass	M	M	M	M	M	M	
P	<i>Sisyrinchium convolutum</i>	sisyrinchium (convolutum)	H	?	?	?	?	?	
P	<i>Sisyrinchium striatum</i>	sisyrinchium (striatum)	M	?	M	?	/	/	
S	<i>Skimmia japonica</i>	Japanese skimmia	M	M	/	/	/	/	
S	<i>Skimmia reevesiana</i>	Reeves skimmia	?	?	/	/	/	/	
V	<i>Solandra maxima</i>	cup of gold vine	M	M	M	M	/	/	
S	<i>Solanum aviculaare</i>	kangaroo apple	L	?	?	?	?	?	
V S	<i>Solanum crispum</i>	Chilean potato tree	M	?	?	?	?	?	
V	<i>Solanum jasminoides</i>	potato vine	M	M	M	M	/	M	
V	<i>Solanum wendlandii</i>	Costa Rican nightshade	L	/	M	/	/	M	
V	<i>Solanum xantii</i>	purple nightshade	L	L	L	L	/	L	
Gc P	<i>Soleirolia soleirolii</i>	baby's tears	H	H	H	H	/	H	
S Gc	<i>Sollya heterophylla</i>	Australian bluebell creeper	L	L	L	L	/	/	
V	<i>Sollya parvifolia</i>	vining bluebell	?	?	?	?	?	?	
T	<i>Sophora japonica</i>	Japanese pagoda tree	L	L	M	M	M	M	
T S	<i>Sophora secundiflora</i>	Texas mountain laurel	L	L	L	L	M	M	
T	<i>Sorbus aucuparia</i>	European mountain ash	/	M	/	/	M	/	

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			1	2	3	4	5	6	
T	<i>Sorbus hupehensis</i>	mountain ash	?	?	/	/	?	/	
T	<i>Spermannia africana</i>	African linden	H	/	M	?	/	?	
S	<i>Spartium junceum</i>	Spanish broom	VL	VL	VL	L	VL	/	⊗
P	<i>Spathiphyllum</i> spp.	spathiphyllum	/	/	H	/	/	/	
T	<i>Spathodea campanulata</i>	African tulip tree	/	/	M	/	/	/	
P	<i>Sphaeralcea</i> spp.	desert/globe mallow	L	L	L	L	/	L	
S	<i>Spiraea</i> spp.	spirea	M	M	M	M	M	M	
P	<i>Sporobolus airoides</i>	alkalai dropseed	L	?	?	?	?	L	
P	<i>Sprekelia formosissima</i>	Aztec lily	L	L	L	L	L	L	
P	<i>Stachys albotomentosa</i>	betony	?	?	L	?	?	?	
P	<i>Stachys byzantina</i>	lamb's ears	L	L	M	M	/	M	
T	<i>Stenocarpus sinuatus</i>	firewheel tree	/	/	M	M	/	/	
P	<i>Stenocereus thurberi</i> (<i>Lemaireocereus</i>)	organ pipe cactus	/	/	VL	L	/	L	
P	<i>Stenomesson variegatum</i>	stenomesson	M	?	?	?	?	?	
V	<i>Stephanotis floribunda</i>	Madagascar jasmine	/	/	M	M	/	M	
T	<i>Stewartia pseudocamellia</i>	Japanese stewartia	M	/	/	/	/	/	
V	<i>Stigmaphyllon ciliatum</i>	butterfly vine	M	/	M	?	?	?	
P	<i>Stipa cernua</i>	nodding feather grass	VL	?	L	L	L	L	
P	<i>Stipa gigantea</i>	giant needle grass	M	?	L	L	L	L	
P	<i>Stipa lepida</i>	foothill stipa	VL	VL	L	L	L	L	
P	<i>Stipa pulchra</i>	feather grass	VL	L	VL	L	L	L	
P	<i>Stipa stipa spinosa</i>	desert bunch grass	?	?	L	L	L	L	
P	<i>Stipa tenuissima</i>	Mexican feather grass	L	?	L	L	L	L	
P	<i>Stokesia laevis</i>	stokes aster	M	M	M	M	M	M	
T	<i>Strelitzia nicolai</i>	giant bird of paradise	M	/	M	M	/	M	
S	<i>Strelitzia reginae</i>	bird of paradise	M	M	M	M	/	M	
S	<i>Streptosolen jamesonii</i>	marmalade bush	/	/	M	H	/	/	
T	<i>Styrax japonicum</i>	Japanese snowbell	M	M	/	/	M	/	
S	<i>Styrax officinale californicum</i>	California storax	L	L	L	L	M	/	
S	<i>Styrax officinale redivivus</i>	snowdrop bush	L	L	/	?	?	/	
P S	<i>Sutera</i> spp.	sutera	M	?	L	?	?	?	
S	<i>Swainsonia galegifolia</i>	winter sweet pea	M	?	?	?	?	?	
T	<i>Syagrus romanzoffiana</i>	queen palm	L	M	M	M	M	M	
S	<i>Syphoricarpus albus</i>	snowberry	L	L	L	L	?	/	
S	<i>Syphoricarpus orbiculatus</i>	coralberry	M	?	?	?	?	/	
S	<i>Syphoricarpus mollis</i>	creeping snowberry	L	L	?	?	?	/	
S	<i>Symphandra</i> spp.	ring bellflower	M	?	M	?	?	?	
S	<i>Syringa X chinensis</i>	Chinese lilac	M	M	/	?	?	/	
S	<i>Syringa X hyacinthiflora</i>	Canadian lilac	M	M	/	?	?	/	
S	<i>Syringa patula</i>	Korean lilac	M	M	/	?	?	/	
S	<i>Syringa X persica</i>	Persian lilac	L	L	/	?	M	/	
S	<i>Syringa vulgaris</i>	lilac	L	L	/	M	M	/	
S	<i>Syzygium paniculatum</i>	Australian brush cherry	M	M	M	M	/	/	
S	<i>Syzygium smithii</i>	Smith's brush cherry	?	?	M	M	/	?	
S	<i>Tabebuia chrysotricha</i>	golden trumpet tree	?	/	M	M	/	M	
T	<i>Tabebuia impetiginosa</i> (ipe)	pink/lavender trumpet tree	/	/	M	M	/	/	
T	<i>Tagetes lemmoni</i>	mountain marigold	L	L	L	L	M	M	
S P	<i>Tagetes lucida</i>	Mexican tarragon	M	M	M	M	M	M	
P	<i>Talinium calcynium</i>	flame flower	L	?	?	?	?	?	
P	<i>Tamarix</i> spp.	tamarisk	VL	VL	L	L	L	L	⊗ ⊗
T S	<i>Tanacetum coccinum</i> (<i>Pyrethrum roseum</i>)	painted daisy	M	/	L	?	?	?	
P	<i>Tanacetum haradjanii</i>	tansy	L	?	L	?	?	?	
	Tanacetum herderi (See <i>Hippolyta herderi</i>)								
P	<i>Tanacetum parthenium</i> (<i>Chrysanthemum parthenium</i>)	feverfew	L	L	M	M	M	M	
T	<i>Taxodium distichum</i>	bald cypress	M	M	M	M	/	/	
T	<i>Taxodium mucronatum</i>	Montezuma cypress	M	M	M	M	/	/	
T S	<i>Taxus baccata</i>	English yew	M	M	M	M	M	/	

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			1	2	3	4	5	6	
T S	<i>Taxus baccata</i> 'Fastigiata'	Irish yew	M	M	M	M	M	/	
S	<i>Taxus cuspidata</i>	Japanese yew	M	?	M	?	?	?	
S	<i>Taxus 'Meyeri'</i>	Meyer's Yew	M	?	?	?	?	?	
S	<i>Taxus X media</i> cvs.	Yew (media cvs.)	M	?	M	?	?	?	
S	<i>Tecoma 'Orange Jubilee'</i>	orange jubilee tecoma	M	M	?	?	/	M	
S T	<i>Tecoma X smithii</i>	Smith's tecoma	?	?	M	?	?	?	
T S	<i>Tecoma stans</i>	yellow bells	/	/	L	L	/	L	
V	<i>Tecomanthe speciosa</i>	tecomanthe	M	?	?	?	?	?	
S V	<i>Tecomaria capensis</i>	cape honeysuckle	M	M	M	M	/	M	
P	<i>Tellima grandiflora</i>	fringe cups	M	?	?	?	?	?	
P	<i>Telopea speciosissima</i>	waratah	M	/	?	?	?	?	
S	<i>Ternstroemia gymnanthera</i>	Japanese ternstroemia	M	M	M	M	M	/	
S	<i>Tetraneurus acaulis</i> (<i>Hymenoxis acaulis</i>)	sweet shade	?	?	?	?	/	M	
S	<i>Tephrosia grandiflora</i>	hoary pea	M	?	?	?	?	?	
V	<i>Tetrapanax papyrifer</i>	rice paper plant	L	M	M	M	/	M	
Gc	<i>Tetrastigma voinierianum</i>	Javan grape	/	/	M	M	/	M	
P Gc	<i>Teucrium chamaedrys</i>	germander	L	L	L	L	M	M	
S Gc	<i>Teucrium cossonii</i>	Majorcan germander	VL	L	L	L	/	L	
S	<i>Teucrium fruticans</i>	bush germander	L	L	L	L	/	M	
P	<i>Teucrium hyrcanicum</i>	germander (<i>hyrcanicum</i>)	L	?	?	?	?	?	
S	<i>Teucrium marum</i>	cat thyme	L	L	L	L	?	?	
P S	<i>Teucrium scorodonia</i> 'Crispum'	germander (<i>crispum</i>)	M	?	M	?	?	?	
P	<i>Thalictrum aquilegifolium</i>	purple meadow rue	H	?	M	?	?	?	
P	<i>Thalictrum coreanum</i>	meadow rue (<i>coreanum</i>)	M	?	?	?	?	?	
P	<i>Thalictrum delavayi</i>	lavender shower	H	?	M	M	?	?	
P	<i>Thalictrum fendleri</i> var. <i>polycarpum</i>	meadow rue	M	?	L	L	?	?	
P	<i>Thalictrum flavum</i> spp <i>glaucum</i>	meadow rue (<i>flavum</i>)	H	?	M	?	?	?	
P	<i>Thalictrum dipterocarpum</i> (See <i>T. delavayi</i>)		H	?	?	?	?	?	
P	<i>Thalictrum polycarpum</i>	medow rue	M	?	M	M	M	M	
P	<i>Thalictrum rochenbrunianum</i>	lavender mist	H	?	?	?	?	?	
	<i>Thalictrum speiosissimum</i> (See <i>T. flavum</i> spp <i>glaucum</i>)								
P	<i>Thamnocalamus spathaceus</i> (<i>Fargesia murieliae</i>)	umbrella bamboo	M	?	M	M	?	?	
T S	<i>Thevetia peruviana</i>	yellow oleander	/	/	M	M	/	M	
T	<i>Thevetia thevetioides</i>	giant thevetia	/	/	M	M	/	M	
S	<i>Thuja occidentalis</i>	American arborvitae	M	M	M	M	M	M	
S	<i>Thuja orientalis</i> (See <i>Platycadus orientalis</i>)								
V	<i>Thunbergia alata</i>	black eyed susan	M	M	M	M	M	M	
V	<i>Thunbergia battiscombei</i>	thunbergia (<i>battiscombei</i>)	M	?	M	M	M	M	
V	<i>Thunbergia grandiflora</i>	sky flower	M	/	M	/	/	M	
V	<i>Thunbergia gregorii</i>	orange clock vine	M	/	M	M	/	M	
V	<i>Thunbergia mysorensis</i>	thunbergia (<i>mysorensis</i>)	M	?	M	/	/	/	
GC P	<i>Thymus</i> spp.	thyme	M	M	M	M	M	M	
P	<i>Thysanolaena maxima</i>	tiger grass	?	?	M	M	?	?	
S	<i>Tiarella wherryi</i>	sugar scoop	M	/	M	?	M	?	
S	<i>Tibuchina heteromalla</i>	glory bush	M	/	M	?	/	/	
S	<i>Tibuchina urvilleana</i> (<i>semidecandra</i>)	princess flower	M	/	M	H	/	H	
T	<i>Tilia americana</i>	American linden	M	M	/	/	/	/	
T	<i>Tilia cordata</i>	little leaf linden	M	M	/	/	/	/	
T	<i>Tipuana tipu</i>	tipu tree	M	/	M	M	/	/	
P	<i>Todea barbara</i>	crepe fern	M	?	M	?	?	?	
T	<i>Toona sinensis</i> (<i>Cedrela sinensis</i>)	Chinese toon	?	?	L	?	?	?	
P	<i>Trachelium caeruleum</i>	throatwart	M	?	M	?	?	?	
Gc V	<i>Trachelospermum asiaticum</i>	Asian star jasmine	M	M	M	M	M	M	
S Gc	<i>Trachelospermum jasminoides</i>	star jasmine	M	M	M	M	M	M	
T	<i>Trachycarpus fortunei</i>	windmill palm	L	M	M	M	/	M	
T	<i>Trachycarpus takil</i>	takil fan palm	?	/	M	M	/	M	

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			1	2	3	4	5	6	
P	<i>Tradescantia X andersoniana</i>	spiderwort	M	M	M	M	M	M	
P	<i>Tradescantia fluminensis</i>	wandering Jew	M	/	M	?	?	?	
P	<i>Tradescantia pallida</i>	spiderwort	M	?	M	?	?	?	
	Trichocereus spp. (See <i>Echinopsis</i> spp.)								
S P	<i>Trichostema lanatum</i>	woolly/mountain blue curls	VL	VL	VL	L	/	M	
	<i>Trichostema parishii</i> (See <i>T. lanatum</i>)				/				
P	<i>Tricyrtis hirta</i>	toad lily	M	?	L	?	?	?	
Gc	<i>Trifolium fragiferum</i> O'Connor	O'Connors legume (landscape use)	M	M	M	M	M	M	
Gc	<i>Trifolium fragiferum</i> O'Connor	O'Connors legume (revegetation use)	L	L	L	L	L	L	
Gc	<i>Trifolium repens</i>	white clover	M	/	H	H	?	?	
	<i>Tristania conferta</i> (See <i>Lophostemon confertus</i>)								
	<i>Tristania laurina</i> (See <i>Tristaniopsis laurina</i>)								
T	<i>Tristaniopsis laurina</i>	little leaf myrtle	M	/	M	M	/	/	
P	<i>Tritelia laxa</i>	Ithuriel's spear	VI	VL	L	L	?	?	
P	<i>Tritonia</i> spp.	tritonia							
S	<i>Trixis californica</i>	trixis	?	?	?	?	L	M	
P	<i>Trollius</i> spp.	globeflower	H	H	M	M	H	H	
P	<i>Tropaeolum majus</i>	nasturtium	M	M	/	M	/	M	⊗
T	<i>Tsuga canadensis</i>	Canadian hemlock	M	/	/	/	/	/	
P	<i>Tulbaghia fragrans</i>	sweet garlic	M	M	M	M	/	M	
P	<i>Tulbaghia violacea</i>	society garlic	M	M	M	M	/	M	
	<i>Tupidanthus calypratus</i> (See <i>Schefflera pueckleri</i>)								
P	<i>Tweedia caesulea</i> (<i>Oxypetalum caeruleum</i>)	blue flowered milkweed	M	?	M	?	?	?	
S	<i>Ugni molinae</i>	Chilean guava	M	M	M	M	?	?	
S T	<i>Ungnadia speciosa</i>	Mexican buckeye	?	?	?	?	L	M	
T	<i>Ulmus americana</i>	American elm	M	M	M	M	?	/	
T	<i>Ulmus glabra</i>	Scotch elm	M	?	?	?	?	?	
T	<i>Ulmus parvifolia</i>	Chinese evergreen elm	M	M	M	M	M	M	
T	<i>Ulmus pumila</i>	Siberian elm	L	L	/	L	M	M	
T	<i>Umbellularia californica</i>	California bay	M	M	M	M	/	/	
P	<i>Urginea maritima</i>	sea squill	L	?	L	?	/	/	
S	<i>Vaccinium moupinense</i>	Himalayan blueberry	M	?	?	?	/	/	
S	<i>Vaccinium ovatum</i>	evergreen huckleberry	M	M	/	/	/	/	
S	<i>Vaccinium parvifolium</i>	red huckleberry	M	M	/	/	/	/	
S	<i>Vaccinium vitis-idaea</i>	foxberry	M	?	/	/	/	/	
P Gc	<i>Vancouveria</i> spp.	inside-out flower	M	?	?	?	?	?	
S	<i>Vauquelinia californica</i>	Arizona rosewood	L	?	/	/	M	M	
S	<i>Vauquelinia corymbosa</i> var. <i>heterodon</i>	narrow leaf rosewood	?	?	/	/	?	L	
P	<i>Velthemia bracteata</i>	forest lily	L	?	M	/	?	?	
P	<i>Verbascum bombyciferum</i>	mullein	M	?	L	?	?	?	
P	<i>Verbascum phoeniceum</i>	purple mullein	L	L	L	L	/	/	
P	<i>Verbena bonariensis</i>	verbena (bonariensis)	VL	M	L	L	M	M	
Gc P	<i>Verbena gooddingii</i>	Goodding verbena	L	L	L	L	/	M	
P	<i>Verbena hybrids</i>	garden verbena	L	L	M	M	/	M	
Gc P	<i>Verbena lilacina</i>	lilac verbena	L	?	L	L	/	L	
Gc	<i>Verbena peruviana</i>	Peruvian verbena	L	L	L	L	/	M	
Gc P	<i>Verbena rigida</i>	vervian	M	M	M	M	/	M	
Gc	<i>Verbena stricta</i>	hoary vervian	L	M	M	M	M	M	
Gc	<i>Verbena tenera</i> (<i>pulchella</i>)	rock verbena	M	?	?	M	M	M	
Gc	<i>Verbena tenuisecta</i>	moss verbena	L	L	L	L	/	M	
P	<i>Veronica</i> spp.	veronica	M	M	M	/	/	M	
Gc	<i>Veronica repens</i>	speedwell	M	M	M	/	/	/	

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			1	2	3	4	5	6	
P	<i>Veronicastrum virginicum</i>	blackroot	M	?	?	?	?	?	
S	<i>Viburnum 'Anne Russel'</i>	Anne Russel viburnum	M	?	?	?	?	?	
S	<i>Viburnum awabuki</i>	awabuki viburnum	M	?	M	?	?	?	
S	<i>Viburnum X bodnantense</i>	Bodnant viburnum	M	?	?	?	?	?	
S	<i>Viburnum X burkwoodii</i>	Burkwood viburnum	L	M	M	/	M	/	
S	<i>Viburnum carlesii</i>	Korean spice viburnum	M	?	?	?	?	?	
S	<i>Viburnum carlesii</i> cvs.	Cayuga,Chesapeake, Eskimo Viburnum	M	?	?	?	?	?	
S	<i>Viburnum davidii</i>	David viburnum	M	M	/	/	/	/	
S	<i>Viburnum japonicum</i>	Japanese viburnum	M	M	M	M	M	/	
S	<i>Viburnum 'Mohawk'</i>	Mohawk viburnum	M	?	?	?	?	?	
S	<i>Viburnum odoratissimum</i>	sweet viburnum	L	M	M	/	M	/	
S	<i>Viburnum opulus</i>	European cranberry bush	L	M	M	M	M	/	
S	<i>Viburnum plicatum tomentosum</i>	doublefile viburnum	M	M	M	M	?	/	
S	<i>Viburnum X pragense</i>	Prague viburnum	?	?	?	?	?	?	
S	<i>Viburnum X rhytidophylloides</i>	viburnum (rhytidophylloides)	M	?	?	?	?	?	
S	<i>Viburnum rhytidophyllum</i>	leatherleaf viburnum	M	M	M	M	M	M	
S	<i>Viburnum setigerum</i>	tea viburnum	?	?	M	?	?	?	
S	<i>Viburnum suspensum</i>	sandanqua viburnum	M	M	M	M	M	M	
S	<i>Viburnum tinus</i>	Iaurustinus	M	M	M	M	M	M	
S	<i>Viburnum trilobum</i>	American cranberry	M	?	?	?	?	?	
V	<i>Vigna caracalla</i>	snail vine	M	/	M	M	/	M	
S	<i>Viguiera deltoidea</i>	goldeneye	/	?	?	?	L	L	
S	<i>Viguiera laciniata</i>	San Diego County viguiera	/	?	VL	?	?	?	
T	<i>Villebrunea pedunculata</i>	villebrunea	?	?	M	?	?	?	
Gc	<i>Vinca major</i>	periwinkle	M	M	M	M	M	M	⊕
Gc	<i>Vinca minor</i>	periwinkle	M	M	M	M	M	M	
P	<i>Viola adunca</i>	western dog violet	M	?	M	?	?	?	
P	<i>Viola cornuta</i>	horned violet	M	?	M	?	?	?	
P Gc	<i>Viola hederacea</i>	Australian violet	M	M	M	H	M	M	
P	<i>Viola japonica</i>	violet (japonica)	M	?	?	?	?	?	
P Gc	<i>Viola labradorica</i>	Labrador violet	M	M	M	H	H	H	
P Gc	<i>Viola odorata</i>	sweet violet	M	M	M	H	H	H	
P	<i>Viola sempervirens</i>	redwood violet	L	?	?	?	?	?	
T	<i>Vitex agnus-castus</i>	chaste tree	L	L	L	M	M	M	
V	<i>Vitis californica</i>	California wild grape	L	M	VL	L	M	M	
V	<i>Vitis girdiana</i>	desert grape	L	M	L	L	M	M	
V	<i>Vitis labrusca</i>	American grape	L	L	M	M	M	M	
V	<i>Vitis vinifera</i>	European grape	L	L	M	M	M	M	
P	<i>Wachendorfia thyrsiflora</i>	red root	H	?	?	?	?	?	
P	<i>Wahlenbergia gloriosa</i>	royal bluebell	M	?	?	?	?	?	
T	<i>Washingtonia filifera</i>	California fan palm	L	M	L	L	M	M	
T	<i>Washingtonia robusta</i>	Mexican fan palm	L	M	L	L	M	M	
P	<i>Watsonia</i> spp.	watsonia	L	M	L	M	M	M	⊕
P Gc	<i>Wedelia trilobata</i>	trailing daisy	?	?	H	/	/	?	
S	<i>Weigela coraeensis</i>	white weigela	?	?	M	?	?	?	
S	<i>Weigela florida</i>	weigelia	M	M	M	M	M	/	
S	<i>Westringia fruiticosa (rosmariniformis)</i>	coast rosemary	L	L	L	L	/	M	
S	<i>Westringia glabra</i>	violet westringia	L	?	L	?	/	M	
S	<i>Westringia longifolia</i>	westringia (longifolia)	L	?	L	?	/	M	
S	<i>Westringia raleighi</i>	Raleigh westringia	L	?	L	?	/	M	
S	<i>Westringia 'Wynyabbie Gem'</i>	Wynyabbie gem westringia	L	?	L	?	/	M	
V	<i>Wisteria</i> spp.	wisteria	M	M	M	M	M	M	
P	<i>Woodwardia fimbriata</i>	giant chain fern	M	M	M	M	/	/	
P	<i>Woodwardia radicans</i>	European chain fern	H	/	H	H	H	H	
P	<i>Xanthorrhoea</i> spp.	grass tree	L	/	L	L	?	?	
P	<i>Xeronema calistemon</i>	poor knight's lily	M	?	?	?	?	?	
P	<i>Xerophyllum tenax</i>	bear grass	L	?	?	?	?	?	
S P	<i>Xylococcus bicolor</i>	mission manzanita	?	?	VL	L	M	/	
S	<i>Xylosma congestum</i>	shiny xylosma	L	L	M	M	M	M	
S T	<i>Yucca</i> spp.	yucca	L	L	L	L	L	L	

Species Evaluation List--1999

TYPE	BOTANICAL NAME	COMMON NAME	REGIONAL EVALUATIONS						INVASIVE
			1	2	3	4	5	6	
P	<i>Zaluziansky katherinae</i>	zaluzinsky	M	?	?	?	?	?	
S	<i>Zamia pumila</i>	Florida arrowroot	/	/	M	H	/	/	
P	<i>Zantedeschia aethiopia</i>	calla lily	M	M	M	M	/	M	⊕
P	<i>Zantedeschia</i> spp. & hybrids	pink/yellow calla lily	M	M	M	M	/	M	
P	<i>Zauschneria</i> spp. (see <i>Epilobium</i>)								
T	<i>Zelkova serrata</i>	saw leaf zelkova	M	M	L	M	M	M	
P	<i>Zephryranthes</i> spp.	zephyr flower	M	M	M	M	/	M	
	Zephryanthus robusta (See <i>Habranthus robustus</i>)								
P	<i>Zexmenia hispida</i>	zexmenia	?	?	?	?	?	?	
GC P	<i>Zinnia grandiflora</i>	prairie zinnia	M	M	M	M	M	M	
T	<i>Ziziphus jujuba</i>	Chinese jujube	L	L	L	M	M	M	
T	<i>Ziziphus obtusifolia</i>	graythorn	/	?	?	?	?	?	
Gc P	<i>Zoyzia tenuifolia</i>	Mascarene grass	M	M	M	M	M	M	

Common Names Index

COMMON NAME	BOTANICAL NAME
Aaron's beard	<i>Hypericum calycinum</i>
Abyssinian acacia	<i>Acacia abyssinica</i>
Abyssinian banana	<i>Ensete ventricosum</i>
African boxwood	<i>Myrsine africana</i>
African corn lily	<i>Ixia spp.</i>
African daisy	<i>Arctotis hybrids</i>
African daisy	<i>Osteospermum spp.</i>
African fern pine	<i>Afrocarpus gracilior (Podocarpus gracilior)</i>
African linden	<i>Sparmannia africana</i>
African plumbago	<i>Ceratostigma abyssinicum</i>
African sumac	<i>Rhus lancea</i>
African tulip tree	<i>Spathodea campanulata</i>
agapetes (serpens)	<i>Agapetes serpens (Pentapetpterygium)</i>
agave	<i>Agave spp.</i>
Alaskan fern	<i>Polystichum X setigerum</i>
Albany bottlebrush	<i>Callistemon speciosus</i>
Alberta spruce	<i>Picea glauca</i>
Albury purple hypericum	<i>Hypericum X inodorum 'Albury Purple'</i>
alectryon/titoki	<i>Alectryon excelsus</i>
Aleppo pine	<i>Pinus halepensis</i>
Algerian ivy	<i>Hedera canariensis</i>
'Alice Dupont' etc.	<i>Mandevilla cvs.</i>
alkalai dropseed	<i>Sporobolus airoides</i>
allium	<i>Allium spp.</i>
almond	<i>Prunus spp. (edible)</i>
aloe	<i>Aloe spp.</i>
aloysia	<i>Aloysia macrostachya</i>
alpine campion	<i>Lychnis alpina</i>
alpine geranium	<i>Erodium reichardii</i>
alpine totara	<i>Podocarpus nivalis</i>
alpine water fern	<i>Blechnum penna-marina</i>
alum root	<i>Heuchera micrantha</i>
amaryllis	<i>Hippeastrum spp.</i>
American arborvitae	<i>Thuja occidentalis</i>
American cranberry	<i>Viburnum trilobum</i>
American elm	<i>Ulmus americana</i>
American grape	<i>Vitis labrusca</i>
American linden	<i>Tilia americana</i>
American smoke tree	<i>Cotinus obvatus</i>
amur maple	<i>Acer tataricum ssp. ginnala</i>
Andean silver leaf sage	<i>Salvia discolor</i>
angel flower	<i>Angelonia angustifolia</i>
angel wing jasmine	<i>Jasminum nitidum</i>
angel's trumpet	<i>Brugmansia spp.</i>
anise scented sage	<i>Salvia guarantica</i>
Anne Russel viburnum	<i>Viburnum 'Anne Russel'</i>
Apache plume	<i>Fallugia paradoxa</i>
apple	<i>Malus spp.(edible)</i>
apricot	
Arabian jasmine	<i>Jasminum sambac</i>
Argentine mesquite	<i>Prosopis alba</i>
Arizona ash	<i>Fraxinus velutina</i>
Arizona mesquite	<i>Prosopis juliflora</i>
Arizona rosewood	<i>Vauquelinia californica</i>
Arizona sycamore	<i>Platanus wrightii</i>
Arizona walnut	<i>Juglans major</i>

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COMMON NAME	BOTANICAL NAME
arnica	<i>Arnica montana</i>
arrow bamboo	<i>Pseudosasa japonica</i>
arroyo lupin	<i>Lupinus sparsiflorus</i>
ash leaved gum, silver dollar tree	<i>Eucalyptus cinerea</i>
ashy silktassel	<i>Garrya flavescens</i>
Asian bell flower	<i>Radermachera sinica</i>
Asian star jasmine	<i>Trachelospermum asiaticum</i>
Asphodel	<i>Asphodeline taurica</i>
astelia	<i>Astelia nivicola</i>
aster	<i>Aster spp.</i>
athanasia	<i>Athanasia acerosa</i>
Atlas cedar	<i>Cedrus atlantica</i>
Australia fountain palm	<i>Livistona australis</i>
Australian agathis/ kauri	<i>Agathis australis</i>
Australian blue grass	<i>Poa costineata</i>
Australian bluebell creeper	<i>Sollya heterophylla</i>
Australian brush cherry	<i>Syzygium paniculatum</i>
Australian fuchsia	<i>Correa spp.</i>
Australian heath	<i>Epacris gunii</i>
Australian pea	<i>Dipogon lignosus</i>
Australian senna/cassia	<i>Senna australis (Cassia australis)</i>
Australian tea tree	<i>Leptospermum laevigatum</i>
Australian tree fern	<i>Cyathea cooperii</i>
Australian umbrella tree	<i>Schefflera pueckleri (Tupidanthus)</i>
Australian violet	<i>Viola hederacea</i>
Australian willow	<i>Geijera parviflora</i>
Austrian black pine	<i>Pinus nigra</i>
autumn crocus	<i>Colchicum agrippium</i>
autumn sage	<i>Salvia greggii & hybrids</i>
avens	<i>Geum spp.</i>
avocado	<i>Persea americana</i>
awabuki viburnum	<i>Viburnum awabuki</i>
azalea	<i>Rhododendron spp.</i>
azara	<i>Azara integrifolia</i>
Aztec lily	<i>Sprekelia formosissima</i>
baboon flower	<i>Babiana stricta hybrids</i>
baby bonnets	<i>Coursetia axillaris</i>
baby's breath	<i>Gypsophila cerastioides</i>
baby's breath	<i>Gypsophila paniculata</i>
baby's tears	<i>Soleirolia soleirolii</i>
Bailey acacia	<i>Acacia baileyana</i>
Baja bush-snapdragon	<i>Galvesia juncea</i>
Baja California sage	<i>Salvia californica</i>
Baja California wild rose	<i>Rosa minutifolia</i>
Baja evening primrose	<i>Oenothera stubbei</i>
Baja fairy duster	<i>Calliandra californica</i>
Baja indigo bush	<i>Dalea orcuttii</i>
Baja ruellia	<i>Ruellia peninsularis</i>
bald cypress	<i>Taxodium distichum</i>
balloon flower	<i>Platycodon grandiflorus</i>
balsam/balm of Gilead poplar	<i>Populus balsamifera</i>
bamboo	<i>Chusquea coronalis</i>
bamboo	<i>Drepanostachyum hookerianum</i>
bamboo (Bambusa)	<i>Bambusa spp.</i>
bamboo (Phyllostachys)	<i>Phyllostachys spp.</i>
bamboo (Sasa)	<i>Sasa spp.</i>

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COMMON NAME	BOTANICAL NAME
bamboo muhly	<i>Muhlenbergia dumosa</i>
banana	<i>Musa</i> spp.
banana-leaf fig	<i>Ficus barteri</i>
banana shrub	<i>Michelia figo</i>
barberry	<i>Berberis</i> spp.
barberry	<i>Berberis X stenophylla 'Irwinii'</i>
barleria	<i>Barleria obtusa</i>
barrel cactus	<i>Echinocactus</i> spp.
barrel cactus	<i>Ferocactus</i> spp.
bat-faced cuphea	<i>Cuphea llavea</i>
baumea	<i>Baumea rubiginosa</i>
bayberry	<i>Myrica pensylvanica</i>
beach aster	<i>Erigeron glaucus</i>
beach evening primrose	<i>Camissonia cherianthifolia</i> (<i>Oenothera</i>)
beach pine	<i>Pinus contorta</i>
bear grass	<i>Nolina</i> spp.
bear grass	<i>Xerophyllum tenax</i>
bearded iris	<i>Iris</i> spp.
bear's breech	<i>Acanthus mollis</i>
beauty berry	<i>Callicarpa bodinieri</i>
beauty berry	<i>Callicarpa japonica</i>
beauty bush	<i>Kolkwitzia amabilis</i>
bee balm	<i>Monarda didyma</i>
bee's bliss sage	<i>Salvia 'Bee's Bliss'</i>
bell flower	<i>Campanula</i> spp.
bell mallee	<i>Eucalyptus preissiana</i>
bentennial baccharis	<i>Baccharis 'Centennial'</i>
betony	<i>Stachys albotomentosa</i>
big leaf maple	<i>Acer macrophyllum</i>
big red sage	<i>Salvia penstemonoides</i>
Bigelow sneezeweed	<i>Helenium bigelovii</i>
bird catcher tree	<i>Pisonia umbellifera</i>
bird of paradise	<i>Strelitzia reginae</i>
bird's eye bush	<i>Ochna serrulata</i>
bird's foot fern	<i>Pellaea mucronata</i>
bird's nest fern	<i>Asplenium nidus</i>
birdsfoot trefoil	<i>Lotus corniculatus</i>
bishop pine	<i>Pinus muricata</i>
bishop's hat	<i>Epimedium grandiflorum</i>
bitter root	<i>Lewisia cotyledon</i>
black alder	<i>Alnus glutinosa</i>
black box	<i>Eucalyptus largiflorens</i>
black bush	<i>Corethrodyne californica</i>
black coral pea	<i>Kennedia nigricans</i>
black cottonwood	<i>Populus trichocarpa</i>
black dalea	<i>Dalea frutescens</i>
black eyed susan	<i>Thunbergia alata</i>
black locust	<i>Robinia pseudoacacia</i>
black mondo grass	<i>Ophiopogon planiscapus</i> var. <i>nigrescens</i>
black pennisetum	<i>Pennisetum alopecuroides</i>
black spruce	<i>Picea mariana</i>
black tea	<i>Melaleuca lanceolata</i>
black/green sage	<i>Salvia mellifera</i>
blackfoot daisy	<i>Melampodium leucanthum</i>
blackroot	<i>Veronicastrum virginicum</i>
blackwood acacia	<i>Acacia melanoxylon</i>

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COMMON NAME	BOTANICAL NAME
bladder pod	Cleome isomeris
blanket flower	Gaillardia grandiflora
bleeding heart	Dicentra spp.
blood red trumpet vine	Distictis buccinatoria
blue-eyed grass	Sisyrinchium bellum
blue bamboo	Drepanostachyum falcatum (Arundinaria)
blue bird hydrangea	Hydrangea serrata
blue boy/girl etc. cvs.	Ilex X meserveae
blue cape pea	Otholobium fruiticans
blue dawn flower	Ipomea indica (acuminata0
blue dracaena palm	Cordyline indivisa
blue fescue	Festuca glauca
blue flowered milkweed	Tweedia caesulea (Oxypetalum caeruleum)
blue fountain bamboo	Sinarundinaria nitida (Fargesia nitida)
blue ginger	Dichorisandra thyrsifolia
blue gramma	Bouteloua gracilis
blue gum	Eucalyptus globulus
blue hair grass	Koelaria glauca
blue hesper palm	Brahea armata
blue hibiscus	Alyogyne huegelii
blue leaf wattle	Acacia saligna
blue marguerite	Felicia amelloides
blue mist	Caryopteris X clandonensis
blue oak	Quercus douglasii
blue oat grass	Helictotrichon sempervirens
blue palo verde	Parkinsonia florida (Cercidium floridum)
blue pea	Psoralea pinnata
blue sage	Salvia chamaedryoides
blue salvia	Salvia thymoides
blue star creeper	Laurentia fluviatilis
blue wonder	Scaevola aemula 'Diamond Head'
bluebell	Scilla hughii
blueberry	Dianella tasmanica
blueberry creeper	Ampelopsis brevipedunculata
Bodnant viburnum	Viburnum X bodnantense
bog rosemary	Andromeda polifolia
bog sage	Salvia uliginosa
bolleana poplar	Populus alba 'Pyramidalis'
book-leaf mallee	Eucalyptus kruseana
boronia	Boronia spp.
Bosnian pine	Pinus heldreichii
Boston fern	Nephrolepis exaltata
Boston ivy	Parthenocissus tricuspidata
bottle brush	Callistemon citrinus
bottle palm	Nolina recurvata (Beaucarnea recurvata)
bottle tree	Brachychiton populneus
bougainvillea	Bougainvillea spp.
bower vine	Pandorea jasminoides
bower wattle	Acacia cognata (A.subporosa)
Bowles mauve wallflower	Erysimum 'Bowles Mauve'
box-leaved holly	Ilex crenata
box elder	Acer negundo
box honeysuckle	Lonicera nitida
box leaf azara	Azara microphylla
boxthorn	Lycium exsertum
bracelet honey-myrtle	Melaleuca armillaris

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COMMON NAME	BOTANICAL NAME
brake fern	<i>Pteris</i> spp.
bramble	<i>Rubus pentalobus</i> (<i>calcynioides</i>)
bramble (lineatus)	<i>Rubus lineatus</i>
Brazilian butterfly tree	<i>Bauhinia forficata</i>
Brazilian pepper tree	<i>Schinus terebinthefolius</i>
Brazilian plume flower	<i>Justicia carnea</i>
Brazilian sky flower	<i>Duranta stenostachya</i>
breath of heaven	<i>Coleonema pulchrum</i>
bridal wreath	<i>Deutzia</i> spp.
bridal wreath	<i>Francoa ramosa</i>
bridal wreath	<i>Francoa sonchifolia</i>
Bridget bloom heucherella	<i>X Heucherella tiarellaoides</i> 'Bridget Bloom'
brightness lobelia	<i>Lobelia</i> 'Brightness'
Brisbane box	<i>Lophostemon confertus</i>
brittle bush	<i>Encelia farinosa</i>
broad buckler fern	<i>Dryopteris dilatata</i>
brodiaea	<i>Brodiaea</i> spp.
bronze loquat	<i>Eryobotrya deflexa</i>
broom (Cytisus)	<i>Cytisus</i> spp.
broom (Genista)	<i>Genista</i> spp.
Buchanan's sage	<i>Salvia buchananii</i>
buckwheat	<i>Eriogonum</i> spp.
bulb oat grass	<i>Arrhenatherum elatius</i> ssp <i>bulbosum</i>
bulbinella	<i>Bulbinella robusta</i>
bull grass	<i>Muhlenbergia emersleyi</i>
bunchberry	<i>Cornus canadensis</i>
bunya-bunya	<i>Araucaria bidwillii</i>
Burford holly	<i>Ilex cornuta</i> 'Burfordii'
Burkwood daphne	<i>Daphne</i> X <i>burkwoodii</i>
Burkwood viburnum	<i>Viburnum</i> X <i>burkwoodii</i>
Burmese plumbago	<i>Ceratostigma griffithii</i>
burning bush	<i>Euonymous alatus</i>
burning bush/dittany	<i>Dictamnus</i> spp.
bursera	<i>Bursera hindsiana</i>
bush anemone	<i>Carpenteria californica</i>
bush germander	<i>Teucrium fruticans</i>
bush groundsel	<i>Senecio flaccidus</i> var. <i>douglasii</i>
bush mallow	<i>Lavatera maritima</i>
bush mallow	<i>Malacothamnus fasciculatus</i>
bush morning glory	<i>Convolvulus cneorum</i>
bush poppy	<i>Dendromecon</i> spp.
bushrue	<i>Cneoridium dumosum</i>
bushy clematis	<i>Clematis integrifolia</i>
bushy yate	<i>Eucalyptus lehmannii</i>
butcher's broom	<i>Ruscus</i> spp.
buttercup	<i>Ranunculus cortusaefolius</i>
butterfly bush	<i>Buddleja davidii</i>
butterfly bush	<i>Clerodendrum ugandense</i>
butterfly vine	<i>Stigmaphyllon ciliatum</i>
butterfly weed	<i>Asclepias tuberosa</i>
button fern	<i>Pellaea rotundifolia</i>
cadaga	<i>Eucalyptus torelliana</i>
cajeput tree	<i>Melaleuca viridiiflora</i> var. <i>rubiflora</i>
Calabrian pine	<i>Pinus brutia</i>
calamint	<i>Calamintha</i> spp.
calico flower	<i>Aristolochia elegans</i>

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COMMON NAME	BOTANICAL NAME
California bay	<i>Umbellularia californica</i>
California black oak	<i>Quercus kelloggii</i>
California black walnut	<i>Juglans hindsii</i>
California blackberry	<i>Rubus ursinus</i>
California buckeye	<i>Aesculus californica</i>
California buttercup	<i>Ranunculus californicus</i>
California Dutchman's pipe	<i>Aristolochia californica</i>
California encelia	<i>Encelia californica</i>
California fan palm	<i>Washingtonia filifera</i>
California fescue	<i>Festuca californica</i>
California fuchsia	<i>Epilobium spp. (Zauchneria)</i>
California holly grape	<i>Mahonia pinnata & cvs.</i>
California juniper	<i>Juniperus californica</i>
California lilac	<i>Ceanothus spp.</i>
California pepper tree	<i>Schinus molle</i>
California poppy	<i>Eschscholzia californica</i>
California privet	<i>Ligustrum ovalifolium</i>
California scrub oak	<i>Quercus berberidifolia</i>
California storax	<i>Styrax officinale californicum</i>
California sycamore	<i>Platanus racemosa</i>
California wild grape	<i>Vitis californica</i>
California wild rose	<i>Rosa californica</i>
calla lily	<i>Zantedeschia aethiopia</i>
Callery pear	<i>Pyrus calleryana cultivars</i>
callistemon (subulatus)	<i>Callistemon subulatus</i>
calyophus (drummondii)	<i>Calyophus drummondii</i>
camellia	<i>Camellia japonica</i>
camphor tree	<i>Cinnamomum camphora</i>
Canadian hemlock	<i>Tsuga canadensis</i>
Canadian lilac	<i>Syringa X hyacinthiflora</i>
canary-bird bush	<i>Crotalaria agatiflora</i>
Canary island daisy	<i>Nauplius sericeus (Asteriscus sericeus)</i>
Canary Island date palm	<i>Phoenix canariensis</i>
Canary Island pine	<i>Pinus canariensis</i>
Canary Island rose	<i>Aeonium spp.</i>
cane bluestem	<i>Bothriochloa barbinoides</i>
cane reed	<i>Arundinaria gigantea</i>
canna	<i>Canna spp.</i>
canyon live oak	<i>Quercus chrysolepis</i>
cape chestnut	<i>Calodendrum capense</i>
cape fuchsia	<i>Phygelius X rectus</i>
cape honeysuckle	<i>Tecomaria capensis</i>
cape plumbago	<i>Plumbago auriculata (campense)</i>
cape reed	<i>Chondropetalum tectorum</i>
Cape reed	<i>Elegia capensis</i>
cape tulip	<i>Homeria spp.</i>
cape weed	<i>Arctotheca calendula</i>
cape weed	<i>Phyla nodiflora (Lippia nodiflora)</i>
caper bush	<i>Capparis spinosa</i>
carob	<i>Ceratonia siliqua</i>
Carolina allspice	<i>Calycanthus floridus</i>
Carolina jessamine	<i>Gelsemium sempervirens</i>
Carolina laurel cherry	<i>Prunus caroliniana</i>
Carolina poplar	<i>Populus X canadensis</i>
carpet bugle	<i>Ajuga reptans</i>
Caribbean copper plant	<i>Euphorbia cotinifolia</i>

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COMMON NAME	BOTANICAL NAME
carrotwood	<i>Cupaniopsis anacardiooides</i>
cascalote	<i>Caesalpinea cacalaco</i>
cashmere bouquet	<i>Clerodendrum bungei</i>
cast iron plant	<i>Aspidistra elatior</i>
cat thyme	<i>Teucrium marum</i>
Catalina cherry	<i>Prunus lyoni</i>
Catalina ironwood	<i>Lyonothamnus floribundus</i>
catclaw acacia	<i>Acacia greggii</i>
catmint/catnip	<i>Nepeta spp.</i>
cat's claw	<i>Macfadyena unguis-cati</i>
cautleya	<i>Cautleya spicata</i>
Cayuga,Chesapeake, Eskimo Viburnum	<i>Viburnum carlesii</i> cvs.
ceanothus	<i>Ceanothus</i> cultivars
Cecile Brunner rose	<i>Rosa 'Cecile Brunner'</i>
cedar of Lebanon	<i>Cedrus libani</i>
cedar sage	<i>Salvia roemeriana</i>
centaurea (rupestris)	<i>Centaurea rupestris</i>
central Australian fan palm	<i>Livistona mariae</i>
chalk buckwheat	<i>Eriophyllum lanatum</i>
chamaedorea	<i>Chamaedorea</i> spp.
chameleon houttuynia	<i>Houttuynia cordata</i> 'Chameleon'
chamise	<i>Adenostoma fasciculatum</i>
chamomile	<i>Chamaemelum nobile</i>
chaparral currant	<i>Ribes malvaceum</i>
chaparral honeysuckle	<i>Lonicera subspicata</i>
chasmanthe	<i>Chasmanthe aethiopica</i>
chaste tree	<i>Vitex agnus-castus</i>
cheese bush	<i>Hymenoclea monogyna</i>
chenile honey-myrtle	<i>Melaleuca huegelii</i>
cherimoya	<i>Annona cherimola</i>
cherry	<i>Prunus</i> spp. (edible)
cherry/Graham sage	<i>Salvia microphylla</i>
Chiapas sage	<i>Salvia chiapensis</i>
Chilean guava	<i>Ugni molinæ</i>
Chilean jasmine	<i>Mandevilla laxa</i>
Chilean mesquite	<i>Prosopis glandulosa</i>
Chilean potato tree	<i>Solanum crispum</i>
Chilean wine palm	<i>Jubaea chilensis</i>
chinaberry	<i>Melia azedarach</i>
chincherinchee	<i>Ornithogalum thyrsoides</i>
Chinese abelia	<i>Abelia chinensis</i>
Chinese dogwood	<i>Cornus kousa chinensis</i>
Chinese evergreen elm	<i>Ulmus parvifolia</i>
Chinese evergreen wisteria	<i>Millettia taiwanensis</i>
Chinese fan palm	<i>Livistona chinensis</i>
Chinese flame tree	<i>Koelreuteria bipinnata</i>
Chinese flame tree	<i>Koelreuteria elegans</i>
Chinese fountain grass	<i>Pennisetum orientale</i>
Chinese foxglove	<i>Rehmannia elata</i>
Chinese fringe tree	<i>Chionanthus retusus</i>
Chinese hackberry	<i>Celtis sinensis</i>
Chinese hibiscus	<i>Hibiscus rosa-sinensis</i>
Chinese holly grape	<i>Mahonia lomariifolia</i>
Chinese indigo	<i>Indigofera decora</i> (<i>incarnata</i>)
Chinese jujube	<i>Ziziphus jujuba</i>
Chinese lilac	<i>Syringa X chinensis</i>

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COMMON NAME	BOTANICAL NAME
chinese mahonia	<i>Mahonia fortunei</i>
Chinese maple	<i>Acer truncatum</i>
Chinese photinia	<i>Photinia serratifolia (P. serrulata)</i>
Chinese pieris	<i>Pieris formosa var. forestii</i>
Chinese pistache	<i>Pistacia chinensis</i>
Chinese plumbago	<i>Ceratostigma willmottianum</i>
Chinese redbud	<i>Cercis chinensis</i>
Chinese strawberry tree	<i>Myrica rubra</i>
Chinese tallow tree	<i>Sapium sebiferum</i>
Chinese toon	<i>Toona sinensis (Cedrela sinensis)</i>
chinquapin oak	<i>Quercus muhlenbergii</i>
chir pine	<i>Pinus roxburghii</i>
chitalpa	<i>X Chitalpa tashkentensis</i>
chocolate cosmos	<i>Cosmos atrosanguineus</i>
chocolate scented daisy	<i>Berlandiera lyrata</i>
Christmas pride	<i>Ruellia macrantha</i>
Christmas/Lenten rose	<i>Helleborus spp.</i>
chuparosa	<i>Justicia californica</i>
cider gum	<i>Eucalyptus gunnii</i>
cigar plant	<i>Cuphea ignea</i>
cinnamon fern	<i>Osmunda cinnamomea</i>
cinquefoil	<i>Potentilla fruticosa cvs.</i>
Clanwilliam daisy	<i>Euryops speciosissimus</i>
Clark lily turf	<i>Ophiopogon clarkii</i>
clay wattle	<i>Acacia glaucoptera</i>
Cleveland/Alan Chickering etc.	<i>Salvia clevelandii & hybrids</i>
cliff date palm	<i>Phoenix rupicola</i>
cliff rose	<i>Cowania mexicana</i>
climbing hydrangea	<i>Hydrangea anomala petiolaris</i>
climbing roses	<i>Rosa hybrids..climbing</i>
climbing snapdragon	<i>Asarina barclaiana (Maurandya)</i>
cluster pine	<i>Pinus pinaster</i>
clustered fishtail palm	<i>Caryota mitis</i>
Coahuila sage	<i>Salvia coahuilensis</i>
Coahuilan hesperaloe	<i>Hesperaloe funifera</i>
coast beefwood	<i>Allocasuarina verticillata (Casuarina stricta)</i>
coast live oak	<i>Quercus agrifolia</i>
coast redwood	<i>Sequoia sempervirens</i>
coast rosemary	<i>Westringia fruiticosa (rosmariniformis)</i>
coast silktassel	<i>Garrya elliptica</i>
coastal bush lupine	<i>Lupinus arboreus</i>
coastal statice	<i>Limonium commune var. californicum</i>
cockspur coral tree	<i>Erythrina crista-galli</i>
coffeeberry	<i>Rhamnus californicus</i>
Colorado spruce	<i>Picea pungens</i>
columbia lewisia	<i>Lewisia columbiana rupicola</i>
columbine	<i>Aquilegia spp.</i>
combretem	<i>Combretem fruticosum</i>
common bluebeard	<i>Caryopteris incana</i>
common guava	<i>Psidium guajava</i>
common hackberry	<i>Celtis occidentalis</i>
common heliotrope	<i>Heliotropum arborescens</i>
common jasmine	<i>Jasminum officinale f. grandiflorum</i>
common witch hazel	<i>Hamamelis virginiana</i>
common yarrow	<i>Achillea millefolium & hybrids</i>
cone flower	<i>Echinacea spp.</i>

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COMMON NAME	BOTANICAL NAME
coneflower	Rudbeckia spp.
confederate rose	Hibiscus mutabilis
coolibah	Eucalyptus microtheca
copper false chestnut	Castanopsis cuspidata
coral bells	Heuchera sanguinea
coral gum	Eucalyptus torquata
coral plant	Berberidopsis corallina
coral poker	Kniphofia triangularis (galpinii)
coral tree	Erythrina X bidwillii
coral tree (falcata)	Erythrina falcata
coral vine	Antigonon leptopus
coralberry	Symporicarpus orbiculatus
coreopsis	Coreopsis lanceolata
cork oak	Quercus suber
corokia	Corokia X virgata
Costa Rica blue sage	Salvia 'Costa Rica Blue'
Costa Rican nightshade	Solanum wendlandii
cotoneaster	Cotoneaster spp. (shrubs)
cotoneaster	Cotoneaster spp. (ground covers)
cottonless cottonwood	Populus 'Red Caudina'
cotyledon	Cotyledon spp.
Coulter pine	Pinus coulteri
cowslip	Lachenalia spp.
coyote brush	Baccharis pilularis consanguinea
coyote mint	Monardella villosa
crabapple	Malus hybrids
cranesbill	Geranium spp.
cranessbill (chrysanthum)	Erodium chrysanthum
crape myrtle	Lagerstroemia indica
crassula	Crassula spp.
creeping baby's breath	Gypsophila repens
creeping buttercup	Ranunculus repens
creeping coprosma	Coprosma X kirkii
creeping fig	Ficus pumila
creeping forget-me-not	Omphalodes verna
creeping globe daisy	Globularia cordifolia
creeping gloxinia	Asarina erubescens (Maurandya)
creeping mahonia	Mahonia repens
creeping red fescue	Festuca rubra
creeping snowberry	Symporicarpus mollis
creeping wintergreen	Gaultheria procumbens
creeping wire vine	Muehlenbeckia axillaris
creeping/Sonoma sage	Salvia sonomensis
creosote	Larrea tridentata
crepe fern	Todea barbara
crinum lily, spider lily	Crinum spp.
cross vine	Bignonia capreolata
crown of thorns	Euphorbia milii
cruel vine	Araujia sericifera
Cuayamaca cypress	Cupressus arizonica ssp. arizonica
cup and saucer vine	Cobaea scandens
cup flower	Nierembergia hippomanica
cup of gold vine	Solandra maxima
cuphea (micropetala)	Cuphea micropetala
cupid's dart	Catananche caerulea
cushion bush	Calocephalus brownii

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COMMON NAME	BOTANICAL NAME
cushion spurge	<i>Euphorbia polychroma (epithymoides)</i>
cut-leaf banksia	<i>Banksia praemorsa</i>
cut leaf Guinea flower	<i>Hibbertia cuneiformis</i>
cyclamen	<i>Cyclamen hederifolium</i>
cypress spurge	<i>Euphorbia cyparissias</i>
daffodil	<i>Narcissus spp.</i>
dahlia	<i>Dahlia spp.</i>
daisy tree	<i>Montanoa grandiflora</i>
dalea (bicolor)	<i>Dalea bicolor</i>
dalea (capitata)	<i>Dalea capitata</i>
dalea (dorychnioides)	<i>Dalea dorychnioides</i>
dalea (lutea)	<i>Dalea lutea</i>
dalea (versicolor)	<i>Dalea versicolor</i>
dampiera	<i>Dampiera diversifolia</i>
dampiera	<i>Dampiera trigona</i>
daphne (caucasia)	<i>Daphne caucasica</i>
Darcy sage	<i>Salvia darsyi</i>
date palm	<i>Phoenix dactylifera</i>
David viburnum	<i>Viburnum davidii</i>
dawn redwood	<i>Metasequoia glyptostroboides</i>
day lily	<i>Hemerocallis spp.</i>
deciduous clematis	<i>Clematis hybrids and cvs</i>
deer fern	<i>Blechnum spicant</i>
deer grass	<i>Muhlenbergia rigens</i>
deer weed	<i>Lotus scoparius</i>
delphinium	<i>Delphinium spp.</i>
dendriopoterium	<i>Dendriopoterium menendezii</i>
deodar cedar	<i>Cedrus deodora</i>
desert bird of paradise	<i>Caesalpinea gilliesii</i>
desert broom	<i>Baccharis sarothroides</i>
desert bunch grass	<i>Stipa stipa spinosa</i>
desert cassia	<i>Cassia eremophila (C.nemophila)</i>
desert grape	<i>Vitis girdiana</i>
desert honeysuckle	<i>Anisacanthus spp.</i>
desert ironwood	<i>Olneya tesota</i>
desert lavender	<i>Hyptis emoryi</i>
desert marigold	<i>Baileya multiradiata</i>
desert olive	<i>Forestiera neomexicana</i>
desert spoon	<i>Dasyllirion spp.</i>
desert sweet acacia	<i>Acacia smallii</i>
desert willow	<i>Chilopsis linearis</i>
desert/globe mallow	<i>Sphaeralcea spp.</i>
dichondra	<i>Dichondra micrantha</i>
dittany/oregano etc.	<i>Origanum spp.</i>
doe lily	<i>Cyrtanthus brachyscyphus</i>
dombeya	<i>Dombeya spp.</i>
double mock orange	<i>Philadelphus X virginalis</i>
doublefile viburnum	<i>Viburnum plicatum tomentosum</i>
Douglas iris hybrids	<i>Iris spp.</i>
dragon tree	<i>Dracaena draco</i>
drooping laurel	<i>Leucothoe fontanesiana</i>
drumsticks	<i>Craspedia globosa</i>
dudleya, live forever	<i>Dudleya spp.</i>
dusky coral pea	<i>Kennedia rubicunda</i>
dusty miller	<i>Senecio cineraria</i>
dusty miller (cineraria)	<i>Centaurea cineraria</i>

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COMMON NAME	BOTANICAL NAME
Dutchman's pipe	<i>Aristolochia durior</i>
dwarf arrow bamboo	<i>Pseudosasa japonica tsutsumiana</i>
dwarf bamboo	<i>Pleioblastus</i> spp.
dwarf coreopsis	<i>Coreopsis auriculata</i> 'Nana'
dwarf coyote brush	<i>Baccharis pilularis</i> cvs.
dwarf fothergilla	<i>Fothergilla gardenii</i>
dwarf jasmine	<i>Jasminum parkeri</i>
dwarf pittosporum	<i>Pittosporum tobira</i> 'Wheelers Dwarf'
dwarf plumbago	<i>Ceratostigma plumbaginoides</i>
dwarf poinciana	<i>Caesalpinea pulcherrima</i>
dwarf pomegranate	<i>Punica granatum</i> 'Nana'
dwarf powderpuff	<i>Calliandra emarginata</i>
dwarf ruellia	<i>Ruellia X brittoniana</i>
dwarf snapdragon	<i>Chaenorhinium glareosum</i>
dwarf umbrella plant	<i>Cyperus albostriatus</i>
dyckia	<i>Dyckia</i> spp.
dymondia	<i>Dymondia margaretae</i>
Easter egg bush	<i>Eremophila racemosa</i>
Easter lily vine	<i>Beaumontia grandiflora</i>
eastern black walnut	<i>Juglans nigra</i>
eastern dogwood	<i>Cornus florida</i>
eastern redbud	<i>Cercis canadensis</i>
eastern white pine	<i>Pinus strobus</i>
Ebbing's silverberry	<i>Eleagnus X ebbingei</i>
Eddie's white wonder dogwood	<i>Cornus 'Eddie's White Wonder'</i>
edible fig	<i>Ficus carica</i>
edible pear	<i>Pyrus communis</i>
eidelweiss	<i>Leontopodium alpinum</i>
eight-day-healing bush	<i>Lobostemon fruiticosus</i>
eldarica pine	<i>Pinus brutia</i> ssp. <i>eldarica</i>
elderberry	<i>Sambucus</i> spp.
elephant tree	<i>Pachycormis discolor</i>
elephant's ear	<i>Alocasia</i> spp.
elephant's food	<i>Portulacaria afra</i>
empress tree	<i>Paulownia tomentosa</i>
emu bush	<i>Eremophila glabra</i>
English boxwood	<i>Buxus sempervirens</i>
English daisy	<i>Bellis perennis</i>
English holly	<i>Ilex aquifolium</i>
English ivy	<i>Hedera helix</i>
English laurel	<i>Prunus laurocerasus</i>
English oak	<i>Quercus robur</i>
English walnut	<i>Juglans regia</i>
English yew	<i>Taxus baccata</i>
epidendrum	<i>Epidendrum</i> reed stem hybrids
escallonia	<i>Escallonia</i> spp.
escarpment live oak	<i>Quercus fusiformis</i>
eucryphia	<i>Eucryphia x intermedia</i>
eulalia grass	<i>Misanthus sinensis</i>
eumong/shoestring acacia	<i>Acacia stenophyla</i>
euonymus	<i>Euonymus kiautschovicus</i>
euphorbia	<i>Euphorbia characias</i>
euphorbia	<i>Euphorbia myrsinites</i>
euphorbia	<i>Euphorbia rigida</i>
euphorbia	<i>Euphorbia seguieriana</i> niciciiana
euphorbia (dulcis)	<i>Euphorbia dulcis</i>

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COMMON NAME	BOTANICAL NAME
European beech	<i>Fagus sylvatica</i>
European chain fern	<i>Woodwardia radicans</i>
European cranberry bush	<i>Viburnum opulus</i>
European grape	<i>Vitis vinifera</i>
European hackberry	<i>Celtis australis</i>
European hornbeam	<i>Carpinus betulus 'Fastigiata'</i>
European larch	<i>Larix decidua</i>
European mountain ash	<i>Sorbus aucuparia</i>
European white birch	<i>Betula pendula</i>
euryops/shrub daisy	<i>Euryops pectinatus</i>
evening primrose (pallida)	<i>Oenothera pallida</i>
evening primrose (rosea)	<i>Oenothera rosea</i>
evergreen ash	<i>Fraxinus uhdei</i>
evergreen candy tuft	<i>Iberis sempervirens</i>
evergreen clematis	<i>Clematis armandii</i>
evergreen currant	<i>Ribes viburnifolium</i>
evergreen dogwood	<i>Cornus capitata</i>
evergreen eulalia	<i>Misanthus transmorrisonensis</i>
evergreen euonymus	<i>Euonymus japonicus</i>
evergreen grape	<i>Rhoicissus capensis</i>
evergreen huckleberry	<i>Vaccinium ovatum</i>
evergreen hydrangea	<i>Dichroa febrifuga</i>
evergreen maple (oblongum)	<i>Acer oblongum</i>
evergreen maple (paxii)	<i>Acer paxii</i>
evergreen mock orange	<i>Philadelphus mexicanus</i>
evergreen pear	<i>Pyrus kawakamii</i>
evergreen pittosporum	<i>Pittosporum crassifolium</i>
evergreen sumac	<i>Rhus choriophylla</i>
evergreen sumac	<i>Rhus virens</i>
evergreen wisteria	<i>Millettia reticulata</i>
evolvulus	<i>Evolvulus pilosus (nuttallianus)</i>
eyelash-leaved sage	<i>Salvia blepharophylla</i>
fairy duster	<i>Calliandra eriophylla</i>
fairy wand	<i>Dierama spp.</i>
false cypress	<i>Chamaecyparis spp.</i>
false heather	<i>Cuphea hyssopifolia</i>
false indigo	<i>Baptista australis</i>
false indigobush	<i>Amorpha fruiticosa</i>
false mallow	<i>Anisodontea scabrosa</i>
false mallow	<i>Sidalcea spp.</i>
false spirea	<i>Astilbe hybrids</i>
fan flower	<i>Scaevola 'Mauve Clusters'</i>
farfugium/ligularia	<i>Farfugium japonicum (Ligularia)</i>
fascicularia	<i>Fascicularia pitcairnifolia</i>
feather bush	<i>Lysiloma microphylla var. thornberi</i>
feather grass	<i>Stipa pulchra</i>
feather reed	<i>Calamagrostis spp.</i>
feathery cassia/senna	<i>Senna artemesioides (Cassia artemesioides)</i>
felt fern	<i>Pyrrosia spp.</i>
fern leaf yarrow	<i>Achillea filipendulina</i>
fescue (cinerea)	<i>Festuca cinerea</i>
fescue (tenuifolia)	<i>Festuca tenuifolia</i>
feverfew	<i>Tanacetum parthenium (Chrysanthemum parthenium)</i>
filbert	<i>Corylus maxima</i>
fir	<i>Abies spp.</i>
fire lily	<i>Cyrtanthus purpureus</i>

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COMMON NAME	BOTANICAL NAME
Firescape sage	<i>Salvia 'Firescape'</i>
firespike	<i>Odontonema strictum</i>
firethorn	<i>Pyracantha spp.</i>
firewheel tree	<i>Stenocarpus sinuatus</i>
fishtail wine palm	<i>Caryota urens</i>
fiveleaf akebia	<i>Akebia quinata</i>
flame flower	<i>Talinium calcynium</i>
flame pea	<i>Chorizema cordata</i>
flame tree	<i>Brachychiton acerifolius</i>
flame vine	<i>Pyrostegia venusta</i>
flannel bush	<i>Fremontodendron spp.</i>
flax	<i>Phormium hybrids</i>
flax	<i>Linum spp.</i>
flax leaf paper bark	<i>Melaleuca linariifolia</i>
fleabane	<i>Erigeron formosissimus</i>
fleabane	<i>Erigeron karvinskianus</i>
flooded gum	<i>Eucalyptus rudis</i>
flooded/rose gum	<i>Eucalyptus grandis</i>
Florida arrowroot	<i>Zamia pumila</i>
Florida fig	<i>Ficus florida</i>
florists' cyclamen	<i>Cyclamen persicum hybrids</i>
floss silk tree	<i>Chorisia speciosa</i>
flower-of-an-hour	<i>Hibiscus trionum</i>
flowering cherry	<i>Prunus spp. (ornamental)</i>
flowering maple	<i>Abutilon X hybridum</i>
flowering peach	
flowering plum	
flowering quince	<i>Chaenomeles cvs.</i>
flowering woodbine	<i>Lonicera periclymenum</i>
foothill needlegrass	<i>Nassella lepida</i>
foothill stipa	<i>Stipa lepida</i>
foothill/Gray pine	<i>Pinus sabiniana</i>
forest bell bush	<i>Mackaya bella</i>
forest Boer bloom	<i>Schotia latifolia</i>
forest lily	<i>Velthemia bracteata</i>
forest oak	<i>Allocasuarina torulosa</i>
forget-me-not	<i>Myosotis scorpioides</i>
Forman's mallee	<i>Eucalyptus formanii</i>
forsythia	<i>Forsythia X intermedia</i>
forsythia sage	<i>Salvia madrensis</i>
fortnight lily	<i>Dites bicolor</i>
fortnight lily	<i>Dites iridioides</i>
fountain butterfly bush	<i>Buddleja alternifolia</i>
fountain grass	<i>Pennisetum setaceum</i>
four o'clock	<i>Mirabilis jalapa</i>
foxberry	<i>Vaccinium vitis-idaea</i>
foxglove	<i>Digitalis X mertonensis</i>
fragrant Himalayan champaca	<i>Michelia champaca</i>
fragrant sarcococca	<i>Sarcococca ruscifolia</i>
fragrant sumac	<i>Rhus aromatica</i>
frangipani	<i>Plumeria rubra</i>
franklin tree	<i>Franklinia alatamaha (Gordonia)</i>
Fraser photinia	<i>Photinia X fraseri</i>
Freeman maple	<i>Acer X freemanii</i>
Fremont silktassel	<i>Garrya fremontii</i>
Fremont's bush mallow	<i>Malacothamnus fremontii</i>

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COMMON NAME	BOTANICAL NAME
fringe cups	<i>Tellima grandiflora</i>
fringe flower	<i>Loropetalum chinense</i>
fuchsia	<i>Fuchsia</i> spp.
fuchsia begonia	<i>Begonia fuchoides rosea</i>
fuchsia flowering gooseberry	<i>Ribes speciosum</i>
furcraea	<i>Furcraea</i> spp.
Galpin's leucadendron	<i>Leucadendron galpinii</i>
gamolepis	<i>Gamolepis chrysanthemumoides</i>
garden geranium	<i>Pelargonium X hortorum</i>
garden monkshood	<i>Aconitum napellus</i>
garden verbena	<i>Verbena</i> hybrids
garden/kitchen sage	<i>Salvia officinalis</i>
gardenia	<i>Gardenia</i> spp.
garland lily	<i>Calostemma purpureum</i>
gaura	<i>Gaura lindheimeri</i>
gay feather	<i>Liatris spicata</i>
gazania	<i>Gazania</i> spp.
gentian	<i>Gentiana scabra procumbens</i>
gentian sage	<i>Salvia patens</i>
Geraldton wax flower	<i>Chamelaucium uncinatum</i>
geranium (sidoides)	<i>Pelargonium sidoides</i>
germander	<i>Teucrium chamaedrys</i>
germander (crispum)	<i>Teucrium scorodonia 'Crispum'</i>
germander (hyrcanicum)	<i>Teucrium hyrcanicum</i>
giant bird of paradise	<i>Strelitzia nicolai</i>
giant Burmese honeysuckle	<i>Lonicera hildebrandiana</i>
giant chain fern	<i>Woodwardia fimbriata</i>
giant coreopsis	<i>Coreopsis gigantea</i>
giant four o'clock	<i>Mirabilis multiflora</i>
giant hyssop	<i>Agastache aurantica</i>
giant lily turf	<i>Ophiopogon jaburan</i>
giant needle grass	<i>Stipa gigantea</i>
giant reed	<i>Arundo donax</i>
giant sequoia	<i>Sequoiadendron giganteum</i>
giant thevetia	<i>Thevetia thevetioides</i>
Gibraltar candytuft	<i>Iberis gibraltarica</i>
gladiolus	<i>Gladiolus</i> spp.
gladiolus	<i>Gladiolus</i> hybrids & selections
globe daisy	<i>Globularia X indubia</i>
globe thistle	<i>Echinops exaltus</i>
globeflower	<i>Trollius</i> spp.
glory bower	<i>Clerodendrum phillippinum</i>
glory bush	<i>Tibouchina heteromalla</i>
glossy abelia	<i>Abelia X grandiflora</i>
glossy privet	<i>Ligustrum lucidum</i>
gold coin	<i>Odontospermum hybrida</i>
gold coin, Canary Island daisy	<i>Asteriscus maritimus</i>
gold flower	<i>Hypericum X moseranum</i>
gold medallion tree	<i>Cassia leptophylla</i>
golden-eyed grass	<i>Sisyrinchium californicum</i>
golden abundance mahonia	<i>Mahonia 'Golden Abundance'</i>
golden chain tree	<i>Laburnum X watereri</i>
golden currant	<i>Ribes aureum</i>
golden fleece	<i>Dyssodia pectenchaeta</i>
golden foxtail	<i>Alopecurus pratensis 'Aureus'</i>
golden larch	<i>Pseudolarix kaempferi</i>

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golden privet	<i>Ligustrum X vicaryi</i>
golden rain tree	<i>Koelreuteria paniculata</i>
golden scabweed	<i>Raoulia australis</i>
golden sundrops	<i>Oenothera fruticosa</i>
golden sunflower	<i>Heliopsis helianthoides scabra</i>
golden trumpet tree	<i>Tabebuia chrysotricha</i>
golden trumpet vine	<i>Allamanda cathartica</i>
golden wonder	<i>Senna splendida (Cassia splendida)</i>
golden wood millet	<i>Milium effusum</i>
golden yarrow	<i>Eriophyllum confertiflorum</i>
goldenbush	<i>Isocoma spp. (Haplopappus)</i>
goldeneye	<i>Viguiera deltoidea</i>
Goldman's senna/cassia	<i>Senna polyantha (Cassia goldmanii)</i>
Goodding verbena	<i>Verbena gooddingii</i>
gordonia	<i>Gordonia axillaris</i>
Gowen cypress	<i>Cupressus goveniana</i>
granite honey-myrtle	<i>Melaleuca elliptica</i>
grape hyacinth	<i>Muscaris macrocarpum</i>
grape ivy	<i>Cissus rhombifolia</i>
grape soda lupine	<i>Lupinus excubitus</i>
grapefruit-scented sage	<i>Salvia dorisiana</i>
graptopetalum	<i>Graptopetalum spp.</i>
grass tree	<i>Xanthorrhoea spp.</i>
grassy bells	<i>Edraianthus graminifolius</i>
graythorn	<i>Ziziphus obtusifolia</i>
great blue lobelia	<i>Lobelia siphilitica</i>
greater masterwort	<i>Astrantia major rosea</i>
greater woodrush	<i>Luzula sylvatica</i>
Grecian horehound	<i>Ballota pseudodictamnus</i>
Greek yarrow	<i>Achillea ageratifolia</i>
green ash	<i>Fraxinus pennsylvanica 'Marshall'</i>
green carpet	<i>Herniaria glabra</i>
green euryops	<i>Euryops pectinatus viridis</i>
green gem ficus	<i>Ficus microcarpa 'Green Gem'</i>
green kangaroo paw	<i>Anigozanthos viridis</i>
green wattle	<i>Acacia decurrens</i>
grevillea	<i>Grevillea spp.</i>
grey honey-myrtle	<i>Melaleuca incana</i>
Griffith ash	<i>Fraxinus griffithii</i>
ground ivy	<i>Glechoma hederaceae</i>
ground morning glory	<i>Convolvulus sabatius</i>
groundsel	<i>Brachyglottis greyi (Senecio greyi)</i>
Guadalupe island rock daisy	<i>Perityle incana</i>
Guadalupe palm	<i>Brahea edulis</i>
guajillo	<i>Acacia berlandieri</i>
Guatemalan blue sage	<i>Salvia cacaliaefolia</i>
Guatemalan holly	<i>Olmediella betschleriana</i>
Guinea gold vine	<i>Hibbertia scandens</i>
gum myrtle	<i>Angophora cordifolia (Angophora costata)</i>
gum plant	<i>Grindelia camporum</i>
gunnera	<i>Gunnera magellanica</i>
habranthus	<i>Habranthus tubispathus</i>
hairy awn muhly	<i>Muhlenbergia capillaris</i>
hairy canary clover	<i>Dorycnium hirsutum</i>
hairy golden aster	<i>Heterotheca villosa (chrysopsis villosa)</i>
hairy lip fern	<i>Cheilanthes lanosa</i>

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hairy wattle	<i>Acacia vestita</i>
hakone grass	<i>Hakonechloa macra</i>
Hall's honeysuckle	<i>Lonicera japonica 'Halliana'</i>
halmiocistus	<i>X Halimiocistus sahuucci</i>
halmiocistus	<i>X Halmiocistus wintonensis</i>
hammock fern	<i>Blechnum occidentale</i>
Hardijizer's beauty	<i>Azaliadendron 'Hardjizer's Beauty'</i>
hardy alyssum/basket of gold	<i>Aurinia saxatilis</i>
hardy begonia	<i>Begonia grandis</i>
hardy eucryphia	<i>Eucryphia glutinosa</i>
hardy/straw foxglove	<i>Digitalis lutea</i>
harlequin glory bower	<i>Clerodendrum trichotomum</i>
Harry Lauder's walking stick	<i>Corylus avellana contorta</i>
Hart's tongue fern	<i>Asplenium scolopendrium (Phyllitis)</i>
Hawaiian elf schefflera	<i>Schefflera arboricola</i>
Hawaiian snow bush	<i>Breynia nivosa (distacha)</i>
Hawaiian tree fern	<i>Cibotium glaucum</i>
haworthia	<i>Haworthia spp.</i>
hawthorn	<i>Crataegus spp.</i>
heart-leaved penstemmon	<i>Keckiella cordifolia</i>
heartleaf bergenia	<i>Bergenia cordifolia</i>
heartleaf geranium	<i>Pelargonium cordifolium</i>
heath	<i>Erica spp.</i>
heath-leaved banksia	<i>Banksia ericifolia</i>
heath melaleuca	<i>Melaleuca ericifolia</i>
heavenly bamboo	<i>Nandina domestica</i>
heavenly bamboo (Nana)	<i>Nandina domestica 'Purpurea'</i>
heavenly blue	<i>Lithodora diffusa</i>
hebe	<i>Hebe spp.</i>
hedge maple	<i>Acer campestre</i>
helianthemum	<i>Helianthemum nummularium</i>
Henry St. John's wort	<i>Hypericum beanii</i>
hens and chickens	<i>Echeveria spp.</i>
heron's-bill	<i>Erodium corsicum</i>
hesperantha	<i>Hesperantha spp.</i>
hibbertia (aspera)	<i>Hibbertia aspera</i>
hibbertia (pedunculata)	<i>Hibbertia pedunculata</i>
hibbertia (vestita)	<i>Hibbertia vestita</i>
Himalayan blueberry	<i>Vaccinium moupinense</i>
Himalayan ivy	<i>Hedera nepalensis</i>
hippolytia	<i>Hippolytia herderi (Tanacetum herderi)</i>
hoary pea	<i>Tephrosia grandiflora</i>
hoary vervain	<i>Verbena stricta</i>
holly fern	<i>Cyrtomium falcatum</i>
holly leaf cherry	<i>Prunus ilicifolia</i>
holly oak	<i>Quercus ilex</i>
holly sweetspire	<i>Itea ilicifolia</i>
hollyleaf redberry	<i>Rhamnus croceus ilicifolia</i>
honey bush	<i>Melianthus major</i>
honey locust	<i>Gleditsia triacanthos</i>
Honey mesquite	<i>Prosopis glandulosa glandulosa</i>
honeysuckle (confusa)	<i>Lonicera confusa</i>
honeysuckle (hispidula)	<i>Lonicera hispidula</i>
Hong Kong orchid tree	<i>Bauhinia X blakeana</i>
hopseed bush	<i>Dodonaea viscosa</i>
hopseed bush (procumbens)	<i>Dodonaea procumbens</i>

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horned violet	<i>Viola cornuta</i>
horsetail	<i>Equisetum</i> spp.
houpara	<i>Pseudopanax lessonii</i>
house leek	<i>Sempervivum</i> spp.
hummingbird/pitcher sage	<i>Salvia spathacea</i>
hyacinth bean	<i>Lablab purpureus</i> (<i>Dolichos lablab</i>)
hyacinth orchid	<i>Bletilla striata</i>
hybrid brachychiton	<i>Brachychiton X hybridus</i>
hybrid leucadendron	<i>Leucadendron</i> hybrids
hybrid magnolias	<i>Magnolia</i> hybrids
hydrangea	<i>Hydrangea macrophylla</i>
hypericum (e. nanum)	<i>Hypericum empetrifolium nanum</i>
hypericum (frondosum)	<i>Hypericum frondosum</i>
ice plant (Aptenia)	<i>Aptenia cordifolia</i>
ice plant (Carpobrotus)	<i>Carpobrotus</i> spp.
ice plant (Cephalophyllum)	<i>Cephalophyllum</i> spp.
ice plant (Delosperma)	<i>Delosperma</i> spp.
ice plant (Drosanthemum)	<i>Drosanthemum</i> spp.
ice plant (Lampranthus)	<i>Lampranthus</i> spp.
ice plant (Maleophora)	<i>Maleophora</i> spp.
ice plant (Red Apple)	<i>Aptenia 'Red Apple'</i>
Idaho fescue	<i>Festuca idahoensis</i>
impatiens (uguensis)	<i>Impatiens uguensis</i>
incense cedar	<i>Calocedrus decurrens</i>
Indian hawthorne	<i>Rhaphiolepis indica</i>
Indian laurel fig/ laurel fig	<i>Ficus microcarpa</i>
indian mallow	<i>Abutilon palmeri</i>
Indian mock strawberry	<i>Duchesnea indica</i>
indigo/pea bush	<i>Dalea pulchra</i>
inside-out flower	<i>Vancouveria</i> spp.
interior live oak	<i>Quercus wislizeni</i>
inula	<i>Inula ensifolia</i>
inyouchikuzoku	<i>Hibanaobambusa tranquillans</i>
Irish heath	<i>Daboecia cantabrica</i>
Irish moss	<i>Sagina subulata</i>
Irish yew	<i>Taxus baccata 'Fastigiata'</i>
Irish, Scotch moss	<i>Arenaria</i> spp. (See <i>Sagina</i>)
island alum root	<i>Heuchera maxima</i>
island bush snapdragon	<i>Galvesia speciosa</i>
island oak	<i>Quercus tomentella</i>
isoplexis	<i>Isoplexis chalcantha</i>
Italian alder	<i>Alnus cordata</i>
Italian Arum	<i>Arum italicum</i>
Italian buckthorn	<i>Rhamnus alaternus</i>
Italian cypress	<i>Cupressus sempervirens</i>
Italian jasmine	<i>Jasminum humile</i>
Italian stone pine	<i>Pinus pinea</i>
Ithuriel's spear	<i>Tritelia laxa</i>
ivy geranium	<i>Pelargonium peltatum</i>
jacaranda	<i>Jacaranda mimosifolia</i>
Jack Fogg michelia	<i>Michelia X foggi 'Jack Fogg'</i>
Jacob's ladder	<i>Polemonium</i> spp.
Jacob's rod/kings spear	<i>Asphodeline lutea</i>
Japanese anemone	<i>Anemone X hybrida</i>
Japanese aralia	<i>Fatsia japonica</i>
Japanese ardesia, marlberry	<i>Ardisia japonica</i>

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Japanese aucuba	<i>Aucuba japonica</i>
Japanese black pine	<i>Pinus thumbergii</i>
Japanese blood grass	<i>Imperata cylindrica 'Rubra'</i>
Japanese blueberry tree	<i>Elaeocarpus decipiens</i>
Japanese boxwood	<i>Buxus microphylla japonica</i>
Japanese cryptomeria	<i>Cryptomeria japonica</i>
Japanese dogwood	<i>Cornus kousa</i>
Japanese false oak	<i>Lithocarpus edulis (Quercus edulis)</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
Japanese iris	<i>Iris spp.</i>
Japanese knotweed	<i>Fallopia japonica</i>
Japanese lace fern	<i>Polystichum polyblepharum</i>
Japanese maple	<i>Acer palmatum</i>
Japanese mountain birch	<i>Betula platyphylla japonica</i>
Japanese pagoda tree	<i>Sophora japonica</i>
Japanese persimmon	<i>Diospyros kaki</i>
Japanese privet	<i>Ligustrum japonicum</i>
Japanese red pine	<i>Pinus densiflora</i>
Japanese rose	<i>Kerria japonica</i>
Japanese rose	<i>Rosa rugosa</i>
Japanese skimmia	<i>Skimmia japonica</i>
Japanese snowbell	<i>Styrax japonicum</i>
Japanese spurge	<i>Pachysandra terminalis</i>
Japanese stewartia	<i>Stewartia pseudocamellia</i>
Japanese ternstroemia	<i>Ternstroemia gymnanthera</i>
Japanese umbrella pine	<i>Sciadopitys verticillata</i>
Japanese viburnum	<i>Viburnum japonicum</i>
Japanese white pine	<i>Pinus parviflora</i>
Japanese yew	<i>Taxus cuspidata</i>
jasmine (beesianum)	<i>Jasminum beesianum</i>
jasmine (leratii)	<i>Jasminum leratii</i>
jasmine (tortulosum)	<i>Jasminum tortuosum</i>
Javan grape	<i>Tetrastigma voinierianum</i>
Jeffrey pine	<i>Pinus jeffreyi</i>
Jelecote pine	<i>Pinus patula</i>
Jerusalem sage	<i>Phlomis fruticosa</i>
jojoba	<i>Simmondsia chinensis</i>
jubilee wallflower	<i>Erysimum 'Jubilee'</i>
Judas tree	<i>Cercis siliquastrum</i>
jungle geranium	<i>Ixora coccinea</i>
juniper	<i>Juniperus spp.</i>
justicia (leonardii)	<i>Justicia leonardii</i>
Kaffir bloom coral tree	<i>Erythrina caffra</i>
Kaffir lily	<i>Clivia miniata</i>
Kaffir lily	<i>Schizostylis coccinea</i>
Kaffir plum	<i>Harpiphyllum caffrum</i>
Kahili ginger	<i>Hedychium garnierianum</i>
kalanchoe	<i>Kalanchoe spp.</i>
kangaroo apple	<i>Solanum aviculaare</i>
kangaroo paw	<i>Anigozanthos flavidus</i>
kangaroo treebine	<i>Cissus antarctica</i>
kapuka	<i>Griselinia littoralis</i>
Karwinski's sage	<i>Salvia karwinskii</i>
Katsura tree	<i>Cercidiphyllum japonicum</i>
Keller hypericum	<i>Hypericum kelleri</i>
kellerii achillea	<i>Achillea X kellerii</i>

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Kenilworth ivy	<i>Cymbalaria muralis</i>
Kentia palm	<i>Howea forsteriana</i>
Kew broom	<i>Cytisus X kewensis</i>
king palm	<i>Archontophoenix cunninghamiana</i>
kiwi	<i>Actinidia deliciosa</i>
kiwi/Tara	<i>Actinidia arguta</i>
kleinia	<i>Senecio mandraliscae</i>
knife acacia	<i>Acacia cultriformis</i>
knobcone-Monterey pine	<i>Pinus X attenuata</i>
knobcone pine	<i>Pinus attenuata</i>
Korean lilac	<i>Syringa patula</i>
Korean spice viburnum	<i>Viburnum carlesii</i>
kunzea	<i>Kunzea spp.</i>
Labrador violet	<i>Viola labradorica</i>
lace fern	<i>Microlepia strigosa</i>
lacecap hydrangea	<i>Hydrangea aspera villosa</i>
Lady Banks rose	<i>Rosa banksiae</i>
lady fern	<i>Athyrium filix-femina</i>
lady palm	<i>Rhapis excelsa</i>
ladybells	<i>Adenophora bulleyana</i>
lambertia	<i>Lambertia intermis</i>
lamb's ears	<i>Stachys byzantina</i>
lantana	<i>Lantana camara</i>
lantern tree	<i>Crinodendron hookerianum</i>
laurel leaf coccus	<i>Cocculus laurifolius</i>
laurel sumac	<i>Malosma laurina (Rhus laurina)</i>
laurustinus	<i>Viburnum tinus</i>
lavatera	<i>Lavatera hybrids</i>
lavender	<i>Lavandula spp.</i>
lavender beautyberry	<i>Callicarpa dichotoma</i>
lavender cotton	<i>Santolina spp.</i>
lavender mist	<i>Thalictrum rochenbrunianum</i>
lavender shower	<i>Thalictrum delavayi</i>
lavender star flower	<i>Grewia occidentalis</i>
leather leaf fern	<i>Rumohra adiantiformis</i>
leatherleaf acacia	<i>Acacia craspedocarpa</i>
leatherleaf mahonia	<i>Mahonia bealei</i>
leatherleaf viburnum	<i>Viburnum rhytidophyllum</i>
leatherwood	<i>Eucryphia lucida (billardieri)</i>
Lehua of Hawaii	<i>Metrosideros collinia</i>
lemon balm	<i>Melissa officinalis</i>
lemon flowered gum	<i>Eucalyptus woodwardii</i>
lemon scented gum	<i>Eucalyptus citriodora</i>
lemon scented jasmine	<i>Jasminum azoricum</i>
lemon scented tea tree	<i>Leptospermum petersonii</i>
lemon verbena	<i>Aloysia triphylla</i>
lemonade berry	<i>Rhus integrifolia</i>
leopard's bane	<i>Doronicum orientale (D. caucasicum)</i>
lewisia	<i>Lewisia hybrids</i>
Leyland cypress	<i>X Cupressocyparis leylandii</i>
libertia	<i>Libertia spp.</i>
licorice plant	<i>Helichrysum petiolare</i>
lilac	<i>Syringa vulgaris</i>
lilac verbena	<i>Verbena lilacina</i>
lilac vine	<i>Hardenbergia violacea</i>
lily	<i>Lilium (garden hybrids)</i>

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lily-of-the-Nile	<i>Agapanthus africanus</i>
lily-of-the-valley shrub	<i>Pieris japonica (taiwanensis)</i>
lily-of-the-valley tree	<i>Crinodendron patagua</i>
lilyleaf ladybells	<i>Adenophora liliifolia</i>
lilyturf	<i>Liriope spp.</i>
limber pine	<i>Pinus flexilis</i>
Lindheimer muhly	<i>Muhlenbergia lindheimeri</i>
Lindheim's senna/cassia	<i>Senna lindheimeriana (Cassia lindheimeriana)</i>
lion's tail	<i>Leonotis leonurus</i>
little cabbage tree	<i>Cussonia paniculata</i>
little leaf cordia	<i>Cordia parvifolia</i>
little leaf linden	<i>Tilia cordata</i>
little leaf myrtle	<i>Tristaniopsis laurina</i>
little leaf palo verde	<i>Cercidium microphyllum</i>
little Tyler/blue stars	<i>Aristea ecklonii</i>
littleleaf sumac	<i>Rhus microphylla</i>
livistona (rigida)	<i>Livistona rigida</i>
lob lolly bay	<i>Gordonia lasianthus</i>
lobelia (chinensis)	<i>Lobelia chinensis</i>
lobelia (ricardii)	<i>Lobelia ricardii</i>
locust	<i>Robinia X ambigua</i>
loebner magnolia	<i>Magnolia X loebneri</i>
Lombardy poplar	<i>Populus nigra 'Italica'</i>
London plane	<i>Platanus X acerifolia and cvs.</i>
long flowered marlock	<i>Eucalyptus macrandra</i>
long leaf yellow wood	<i>Podocarpus henkelii</i>
longleaf mahonia	<i>Mahonia nervosa</i>
loosestrife/moneywort	<i>Lysimachia spp.</i>
loquat	<i>Eryobotrya japonica</i>
low bull rush	<i>Isolepis cernua (Scirpus cernuus)</i>
luculia	<i>Luculia pinceana</i>
Ludgvan cross agapetes	<i>Agapetes 'Ludgvan Cross'</i>
lungwort	<i>Pulmonaria spp.</i>
Lydia woadwaxen	<i>Genista lydia</i>
macadamia nut	<i>Macadamia spp.</i>
Madagascar jasmine	<i>Stephanotis floribunda</i>
Madagascar palm	<i>Pachypodium lamerei</i>
Madagascar periwinkle	<i>Catharanthus roseus</i>
madrone	<i>Arbutus menziesii</i>
magic flower	<i>Cantua buxifolia</i>
maiden hair tree	<i>Ginkgo biloba</i>
maidenhair fern	<i>Adiantum spp.</i>
majestic beauty	<i>Rhaphiolepis 'Majestic Beauty'</i>
Majorcan germander	<i>Teucrium cossonii</i>
male fern	<i>Dryopteris felix-mas</i>
mallow rose	<i>Hibiscus moscheutos</i>
Maltese cross	<i>Lychnis chalcedonica</i>
mandevilla	<i>Mandevilla splendens</i>
manfreda	<i>Manfreda spp.</i>
mangle dulce	<i>Maytenus phyllanthoides</i>
maniko	<i>Salvia koyamae</i>
manna gum	<i>Eucalyptus viminalis</i>
manzanita	<i>Arctostaphylos spp.</i>
manzanita cultivars	<i>Arctostaphylos cultivars</i>
maraschino sage	<i>Salvia 'Maraschino'</i>
marbled bamboo	<i>Chimonobambusa marmorea (Arundinarea)</i>

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Marguerite daisy	<i>Argyranthemum frutescens</i>
Marina arbutus	<i>Arbutus 'Marina'</i>
markhamia	<i>Markhamia lutea (hildebrandtii)</i>
marmalade bush	<i>Streptosolen jamesonii</i>
Martha Washington pelargonium	<i>Pelargonium domesticum</i>
Mascarene grass	<i>Zoysia tenuifolia</i>
maстic tree	<i>Pistacia lentiscus</i>
Matilija poppy	<i>Romneya coulteri</i>
mattress vine	<i>Muehlenbeckia complexa</i>
Maximilian sunflower	<i>Helianthus maximiliani</i>
May lily	<i>Maianthemum dilatatum</i>
mayten tree	<i>Maytenus boaria</i>
mazus	<i>Mazus reptans</i>
meadow rue	<i>Thalictrum fendleri var. polycarpum</i>
meadow rue (coreanum)	<i>Thalictrum coreanum</i>
meadow rue (flavum)	<i>Thalictrum flavum spp glaucum</i>
Meadowsweet	<i>Filipendula vulgaris</i>
Mediterranean fan palm	<i>Chamaerops humilis</i>
medow rue	<i>Thalictrum polycarpum</i>
medow sage	<i>Salvia pratensis haematoches</i>
melaleuca (fulgens)	<i>Melaleuca fulgens</i>
merremia (aurea)	<i>Merremia aurea</i>
merremia (quinquefolia)	<i>Merremia quinquefolia</i>
mesa oak	<i>Quercus engelmannii</i>
Mexican abelia	<i>Abelia floribunda</i>
Mexican bird of paradise	<i>Caesalpinea mexicana</i>
Mexican buckeye	<i>Ungnadia speciosa</i>
Mexican bush lobelia	<i>Lobelia laxiflora</i>
Mexican bush sage	<i>Salvia leucantha</i>
Mexican cardinal flower	<i>Lobelia fulgens</i>
Mexican cardinal sage	<i>Salvia fulgens</i>
Mexican cycad	<i>Dioon spp.</i>
Mexican fan palm	<i>Washingtonia robusta</i>
Mexican feather grass	<i>Stipa tenuissima</i>
Mexican flame vine	<i>Pseudogynoxys chenopodioides (Senecio)</i>
Mexican hat	<i>Ratibida columnifera</i>
Mexican honeysuckle	<i>Justicia spicigera</i>
Mexican lily	<i>Beschorneria yuccoides</i>
Mexican orange	<i>Choisya ternata</i>
Mexican oregano	<i>Poliomintha longiflora</i>
Mexican palo verde/ Jerusalem thorn	<i>Parkinsonia aculeata</i>
Mexican pitcher sage	<i>Lepechinia hastata</i>
Mexican redbud	<i>Cercis mexicana</i>
Mexican sage	<i>Salvia mexicana</i>
Mexican tarragon	<i>Tagetes lucida</i>
Mexican tulip poppy	<i>Hunnemannia fumarifolia</i>
Mexican weeping bamboo	<i>Otatea acuminata (aztecorum)</i>
Mexican/white evening primrose	<i>Oenothera speciosa</i>
Meyer's Yew	<i>Taxus 'Meyeri'</i>
milk bush	<i>Euphorbia tirucalli</i>
milk/silk weed	<i>Asclepias (wild species)</i>
mindinao gum	<i>Eucalyptus deglupta</i>
mint	<i>Mentha spp.</i>
mint bush	<i>Prostanthera denticulata</i>
mirror plant	<i>Coprosma repens</i>
mission manzanita	<i>Xylococcus bicolor</i>

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mistflower	<i>Eupatorium</i> spp.
mock orange	<i>Pittosporum</i> tobira
Modesto ash	<i>Fraxinus velutina</i> 'Modesto'
Mohave poplar	<i>Populus</i> 'Mohavensis'
Mohawk viburnum	<i>Viburnum</i> 'Mohawk'
mondo grass	<i>Ophiopogon japonicus</i>
monkey flower	<i>Mimulus</i> spp. (shrubby)
monkey flower	<i>Mimulus</i> spp. (herbaceous)
monkey puzzle tree	<i>Araucaria araucana</i>
monochaetum	<i>Monochaetum</i> <i>volcanicum</i>
montbretia	<i>Crocrosmia</i> hybrids (<i>Tritonia</i>)
Monterey cypress	<i>Cupressus macrocarpa</i>
Monterey pine	<i>Pinus radiata</i>
Montezuma cypress	<i>Taxodium mucronatum</i>
Montezuma pine	<i>Pinus montezumae</i>
Moor grass	<i>Molinia caerulea</i>
Moor grass	<i>Sesleria</i> spp.
moraea	<i>Moraea</i> spp. (summer growing)
moraine ash	<i>Fraxinus</i> 'Moraine'
morea	<i>Moraea</i> spp. (winter growing)
Moreton Bay chestnut	<i>Castanospermum australe</i>
Moreton Bay fig	<i>Ficus macrophylla</i>
Moroccan daisy	<i>Pyrethropsis hosmariense</i>
mosquito plant	<i>Agastache cana</i>
moss pink	<i>Phlox subulata</i>
moss pink/campion	<i>Silene</i> spp.
moss verbena	<i>Verbena tenuisepta</i>
mother-in-law's tongue etc.	<i>Gasteria</i> spp.
mother fern	<i>Asplenium bulbiferum</i>
Mount Atlas daisy	<i>Anaclycus pyrethrum</i> var <i>depressus</i>
mountain alyssum	<i>Alyssum montanum</i>
mountain ash	<i>Sorbus hupehensis</i>
mountain ironwood	<i>Cercocarpus betuloides</i>
mountain marigold	<i>Tagetes lemmoni</i>
mountain pennyroyal	<i>Monardella odoratissima</i>
mountain sage	<i>Salvia regla</i>
mountain wood rose	<i>Rosa woodsii</i> var. <i>ultramontana</i>
Mrs. Beard sage	<i>Salvia</i> 'Mrs. Beard'
Mueller's fescue	<i>Festuca muelleri</i>
mugo pine	<i>Pinus mugo</i>
mulga	<i>Acacia</i> <i>aneura</i>
mullein	<i>Verbascum bombyciferum</i>
myoporum	<i>Myoporum laetum</i>
myoporum	<i>Myoporum parvifolium</i> & cvs.
Nageia	<i>Nageia nagi</i> (<i>Podocarpus nagi</i>)
naked coral tree	<i>Erythrina americana</i> (<i>E.coralloides</i>)
naked lady	<i>Amaryllis belladonna</i>
Narihira bamboo	<i>Semiarundinaria fastuosa</i>
narrow leaf rosewood	<i>Vauquelinia corymbosa</i> var. <i>heterodon</i>
nasturtium	<i>Tropaeolum majus</i>
Natal coral tree	<i>Erythrina humeana</i>
Natal plum	<i>Carissa macrocarpa</i> (prost. cvs.)
Natal plum	<i>Carissa</i> spp.
native fleabane	<i>Erigeron divergens</i>
navelwort	<i>Omphalodes cappadocica</i>
nealy cup sage	<i>Salvia farinacea</i>

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nectarine	
needleleaf acacia	<i>Acacia rigens</i>
neem	<i>Azadirachta indica</i>
Nepal holly	<i>Ilex integra</i>
nerine	<i>Nerine spp.</i>
net bush	<i>Calothamnus quadrifidus</i>
Nevin mahonia	<i>Mahonia nevinii</i>
New Zealand cabbage tree	<i>Cordyline australis</i>
New Zealand cassia/senna	<i>Senna bicapsularis</i> (<i>Cassia candalleana</i>)
New Zealand Christmas tree	<i>Metrosideros excelsa</i>
New Zealand flax	<i>Phormium tenax</i>
New Zealand laurel	<i>Corynocarpus laevigata</i>
New Zealand tea tree	<i>Leptospermum scoparium</i>
Newell cestrum	<i>Cestrum fasciculatum</i> var. 'Newellii'
Nichol's willow leaf peppermint	<i>Eucalyptus nicholii</i>
night jessamine	<i>Cestrum nocturnum</i>
Nikau palm	<i>Rhopalostylis sapida</i>
nodding feather grass	<i>Stipa cernua</i>
nodding needlegrass	<i>Nassella cernua</i>
nodding pincushion	<i>Leucospermum cordifolium</i>
Norfolk Island pine	<i>Araucaria heterophyla</i>
Norfolk palm	<i>Rhopalostylis baueri</i>
Norway maple	<i>Acer platanoides</i>
Norway spruce	<i>Picea abies</i>
Nutall's scrub oak	<i>Quercus dumosa</i>
oakleaf hydrangea	<i>Hydrangea quercifolia</i>
obedient plant	<i>Physostegia virginiana</i>
O'Connors legume(revegetation use)	<i>Trifolium fragiferum</i> O'Connor
O'Connors legume(landscape use)	<i>Trifolium fragiferum</i> O'Connor
ocotillo	<i>Fouquieria splendens</i>
Okame-Zaza bamboo	<i>Shibatea kumasasa</i>
Okinawan holly	<i>Ilex dimorphophylla</i>
old man cactus	<i>Cephalocereus spp.</i>
oleander	<i>Nerium oleander</i>
olive	<i>Olea europaea</i>
olympic hypericum	<i>Hypericum olympicum</i>
orange cestrum	<i>Cestrum auranticum</i>
orange clock vine	<i>Thunbergia gregorii</i>
orange jessamine	<i>Murraya paniculata</i>
orange jubilee tecoma	<i>Tecoma 'Orange Jubilee'</i>
orange sneezeweed	<i>Helenium hoopesii</i>
orange, lemon etc.	<i>Citrus spp.</i>
Oregon alder	<i>Alnus oregona</i>
Oregon ash	<i>Fraxinus latifolia</i>
Oregon fleabane	<i>Erigeron speciosus</i>
Oregon grape	<i>Mahonia aquifolium</i>
organ pipe cactus	<i>Stenocereus thurberi</i> (<i>Lemaireocereus</i>)
oriental arborvitae	<i>Platycladus orientalis</i>
oriental poppy	<i>Papaver orientale</i>
oriental spruce	<i>Picea orientalis</i>
ornamental asparagus	<i>Asparagus spp.</i>
orono	<i>Azara dentata</i>
orthrosanthus	<i>Orthrosanthus chimboracensis centroamericanus</i>
orthrosanthus	<i>Orthrosanthus multiflorus</i>
ostrich fern	<i>Matteuccia struthiopteris</i>
oyama magnolia	<i>Magnolia sieboldii</i>

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Ozark sundrops	<i>Oenothera macrocarpa</i>
ozothamnus	<i>Ozothamnus rosemarinifolius(Helichrysum)</i>
Pacific wax myrtle	<i>Myrica californica</i>
pacifica saltbush	<i>Myoporum X 'Pacificum'</i>
painted daisy	<i>Tanacetum coccinum (Pyrethrum roseum)</i>
painted lady fern	<i>Athyrium nipponicum 'Pictum'</i>
palm grass	<i>Setaria palmifolia</i>
palm lily	<i>Cordyline stricta</i>
palmetto	<i>Sabal spp.</i>
palo blanca	<i>Lysiloma candida</i>
palo blanco	<i>Acacia willardiana</i>
palo Colorado	<i>Luma apiculata</i>
pampas grass	<i>Cortaderia sellowana cvs.</i>
pampas lily	<i>Habranthus robustus (Zephyranthes)</i>
paper flower	<i>Psilostrophe cooperi</i>
paper flower	<i>Psilostrophe tagetina</i>
paperbark maple	<i>Acer griseum</i>
Paraguay nightshade/blue potato bush M	<i>Lycianthus rantonnetii</i>
parrot's beak	<i>Clianthus puniceus</i>
Pasque flower	<i>Pulsatilla vulgaris (Anemone pulsatilla)</i>
passion vine	<i>Passiflora spp.</i>
pattersonia	<i>Pattersonia drummondii</i>
peach	
peach (low chill only)	
pearl acacia	<i>Acacia podalyriifolia</i>
pearl bluebush	<i>Maireana sedifolia</i>
pecan	<i>Carya illinoensis</i>
peegee hydrangea	<i>Hydrangea paniculata 'Grandiflora'</i>
pennatula acacia	<i>Acacia pennatula</i>
penstemon (hybrids)	<i>Penstemon hybrids</i>
penstemon (wild)	<i>Penstemon wild spp.</i>
peony	<i>Paeonia spp.</i>
pepper tree	<i>Drimys lanceolata</i>
peppermint-scented geranium	<i>Pelargonium tomentosum</i>
peppermint tree	<i>Agonis flexuosa</i>
perennial cornflower	<i>Centaurea montana</i>
perennial lobelia	<i>Lobelia richmondensis</i>
periwinkle	<i>Vinca major</i>
periwinkle	<i>Vinca minor</i>
Persian knapweed	<i>Centaurea dealbata</i>
Persian lilac	<i>Syringa X persica</i>
Persian witch hazel	<i>Parrotia persica</i>
Peruvian apple cactus	<i>Cereus peruvianus</i>
Peruvian lily	<i>Alstroemeria spp.</i>
Peruvian lily	<i>Scilla peruviana</i>
Peruvian old man cactus	<i>Epostoa lantana</i>
Peruvian pepper	<i>Schinus polygamous</i>
Peruvian verbena	<i>Verbena peruviana</i>
phanera	<i>Bauhinia corymbosa</i>
phlomis (caballeroi)	<i>Phlomis caballeroi</i>
phlomis (cashmeriana)	<i>Phlomis cashmeriana</i>
phlomis (cretica)	<i>Phlomis cretica</i>
phlomis (italica)	<i>Phlomis italicica</i>
phlomis (lanata)	<i>Phlomis lanata</i>
phlomis (purpurea)	<i>Phlomis purpurea</i>
phlomis (russeliana)	<i>Phlomis russeliana</i>

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phlomis (tuberosa)	<i>Phlomis tuberosa</i>
phlox	<i>Phlox</i> (shrubby cvs.)
pichi	<i>Fabiana imbricana</i>
pigmy date palm	<i>Phoenix roebelenii</i>
pimpernel	<i>Anagallis monellii</i>
pin oak	<i>Quercus palustris</i>
pincushion flower	<i>Scabiosa</i> spp.
pindo palm	<i>Butia capitata</i>
pine-leafed bottlebrush	<i>Callistemon pinifolius</i>
pineapple guava	<i>Acca sellowiana</i> (<i>Feijoa sellowiana</i>)
pineapple lily	<i>Eucomis bicolor</i> hybrids
pineapple sage	<i>Salvia elegans</i>
pinellia	<i>Pinellia ternata</i>
pink jasmine	<i>Jasminum polyanthum</i>
pink powder puff	<i>Calliandra haematocephala</i>
pink tips/white bottlebrush	<i>Callistemon salignus</i>
pink/carnation	<i>Dianthus</i> spp.
pink/lavender trumpet tree	<i>Tabebuia impetiginosa</i> (ipe)
pink/yellow calla lily	<i>Zantedeschia</i> spp. & hybrids
pink-flowering sumac	<i>Rhus lentii</i>
pink evening primrose	<i>Oenothera speciosa</i> 'Rosea'
pink melaleuca	<i>Melaleuca nesophila</i>
pink trumpet vine	<i>Podranea ricasoliana</i>
pinyon pine	<i>Pinus edulis</i>
pipestem clematis	<i>Clematis lasiantha</i>
pistachio	<i>Pistacia vera</i>
pithecoctenium	<i>Pithecoctenium crucigerum</i>
plantain lily	<i>Hosta</i> spp.
plum	
plum (low chill only)	
plume albizia	<i>Albizia distachya</i>
plume grass	<i>Erianthus ravennae</i>
plume poppy	<i>Macleaya</i> spp.
plyody	<i>Polypodium</i> (native spp.)
poinsettia	<i>Euphorbia pulcherrima</i>
polypody	<i>Polypodium</i> (subtropical spp.)
pomegranate	<i>Punica granatum</i>
ponderosa pine	<i>Pinus ponderosa</i>
poor knight's lily	<i>Xeronema calistemon</i>
poor man's orchid	<i>Neomarica caerulea</i>
poor man's rhododendron	<i>Impatiens sodeni</i> (oliveri)
poppy	<i>Papaver pilosum</i>
porcupine flower	<i>Centratherum punctatum</i>
Portugal laurel	<i>Prunus lusitanica</i>
potato vine	<i>Solanum jasminoides</i>
poverty weed	<i>Iva hayesiana</i>
Prague viburnum	<i>Viburnum X pragense</i>
prairie flameleaf sumac	<i>Rhus lanceolata</i>
prairie sage	<i>Salvia azurea grandiflora</i>
prairie zinnia	<i>Zinnia grandiflora</i>
pratia	<i>Pratia angulata</i>
prickly-leaved paperback	<i>Melaleuca styphelioides</i>
prickly heath	<i>Gaultheria mucronata</i> (<i>Pernettya mucronata</i>)
prickly pear/cholla	<i>Opuntia</i> spp.
pride of Madeira	<i>Echium candicans</i> (<i>fastuosum</i>)
pride of Teneriffe	<i>Echium pininana</i>

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primrose jasmine	<i>Jasminum mesnyi</i>
primrose tree	<i>Lagunaria patersonii</i>
princess flower	<i>Tibuchina urvilleana (semidecandra)</i>
prostrate acacia	<i>Acacia redolens</i>
protea	<i>Protea spp.</i>
prune	
Pt. Reyes wallflower	<i>Erysimum suffrutescens (concinnum)</i>
puka	<i>Griselinia lucida</i>
puka	<i>Meryta sinclairii</i>
purple heart setcreasea	<i>Setcreasea pallida 'Purple Heart'</i>
purple hopseed bush	<i>Dodonaea viscosa 'Purpurea'</i>
purple magesty sage	<i>Salvia 'Purple Majesty'</i>
purple meadow rue	<i>Thalictrum aquilegifolium</i>
purple mullein	<i>Verbascum phoeniceum</i>
purple needlegrass	<i>Nassella pulchra</i>
purple nightshade	<i>Solanum xanti</i>
purple orchid tree	<i>Bauhinia variegata (purpurea)</i>
purple orchid vine	<i>Mascagnia lilacina</i>
purple prairie clover	<i>Dalea gattingeri (Petalostemum purpureum)</i>
purple rain sage	<i>Salvia verticillata 'Purple Rain'</i>
purple sage	<i>Salvia dorrii</i>
purple sage	<i>Salvia leucophylla</i>
purple sage, Texas ranger etc.	<i>Leucophyllum spp.</i>
purple tower echium	<i>Echium 'Purple Tower'</i>
purple wings	<i>Dalechampia dioscorifolia</i>
purple winter creeper	<i>Euonymus fortunei</i>
purple woodrush	<i>Luzula purpurea</i>
purple/burgundy fountain grass	<i>Pennisetum setaceum cvs,</i>
pussy toes	<i>Antennaria rosea</i>
puya	<i>Puya spp.</i>
quaking grass	<i>Briza media</i>
queen palm	<i>Syagrus romanzoffiana</i>
queen's tears etc.	<i>Billbergia spp.</i>
queens wreath	<i>Petrea volubilis</i>
Queensland bottle tree	<i>Brachychiton rupestris</i>
Queensland kauri	<i>Agathis robusta</i>
Queensland lace bark	<i>Brachychiton discolor</i>
Queensland pittosporum	<i>Pittosporum rhombifolium</i>
Queensland umbrella tree	<i>Schlefflera actinophylla (Brassaia)</i>
rabbit brush	<i>Chrysothamnus nauseosus albicaulis</i>
rabbit's foot fern	<i>Phlebodium aureum (Polypodium aureum)</i>
Raleigh westringia	<i>Westringia raleighi</i>
rama parda	<i>Ruellia californica</i>
ravanea	<i>Ravanea rivularis</i>
raywood ash	<i>Fraxinus oxycarpa 'Raywood'</i>
red-barked dogwood	<i>Cornus alba</i>
red-veined enkianthus	<i>Enkianthus campanulatus</i>
red buckeye	<i>Aesculus pavia</i>
red cap gum	<i>Eucalyptus erythrocorys</i>
red centered hibiscus	<i>Alyogyne hakeifolia</i>
red cestrum	<i>Cestrum elegans</i>
red flowering currant	<i>Ribes sanguineum</i>
red flowering gum	<i>Eucalyptus flicifolia</i>
red ginger	<i>Hedychium greenei</i>
red ginger lily	<i>Hedychium coccinum</i>
red gum	<i>Eucalyptus camaldulensis</i>

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red horsechestnut	<i>Aesculus X carnea</i>
red hot poker	<i>Kniphofia uvaria</i>
red huckleberry	<i>Vaccinium parvifolium</i>
red iron bark	<i>Eucalyptus sideroxylon</i>
red justicia	<i>Justicia candicans</i>
red oak	<i>Quercus rubra</i>
red orchid bush	<i>Bauhinia galpinii</i>
red osier dogwood	<i>Cornus stolonifera</i>
red root	<i>Wachendorfia thyrsiflora</i>
red shanks/ribbonwood	<i>Adenostoma sparsifolium</i>
red tubeflower	<i>Iochroma fuchsioides</i>
red valerian	<i>Centranthus ruber</i>
red/ yellow yucca	<i>Hesperaloe parviflora</i>
redberry	<i>Rhamnus croceus</i>
redwood violet	<i>Viola sempervirens</i>
Reeves skimmia	<i>Skimmia reevesiana</i>
reineckia	<i>Reineckia carnea</i>
rhagodia	<i>Rhagodia deltophylla</i>
rhododendron	<i>Rhododendron spp.</i>
rhodophiala	<i>Rhodophiala bifida</i>
ribbon bush	<i>Hypoestes aristata</i>
ribbon grass	<i>Phalaris spp. (ornamental)</i>
rice flower	<i>Pimelea ferruginea</i>
rice flower	<i>Pimelea prostrata</i>
rice paper plant	<i>Tetrapanax papyrifer</i>
Richmond begonia	<i>Begonia 'Richmondensis'</i>
rigidula acacia	<i>Acacia rigidula</i>
ring bellflower	<i>Symphyandra spp.</i>
river she-oak	<i>Casuarina cunninghamiana</i>
river/red birch	<i>Betula nigra</i>
rock cress	<i>Aubrieta deltoidea</i>
rock jasmine	<i>Androsace lanuginosa</i>
rock soapwort	<i>Saponaria ocymoides</i>
rock verbena	<i>Verbena tenera (pulchella)</i>
rockcress	<i>Arabis spp.</i>
rockrose	<i>Cistus spp.</i>
rogersia (aesculifolia)	<i>Rodgersia aesculifolia</i>
rogersia (pinnata)	<i>Rodgersia pinnata</i>
rohdea	<i>Rohdea japonica</i>
roscoea	<i>Roscoea purpurea</i>
rose	<i>Rosa hybrids..bush</i>
rose campion/crown pink	<i>Lychnis coronaria</i>
rose cone flower/drumsticks	<i>Isopogon formosus</i>
rose grass	<i>Rhodohypoxis spp.</i>
rose of Sharon	<i>Hibiscus syriacus</i>
roseleaf sage	<i>Salvia involucrata</i>
rosemary	<i>Rosmarinus officinalis</i>
round leaf mint bush	<i>Prostanthera rotundifolia</i>
Rowall hypericum	<i>Hypericum 'Rowallane'</i>
Roxburgh fig	<i>Ficus auriculata</i>
royal bluebell	<i>Wahlenbergia gloriosa</i>
royal climber	<i>Oxera pulchella</i>
royal purple autumn sage	<i>Salvia muelleri</i>
royal trumpet vine	<i>Distictis 'Rivers'</i>
royal/flowering fern	<i>Osmunda regalis</i>
rubber plant	<i>Ficus elastica</i>

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ruby grass	<i>Rhynchelytrum neriglume</i>
rush	<i>Juncus</i> spp.
Russell lupines	<i>Lupinus</i> (Russell hybrids)
Russian olive	<i>Elaeagnus angustifolia</i>
Russian sage	<i>Perovskia</i> spp.
rusty leaf fig	<i>Ficus rubiginosa</i>
Ryukyu Island palm	<i>Arenga engleri</i>
S. California black walnut	<i>Juglans californica</i>
sage (forskaohlei/hians)	<i>Salvia forskaohlei</i> (hians)
sage (glechomaefolia)	<i>Salvia glechomaefolia</i>
sage (iodantha)	<i>Salvia iodantha</i>
sage (jamensis cvs.)	<i>Salvia X jamensis</i> cvs.
sage (reptans)	<i>Salvia reptans</i>
sage (superba)	<i>Salvia X superba</i> hybrids & cvs.
sagebrush	<i>Artemisia</i> spp. (shrubby)
sago palm	<i>Cycas revoluta</i>
saguaro	<i>Carnegiea gigantea</i>
sakaki	<i>Cleyera japonica</i>
salal	<i>Gaultheria shallon</i>
Salt River mallet	<i>Eucalyptus sargentii</i>
saltbush	<i>Atriplex</i> spp.
San Clemente Island bush mallow	<i>Malacothamnus clementinus</i>
San Diego County viguiera	<i>Viguiera laciniata</i>
San Diego mountain mahogany	<i>Cercocarpus minutiflorus</i>
San Diego willowy mint	<i>Monardella linoides</i> ssp. <i>viminea</i>
San Jose hesper palm	<i>Brahea brandegeei</i>
San Miguel Mountain sage	<i>Salvia munzii</i>
San Miguel savory	<i>Satureja chandleri</i>
sandanqua viburnum	<i>Viburnum suspensum</i>
sandwort	<i>Arenaria montana</i>
Santa Cruz Island gooseberry	<i>Ribes thacherianum</i>
sapphire dragon tree	<i>Paulownia kawakamii</i>
Saratoga laurel	<i>Laurus 'Saratoga'</i>
Sargent cherry	<i>Prunus sargentii</i>
sasanqua camellia	<i>Camellia sasanqua</i>
saucer magnolia	<i>Magnolia X soulangiana</i>
savory	<i>Satureja mexicana</i>
saw leaf zelkova	<i>Zelkova serrata</i>
saxifrage	<i>Saxifraga</i> spp.
scarlet monardella	<i>Monardella macrantha</i>
scarlet oak	<i>Quercus coccinea</i>
scarlet red maple	<i>Acer rubrum</i>
scarlet sage	<i>Salvia gesneriflora</i>
Scotch elm	<i>Ulmus glabra</i>
Scotch heather	<i>Calluna vulgaris</i>
Scotch moss	<i>Sagina subulata</i> 'Aurea'
Scotch pine	<i>Pinus sylvestris</i>
screwbean mesquite	<i>Prosopis pubescens</i>
sea dahlia	<i>Coreopsis maritima</i>
sea foam	<i>Holodiscus discolor</i>
sea holly	<i>Eryngium pandanifolium</i>
sea holly	<i>Eryngium variifolium</i>
sea oats	<i>Chasmanthium latifolium</i>
sea pink	<i>Armeria alliacea</i>
sea pink	<i>Armeria maritima</i>
sea squill	<i>Urginea maritima</i>

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sea urchin tree	<i>Hakea laurina</i>
sedge	<i>Carex</i> (garden spp.)
self heal	<i>Prunella</i> spp.
semiaquilegia	<i>Semiaquilegia ecalcarata</i>
Senegal date palm	<i>Phoenix reclinata</i>
senna/cassia (odorata)	<i>Senna odorata</i> (<i>Cassia odorata</i>)
senna/cassia (spectabilis/excelsa)	<i>Senna spectabilis</i> (<i>Cassia excelsa</i>)
senna/cassia didymobotrya	<i>Senna didymobotrya</i> (<i>Cassia didymobotrya</i>)
sensitive fern	<i>Onoclea sensibilis</i>
Serbian bell flower	<i>Campanula poscharskyana</i>
Serbian spruce	<i>Picea omorika</i>
serissa	<i>Serissa foetida</i>
Shasta daisy	<i>Leucanthemum X superbum</i>
shaving brush	<i>Pseudobomax ellipticum</i>
sheild/wood fern	<i>Dryopteris arguta</i>
shell bush	<i>Orthosiphon labiatus</i>
shell ginger	<i>Alpinia zerumbet</i>
Sherwood dwarf abelia	<i>Abelia 'Sherwoodii'</i>
shiny xylosma	<i>Xylosma congestum</i>
showy banksia	<i>Banksia speciosa</i>
showy jasmine	<i>Jasminum floridum</i>
shrimp plant	<i>Justicia brandegeana</i>
shrub aster	<i>Felicia fruticosa</i>
shrub pincushion	<i>Pterocephalus dumetorum</i>
shrubby cassia	<i>Cassia wizlizeni</i>
shrubby dogweed	<i>Dyssodia acerosa</i>
Shumard red oak	<i>Quercus shumardii</i>
Siberian bugloss	<i>Brunnera macrophylla</i>
Siberian cypress	<i>Microbiota decussata</i>
Siberian elm	<i>Ulmus pumila</i>
Siberian iris	<i>Iris</i> spp.
Siberian wallflower	<i>Erysimum hyeraciifolium</i>
sideoats gramma	<i>Bouteloua curtipendula</i>
sideritis	<i>Sideritis syriaca</i>
Sierra sundrop	<i>Calyophus hartwegii</i>
silk oak	<i>Grevillea robusta</i>
silk tree	<i>Albizia julibrissin</i>
silver buffaloberry	<i>Shepherdia argentea</i>
silver button plant	<i>Cotula lineariloba</i>
silver cassia/senna	<i>Senna phyllodenia</i> (<i>Cassia phyllodenia</i>)
silver dichondra	<i>Dichondra argenta</i>
silver dollar gum	<i>Eucalyptus polyanthemos</i>
silver gimlet	<i>Eucalyptus campaspe</i>
silver lace vine	<i>Polygonum aubertii</i>
silver lupine	<i>Lupinus albifrons</i>
silver maple	<i>Acer saccharinum</i>
silver mountain gum	<i>Eucalyptus pulverulenta</i>
silver sage	<i>Salvia argentea</i>
silver spear	<i>Astelia nervosa chathamica</i>
silver tree	<i>Leucadendron argenteum</i>
silver vein creeper	<i>Parthenocissus henryana</i>
silver wattle	<i>Acacia dealbata</i>
silverberry	<i>Elaeagnus pungens</i>
silvery yarrow	<i>Achillea clavennae</i>
Sinaloan blue sage	<i>Salvia sinaloensis</i>
single leaf pinyon pine	<i>Pinus monophylla</i>

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sissoo	<i>Dalbergia sissoo</i>
sisyrinchium (convolutum)	<i>Sisyrinchium convolutum</i>
sisyrinchium (striatum)	<i>Sisyrinchium striatum</i>
sky flower	<i>Duranta erecta (D. repens)</i>
sky flower	<i>Thunbergia grandiflora</i>
slipper flower/slipperwort	<i>Calceolaria spp.</i>
small flowered clematis	<i>Clematis pauciflora</i>
Smith's brush cherry	<i>Syzygium smithii</i>
Smith's tecoma	<i>Tecoma X smithii</i>
smoke tree	<i>Cotinus coggygria</i>
smoke tree	<i>Psorothamnus spinosa (Dalea spinosa)</i>
smooth Arizona cypress	<i>Cupressus arizonica var. glabra</i>
snail vine	<i>Vigna caracalla</i>
snakeweed	<i>Gutierrezia sarothrae</i>
snapdragon vine	<i>Asarina antirrhiniflora (Maurandya)</i>
snow in summer	<i>Cerastium tomentosum</i>
snowball hydrangea	<i>Hydrangea arborescens</i>
snowberry	<i>Symphoricarpu s albus</i>
snowdrop bush	<i>Styrax officinale redivivus</i>
snowdrop windflower	<i>Anemone sylvestris</i>
Snowy River wattle	<i>Acacia boormanii</i>
snowy woodrush	<i>Luzula nivea</i>
soapbark tree	<i>Quillaja saponaria</i>
society garlic	<i>Tulbaghia violacea</i>
soft muhly	<i>Muhlenbergia pubescens</i>
Soloman's seal	<i>Polygonatum odoratum (japonicum)</i>
Sonoma sage	<i>Salvia 'Dara's Choice'</i>
Sonora cercidium	<i>Cercidium 'Sonorae'</i>
Sonoran justicia	<i>Justicia sonorensis</i>
Sonoran palo verde	<i>Cercidium praecox</i>
sorrel/shamrock	<i>Oxalis spp.</i>
sour gum/tupelo	<i>Nyssa sylvatica</i>
sourwood tree	<i>Oxydendrum arboreum</i>
South African jasmine	<i>Jasminum angulare</i>
South African mallow	<i>Anisodontea X hypomadarum</i>
southern live oak	<i>Quercus virginiana</i>
southern magnolia	<i>Magnolia grandiflora</i>
southern sword fern	<i>Nephrolepis cordifolia</i>
southwest redbud	<i>Cercis reniformis</i>
Spanish broom	<i>Spartium junceum</i>
Spanish fir	<i>Abies pinsapo</i>
Spanish oak	<i>Quercus texana</i>
Spanish shawl	<i>Heterocentron elegans</i>
Spanish/Dutch iris	<i>Iris spp.</i>
spathiphyllum	<i>Spathiphyllum spp.</i>
spear lily	<i>Doryanthes palmeri</i>
speedwell	<i>Veronica repens</i>
spicy jatropha	<i>Jatropha integerrima</i>
spiderwort	<i>Tradescantia X andersoniana</i>
spiderwort	<i>Tradescantia pallida</i>
spike sage	<i>Salvia confertiflora</i>
spiny headed mat rush	<i>Lomandra longifolia</i>
spiraea	<i>Spiraea spp.</i>
spotted deadnettle	<i>Lamium maculatum</i>
spotted emu bush	<i>Eremophila maculata</i>
spotted gum	<i>Eucalyptus maculata</i>

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spring cinquefoil	<i>Potentilla neumanniana</i> (<i>tabernaemontani</i>)
spring star flower	<i>Ipheion uniflorum</i> (<i>Tritelia</i>)
square-stemmed bamboo	<i>Chimonobambusa quadrangularis</i>
squawbush	<i>Rhus trilobata</i>
squirrel's foot fern	<i>Davallia trichomanoides</i>
St.Johnswort	<i>Hypericum 'Hidecote'</i>
staghorn sumac	<i>Rhus typhina</i>
stalked bulbine	<i>Bulbine frutescens</i>
standing cypress	<i>Ipomopsis rubra</i>
star jasmine	<i>Trachelospermum jasminoides</i>
star lily	<i>Arthropodium cirratum</i>
star magnolia	<i>Magnolia stellata</i>
statice	<i>Goniolimon incanum</i> (<i>Limonium speciosum</i>)
statice	<i>Limonium perezii</i>
stemless carline thistle	<i>Carlina acaulis</i>
stenomesson	<i>Stenomesson variegatum</i>
Stephan jasmine	<i>Jasminum X stephanense</i>
stokes aster	<i>Stokesia laevis</i>
stone crop	<i>Sedum</i> spp.
straw flower	<i>Helichrysum bracteatum</i>
straw flower	<i>Plecostachys serpyllifolia</i> (<i>Helichrysum</i>)
strawberry	<i>Fragaria</i> spp.
strawberry guava	<i>Psidium littorale</i> var. <i>longipes</i>
strawberry snowball	<i>Dombeya cacuminum</i>
strawberry tree	<i>Arbutus unedo</i>
Sturt's cassia/senna	<i>Senna sturtii</i> (<i>Cassia sturtii</i>)
subporosa acacia	<i>Acacia subporosa</i>
sugar bush	<i>Rhus ovata</i>
sugar gum	<i>Eucalyptus cladocalyx</i>
sugar maple	<i>Acer saccharum</i>
sugar scoop	<i>Tiarella wherryi</i>
summer holly	<i>Arctostaphylos diversiloba</i> (<i>Comarostaphylis diversiloba</i>)
summer hyacinth	<i>Galtonia candicans</i>
summer snow	<i>Plumbago scandens</i>
summer snowflake	<i>Leucojum aestivum</i>
summersweet	<i>Clethra alnifolia</i>
sun rose	<i>Halimium lasianthum</i>
sutera	<i>Sutera</i> spp.
swamp honey-myrtle	<i>Melaleuca squamea</i>
swamp jessamine	<i>Gelsemium rankinii</i>
swamp mahogany	<i>Eucalyptus robusta</i>
swamp mallee	<i>Eucalyptus spathulata</i>
swamp paper bark	<i>Melaleuca rhamphophylla</i>
swamp sunflower	<i>Helianthus angustifolius</i>
swamp weed	<i>Selliera radicans</i>
Swan River daisy	<i>Brachycome</i> spp.
Swedish ivy	<i>Plectranthus</i> spp.
sweet acacia	<i>Acacia farnesiana</i>
sweet bay	<i>Laurus nobilis</i>
sweet box	<i>Sarcococca confusa</i>
sweet flag	<i>Acorus gramineus</i>
sweet garlic	<i>Tulbaghia fragrans</i>
sweet gum	<i>Liquidambar styraciflua</i>
sweet hakea	<i>Hakea suaveolens</i>
sweet olive/osmanthus	<i>Osmanthus</i> spp.
sweet pea shrub	<i>Polygala X dalmaisiana</i>

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sweet sarcococca	<i>Sarcococca hookerana humilis</i>
sweet shade	<i>Hymenosporum flavum</i>
sweet shade	<i>Tetraneuris acaulis (Hymenoxys acaulis)</i>
sweet vernal grass	<i>Anthoxanthum odoratum</i>
sweet viburnum	<i>Viburnum odoratissimum</i>
sweet violet	<i>Viola odorata</i>
sweet woodruff	<i>Galium odoratum</i>
switch grass	<i>Panicum virgatum cvs.</i>
switch grass	<i>Panicum(native spp.)</i>
sword fern	<i>Polystichum californicum</i>
Sydney golden wattle	<i>Acacia longifolia</i>
Sykes coral tree	<i>Erythrina X sykesii</i>
takil fan palm	<i>Trachycarpus takil</i>
tall aristea	<i>Aristea major</i>
tall baeckia	<i>Baeckea virgata</i>
tamarisk	<i>Tamarix spp.</i>
tanbark oak	<i>Lithocarpus densiflorus</i>
tansy	<i>Tanacetum haradjanii</i>
tarata	<i>Pittosporum eugenoides</i>
tarragon/angel's hair etc.	<i>Artemisia spp. (herbaceous)</i>
Tartarian statice	<i>Gonilimon tataricum (Limonium tataricum)</i>
Tasmanian tree fern	<i>Dicksonia antarctica</i>
tatarian honeysuckle	<i>Lonicera tatarica</i>
tawhiwhi	<i>Pittosporum tenuifolium</i>
tea tree	<i>Leptospermum polygalifolium</i>
tea tree	<i>Leptospermum rotundifolium</i>
tea tree	<i>Leptospermum rupestre (humifusum)</i>
tea viburnum	<i>Viburnum setigerum</i>
tecate cypress	<i>Cupressus guadalupensis forbesii</i>
tecomanthe	<i>Tecomanthe speciosa</i>
tenaza	<i>Pithecellobium pallens</i>
Texas ebony	<i>Pithecellobium flexicaule</i>
Texas firecracker bush	<i>Hamelia patens</i>
Texas mountain laurel	<i>Sophora secundiflora</i>
Texas needle grass	<i>Nassella tenuissima</i>
Texas olive	<i>Cordia boissieri</i>
Texas red oak	<i>Quercus buckleyi</i>
Texas sage	<i>Salvia coccinea</i>
Texas sycamore	<i>Platanus occidentalis 'Glabrata'</i>
thread leaf false aralia	<i>Schefflera elegantissima (Dizygotheca)</i>
threadleaf coreopsis	<i>Coreopsis verticillata cvs.</i>
thrift	<i>Armeria caespitosa (A. juniperifolia)</i>
thrift	<i>Armeria setacea</i>
throatwart	<i>Trachelium caeruleum</i>
thunbergia (mysorensis)	<i>Thunbergia mysorensis</i>
thunbergia (battiscombei)	<i>Thunbergia battiscombei</i>
thyme	<i>Thymus spp.</i>
thyme honey-myrtle	<i>Melaleuca thymifolia</i>
ti plant	<i>Cordyline terminalis</i>
tickseed	<i>Bidens triplinervia</i>
tiger grass	<i>Thysanolaena maxima</i>
tipu tree	<i>Tipuana tipu</i>
toad lily	<i>Tricyrtis hirta</i>
toadflax	<i>Linaria purpurea</i>
toadflax	<i>Linaria supina</i>
Tolleson's juniper	<i>Juniperus scopulorum'Tolleson'</i>

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toog	<i>Bischofia javanica</i>
torch cactus	<i>Echinopsis</i> spp. (<i>Trichocereus</i> spp.)
Torrey pine	<i>Pinus torreyana</i>
totara	<i>Podocarpus totara</i>
totem poles (lilac melaleuca)	<i>Melaleuca decussata</i>
tower of jewels	<i>Echium wildpretii</i>
toyon	<i>Heteromeles arbutifolia</i>
trailing daisy	<i>Wedelia trilobata</i>
trailing indigo bush	<i>Dalea greggii</i>
trailing lantana	<i>Lantana montevidensis</i> (<i>sellowiana</i>)
trailing rosemary	<i>Rosemarinus 'Prostratus'</i>
Transvaal daisy	<i>Gerbera jamesonii</i>
tree banksia	<i>Banksia integrifolia</i>
tree dahlia	<i>Dahlia imperialis</i>
tree euphorbia	<i>Euphorbia lambii</i>
tree ivy	<i>X Fatshedera lizei</i>
tree mallow	<i>Lavatera assurgentiflora</i>
tree of heaven	<i>Ailanthus altissima</i>
tree philodendron	<i>Philodendron bipinnatifidum</i> (<i>selloum</i>)
treebine	<i>Cissus trifoliata</i>
triangle palm	<i>Neodypsis decaryi</i>
triangleleaf bursage	<i>Ambrosia deltoidea</i>
trident maple	<i>Acer buergerianum</i>
trinidad flame bush	<i>Calliandra tweedii</i>
tritonia	<i>Tritonia</i> spp.
trixis	<i>Trixis californica</i>
true myrtle	<i>Myrtus communis</i>
trumpet creeper	<i>Campsis</i> spp.
trumpet honeysuckle	<i>Lonicera sempervirens</i>
tuberose	<i>Polyanthes tuberosa</i>
tufted (white) evening primrose	<i>Oenothera caespitosa</i>
tufted hairgrass	<i>Deschampsia caespitosa</i>
tulip tree	<i>Liriodendron tulipifera</i>
tulipwood	<i>Harpullia arborea</i>
Turk's cap	<i>Malvaviscus arboreus</i>
turpentine bush	<i>Ericameria laricifolia</i> (<i>Haplopappus</i>)
Turutu	<i>Dianella intermedia</i>
twinspur	<i>Diascia</i> spp.
twisted acacia	<i>Acacia schaffneri</i>
umbrella bamboo	<i>Thamnocalamus spathaceus</i> (<i>Fargesia murielae</i>)
umbrella catalpa	<i>Catalpa bungei</i>
umbrella plant/Indian rhubarb	<i>Darmera peltata</i>
umbrella sedge/papyrus	<i>Cyperis</i> spp.
valley oak	<i>Quercus lobata</i>
Vancouver gold genista	<i>Genista pilosa</i> (<i>Vancouver Gold</i>)
veitch magnolia	<i>Magnolia X veitchii</i>
velvet centaurea	<i>Centaurea gymnocarpa</i>
velvet honeysuckle	<i>Dicliptera suberecta</i>
velvet mesquite	<i>Prosopis velutina</i>
velvet slipper	<i>Sinningia tubiflora</i>
verbena (bonariensis)	<i>Verbena bonariensis</i>
verde vista coprosma	<i>Coprosma petriei</i> ' <i>Verde vista</i> '
veronica	<i>Veronica</i> spp.
veronica/speedwell	<i>Parahebe</i> spp.
vervian	<i>Verbena rigida</i>
viburnum (rhytidophylloides)	<i>Viburnum X rhytidophylloides</i>

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victorian box	<i>Pittosporum undulatum</i>
victorian dogwood	<i>Prostanthera lasianthos</i>
villebrunea	<i>Villebrunea pedunculata</i>
vine maple	<i>Acer circinatum</i>
vining bluebell	<i>Sollya parvifolia</i>
violet (<i>japonica</i>)	<i>Viola japonica</i>
violet trumpet vine	<i>Clytostoma callistigoides</i>
violet tubeflower	<i>Iochroma cyanea</i>
violet westringia	<i>Westringia glabra</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>
wallflower	<i>Erysimum cheiri</i> (<i>Cherianthus cheiri</i>)
wallflower	<i>Erysimum heliticum</i>
wallflower	<i>Erysimum linifolium</i>
wallflower	<i>Erysimum menziesii</i>
wallflower	<i>Erysimum pulchellum</i>
wandering Jew	<i>Tradescantia fluminensis</i>
waratah	<i>Telopea speciosissima</i>
Warley rose stone cress	<i>Aethionema armenium</i> 'Warley Rose'
water birch	<i>Betula fontinalis</i> (<i>occidentalis</i>)
water dropwort	<i>Oenanthe javanica</i>
watsonia	<i>Watsonia</i> spp.
Waverly sage	<i>Salvia</i> 'Waverly'
Wax begonia	<i>Begonia semperflorens</i>
weeping acacia	<i>Acacia pendula</i>
weeping bottle brush	<i>Callistemon viminalis</i>
weeping Chinese banyan	<i>Ficus benjamina</i>
weigelia	<i>Weigela florida</i>
Wenlock beauty wallflower	<i>Erysimum</i> 'Wenlock Beauty'
western Australia coral pea	<i>Hardenbergia comptoniana</i>
western catalpa	<i>Catalpa speciosa</i>
western cottonwood	<i>Populus fremontii</i>
western dog violet	<i>Viola adunca</i>
western dogwood	<i>Cornus nuttallii</i>
western hackberry	<i>Celtis reticulata</i>
western hazelnut	<i>Corylus cornuta californica</i>
western redbud	<i>Cercis occidentalis</i>
western spice bush	<i>Calycanthus occidentalis</i>
western sword fern	<i>Polystichum munitum</i>
western virgin's bower	<i>Clematis ligusticifolia</i>
westringia (<i>longifolia</i>)	<i>Westringia longifolia</i>
white alder	<i>Alnus rhombifolia</i>
white ash	<i>Fraxinus americana</i>
white barked Himalayan birch	<i>Betula utilis</i> var. <i>jaquemontii</i>
white breath of heaven	<i>Coleonema album</i>
white bursage	<i>Ambrosia dumosa</i>
white clover	<i>Trifolium repens</i>
white Florida anise-tree	<i>Illicium floridanum</i> 'Alba'
white floss silk tree	<i>Chorisia insignis</i>
white flowering currant	<i>Ribes indecorum</i>
white fringe tree	<i>Chionanthus virginicus</i>
white ginger lily	<i>Hedychium coronarium</i>
white ironbark	<i>Eucalyptus leucoxylon</i>
white mulberry	<i>Morus alba</i>
white rock rose	<i>Helianthemum appenium</i>
white sage	<i>Salvia apiana</i>
white sapote	<i>Casimiroa edulis</i>

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white striped dwarf bamboo	<i>Sasaella masamuniana albostriata</i>
white weigela	<i>Weigela coraeensis</i>
whitethorn acacia	<i>Acacia constricta</i>
whorlflower	<i>Morina longifolia</i>
wild ginger	<i>Asarum caudatum</i>
wild hyacinth	<i>Dichelostemma capitatum</i>
wild mock orange	<i>Philadelphus lewisii californicus</i>
wild rye	<i>Elymus spp. (also see Leymus spp.)</i>
wild rye	<i>Leymus spp. (also see Elymus spp.)</i>
willow	<i>Salix spp.</i>
willow acacia	<i>Acacia salicina</i>
willow pittosporum	<i>Pittosporum phillyraeoides</i>
Wilson holly	<i>Ilex X altaclarensis 'Wilsonii'</i>
Wilson melaleuca	<i>Melaleuca wilsonii</i>
windmill palm	<i>Trachycarpus fortunei</i>
winter blooming bergenia	<i>Bergenia crassifolia</i>
winter creeper	<i>Euonymus fortunei radicans</i>
winter daphne	<i>Daphne odora</i>
winter hazel	<i>Corylopsis spicata</i>
winter jasmine	<i>Jasminum nudiflorum</i>
winter sweet pea	<i>Swainsonia galegifolia</i>
winterberry	<i>Ilex verticillata</i>
winter's bark	<i>Drimys winteri</i>
wintersweet	<i>Chimonanthus praecox</i>
wire-netting bush	<i>Corokia cotoneaster</i>
wishbone bush	<i>Mirabilis californica</i>
wisteria	<i>Wisteria spp.</i>
wolfberry	<i>Lycium fremontii</i>
wong-lan	<i>Michelia doltsopa</i>
wonga wonga vine	<i>Pandorea pandorana</i>
wood fern	<i>Dryopteris erythrosora</i>
woolly bush	<i>Adenanthes drummondii</i>
woolly bush	<i>Adenanthes sericea</i>
woolly butterfly bush	<i>Buddleja marrubifolia</i>
woolly yarrow	<i>Achillea tomentosa</i>
woolly/mountain blue curls	<i>Trichostema lanatum</i>
wooly senna	<i>Senna multiglandulosa (Cassia tomentosa)</i>
wrinkled agastache	<i>Agastache rugosa</i>
Wynyabbie gem westringia	<i>Westringia 'Wynyabbie Gem'</i>
yaupon	<i>Ilex vomitoria</i>
Yeddo hawthorne	<i>Rhaphiolepis umbellata</i>
yellow archangel	<i>Lamiastrum galeobdolon</i>
yellow bells	<i>Tecoma stans</i>
yellow ginger	<i>Hedychium flavescens</i>
yellow mallow	<i>Pavonia praemorsa</i>
yellow oleander	<i>Thevetia peruviana</i>
yellow orchid vine	<i>Mascagnia macroptera</i>
yellow penstemmon	<i>Keckiella antirrhinoides</i>
yellow plume flower	<i>Justicia aurea</i>
yellow trumpet vine	<i>Anemopaegma chamberlainii</i>
yellow waxbells	<i>Kirengeshoma koreana</i>
yellow waxbells	<i>Kirengeshoma palmata</i>
yellow wood	<i>Podocarpus latifolius</i>
yerba buena	<i>Satureja douglasii</i>
yerba mansa	<i>Anemopsis californica</i>
yesterday today and tomorrow	<i>Brunfelsia pauciflora</i>

Common Names Index

COMMON NAME	BOTANICAL NAME
Yew (media cvs.)	<i>Taxus X media</i> cvs.
yew pine	<i>Podocarpus macrophyllus</i>
York gum	<i>Eucalyptus loxophleba</i>
yucca	<i>Yucca</i> spp.
zaluzinsky	<i>Zaluziansky katherinae</i>
zebra rush	<i>Schoenoplectus lacustris</i> var. <i>tabernaemontani</i>
zephyr flower	<i>Zephyranthes</i> spp.
zexmenia	<i>Zexmenia hispida</i>

Turfgrasses

Grass	Type	Irrigation Requirements
annual bluegrass	cool season	80% of ET _o
annual ryegrass	cool season	80% of ET _o
Bermudagrass	warm season	60% of ET _o
colonial bentgrass	cool season	80% of ET _o
creeping bentgrass	cool season	80% of ET _o
hard fescue	cool season	80% of ET _o
highland bentgrass	cool season	80% of ET _o
Kentucky bluegrass	cool season	80% of ET _o
kikuyugrass	warm season	60% of ET _o
meadow fescue	cool season	80% of ET _o
perennial ryegrass	cool season	80% of ET _o
red fescue	cool season	80% of ET _o
rough-stalked bluegrass	cool season	80% of ET _o
seashore paspalum	warm season	60% of ET _o
St. Augustinegrass	warm season	60% of ET _o
tall fescue	cool season	80% of ET _o
zoysiagrass	warm season	60% of ET _o

From: University of California ANR publication 24191, *Turfgrass Evapotranspiration Map, Central Coast of California*.

Appendix A— Reference Evapotranspiration Values for Selected Locations in California

Table 1 gives monthly average values for reference evapotranspiration (ET_o) in selected California locations. All values are reported in inches per day.

To calculate inches per month, select a location in the column on the left, then select a month and read the value corresponding to the location. Multiply the column value times the number of days in the month. For example, reference evapotranspiration in Sacramento for the month of August is 7.75 inches (.25 x 31 = 7.75).

The numbers in Appendix A are normal year (historical) averages, derived from several years of data for the month and location. Adjustments to normal year values may be needed to account for:

1. Variation in actual ET_o totals for a month. From year to year the actual amount of evaporation may be substantially different than the historical average. For example, the historical av-

erage ET_o for August in Sacramento is 7.75 inches. If the summer was particularly cool, however, the actual value may be 25% less than average, or about 5.8 inches. Conversely, the actual amount may be substantially greater during a very hot summer. Adjustments to reflect actual ET_o conditions will be appropriate in some years.

2. Variation in location. Adjustments in ET_o may be needed for the location of the landscape planting. The climatic conditions at the ET_o measuring site may be substantially different than those at the landscape site. For example, San Francisco does not have a CIMIS station. CIMIS stations closest to San Francisco are in Marin County and San Mateo County. To use data from either Marin or San Mateo for San Francisco, a downward adjustment in ET_o would be needed since both locations are considerably warmer than San Francisco. It is important to know



Reference evapotranspiration (ET_o) values are collected at various sites in California. The ET_o site closest to your location may or may not have climatic conditions similar to your site. If not, then adjustments in ET_o values will be needed. For example, using Marin County or San Mateo County data for San Francisco will likely produce an overestimate of landscape water needs.

where ET_o measurements are being taken and then decide whether meaningful differences exist between your location and the measurement location. The assistance of a qualified biometeorologist is recommended if adjustments for location are needed.

Appendix A—Table 1

Reference Evapotranspiration Rates for Selected Cities*

Daily Average Reference Evapotranspiration by ET_o Zone (inches per day)

ET _o Zone	City	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Santa Monica	0.03	0.05	0.08	0.11	0.13	0.15	0.15	0.13	0.11	0.08	0.04	0.02
2	Santa Cruz	0.04	0.06	0.10	0.13	0.15	0.17	0.16	0.15	0.13	0.09	0.06	0.04
3	Monterey/Salinas	0.06	0.08	0.12	0.16	0.17	0.19	0.18	0.17	0.14	0.11	0.08	0.06
4	San Diego	0.06	0.08	0.11	0.15	0.17	0.19	0.19	0.18	0.15	0.11	0.08	0.06
5	Santa Rosa	0.03	0.06	0.09	0.14	0.18	0.21	0.21	0.19	0.15	0.10	0.05	0.03
6	Los Angeles	0.06	0.08	0.11	0.16	0.18	0.21	0.21	0.20	0.16	0.12	0.08	0.06
7	Alturas	0.02	0.05	0.08	0.13	0.17	0.21	0.24	0.21	0.16	0.09	0.04	0.02
8	San Jose	0.04	0.06	0.11	0.16	0.20	0.23	0.24	0.21	0.17	0.11	0.06	0.03
9	San Bernardino Pasadena												
10	Paicines	0.03	0.06	0.10	0.15	0.19	0.24	0.26	0.23	0.17	0.10	0.05	0.03
11	Sonora	0.05	0.08	0.10	0.15	0.19	0.24	0.26	0.24	0.19	0.12	0.07	0.05
12	Fresno	0.04	0.07	0.11	0.17	0.22	0.26	0.26	0.23	0.18	0.12	0.06	0.03
13	Quincy	0.04	0.07	0.10	0.16	0.21	0.26	0.29	0.25	0.19	0.12	0.06	0.03
14	Sacramento	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
15	Bakersfield	0.04	0.08	0.12	0.19	0.24	0.27	0.28	0.25	0.19	0.13	0.07	0.04
16	Hanford	0.05	0.09	0.13	0.19	0.25	0.29	0.30	0.27	0.21	0.14	0.08	0.05
17	Needles	0.06	0.10	0.15	0.20	0.26	0.30	0.32	0.28	0.22	0.14	0.09	0.06
18	Palm Springs	0.08	0.12	0.17	0.23	0.28	0.32	0.31	0.28	0.23	0.16	0.10	0.07

* For comprehensive descriptions of each zone and to locate your region in a zone, see the California Irrigation Management Information System (CIMIS) color map opposite this page.

California Irrigation Management Information System (CIMIS) REFERENCE EVAPOTRANSPIRATION ZONES



Appendix A—Table 2

Calculations of Species Water Needs for July for Several Locations in California

Listed are normal year ET_o values¹ for July and three categories of water needs. Select the appropriate location and water need category. Look down the column to find the estimated water need. This was calculated by multiplying ET_o x a water need category (low, medium or high). For example, for Los Angeles in July, the normal year ET_o = 6.5 inches. For a planting in the medium category, (0.4 - 0.6) the estimated water need ranges from 2.6 to 3.9 inches.

Estimated species water needs (inches per month)² for JULY

ET _o Zones	WUCOLS REGION	ET _o	LOW			MEDIUM			HIGH		
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
NORTH CENTRAL											
4	Novato	5.8	0.6	1.1	1.7	2.3	2.9	3.4	4.0	4.6	5.2
1, 2	San Francisco	4.6-4.9	0.5	1.0	1.4	1.9	2.4	2.9	3.4	3.9	4.4
8	Concord	7.4	0.7	1.4	2.2	2.9	3.7	4.4	5.1	5.9	6.6
8	San Jose	7.4	0.7	1.4	2.2	2.9	3.7	4.4	5.1	5.9	6.6
3	Monterey	5.5	0.5	1.0	1.6	2.2	2.7	3.3	3.8	4.4	4.9
6	San Luis Obispo	6.5	0.6	1.3	1.9	2.6	3.2	3.9	4.5	5.2	5.8
CENTRAL VALLEY											
14	Auburn	8.6	0.9	1.7	2.5	3.4	4.3	5.1	6.0	6.8	7.7
14	Sacramento	8.6	0.9	1.7	2.5	3.4	4.3	5.1	6.0	6.8	7.7
12	Modesto/Stockton	8.0	0.8	1.6	2.4	3.2	4.0	4.8	5.6	6.4	7.4
12	Fresno	8.0	0.8	1.6	2.4	3.2	4.0	4.8	5.6	6.4	7.4
15	Bakersfield	8.6	0.9	1.7	2.5	3.4	4.3	5.1	6.0	6.8	7.7
14	Redding	8.6	0.9	1.7	2.5	3.4	4.3	5.1	6.0	6.8	7.7
SOUTH COASTAL											
4	Santa Barbara	5.8	0.6	1.1	1.7	2.3	2.9	3.4	4.0	4.6	5.2
4	Ventura	5.8	0.6	1.1	1.7	2.3	2.9	3.4	4.0	4.6	5.2
6	Los Angeles	6.5	0.6	1.3	1.9	2.6	3.2	3.9	4.5	5.2	5.8
1, 2	Laguna Beach	4.7-4.9	0.5	1.0	1.4	1.9	2.4	2.9	3.4	3.9	4.4
4	San Diego	5.8	0.6	1.1	1.7	2.3	2.9	3.4	4.0	4.6	5.2
SOUTH INLAND VALLEY											
9	San Fernando	7.4	0.7	1.4	2.2	2.9	3.7	4.4	5.1	5.9	6.6
9	Pasadena	7.4	0.7	1.4	2.2	2.9	3.7	4.4	5.1	5.9	6.6
9	Riverside	7.4	0.7	1.4	2.2	2.9	3.7	4.4	5.1	5.9	6.6
9	Ramona	7.4	0.7	1.4	2.2	2.9	3.7	4.4	5.1	5.9	6.6
9	San Bernardino	7.4	0.7	1.4	2.2	2.9	3.7	4.4	5.1	5.9	6.6
HIGH DESERT											
17	Palmdale	9.9	1.0	1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9
17	Lancaster	9.9	1.0	1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9
17	Victorville	9.9	1.0	1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9
17	Bishop	9.9	1.0	1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9
17	Independence	9.9	1.0	1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9
LOW DESERT											
18	Palm Springs	9.6	1.0	1.9	2.8	3.8	4.8	5.7	6.7	7.6	8.6
18	Coachella	9.6	1.0	1.9	2.8	3.8	4.8	5.7	6.7	7.6	8.6
18	Needles	9.6	1.0	1.9	2.8	3.8	4.8	5.7	6.7	7.6	8.6
18	El Centro	9.6	1.0	1.9	2.8	3.8	4.8	5.7	6.7	7.6	8.6

- Normal year values and zones are derived from the *California Irrigation Management Information System (CIMIS) Reference Evapotranspiration Map*, 1999.
- Please note; these values are not adjusted for irrigation efficiency.

Appendix B— Invasive Species

Certain species, if grown adjacent to wildland areas, have the ability to “invade” native habitats to the detriment of the native species. Others cause problems in managed landscapes. Species of both types are listed here. It is incumbent on landscape architects, designers, and managers to learn which plants are considered to be invasive, and use appropriate caution in their use.

Invasive species are indicated on the list by ☠☠, or ☠.

Examples:

☠☠ *Arundo donax*

Considered an important wildland weed (can displace native species in natural communities in one or more regions).

☠ *Acacia decurrens*

Considered a wildland weed of secondary importance, or is potentially invasive, or is a species which is limited to one region, landscaped areas or roadsides.

☠☠ *Genista spp.*

NOT ALL *Genista* species are considered invasive. Refer to “Notes on Invasive Species” for information about *Genista monspessulanus* French broom.

Notes on Invasive Species

Acacia baileyana—mainly near habitations

Acacia dealbata—Northern coastal to southern inland regions

Acacia decurrens—Northern coastal

Acacia longifolia—Minor threat along coast

Acacia melanoxylon—Northern coastal and inland to southern coastal

Achillea millefolium—Coastal and inland areas in moist places

Ailanthus altissima—Urban and natural areas around the world

Albezia distachya—Coastal areas

Aptenia cordifolia ‘Red Apple’—Coastal zones, mainly southern

Arctotheca calendula—Northern and southern coastal bluffs, foothills

Arundo donax—All regions in moist areas, seasonal water courses

Atriplex glauca—Southern coastal foothills

Altriplex semibaccata - Coastal to inland areas

Briza media - Grasslands

Carpobrotus edulis —Coastal and inland regional throughout California

Carpobrotus chilensis — Coastal and inland regional throughout California

Centranthus ruber—Coastal, inland and foothill regions throughout California

Cistus ladanifer—coastal sage scrub and chaparral

Coprosma repens—Only coastal

Cordyline australis—Only coastal

Cortaderia selloiana—Coastal regions, dunes, scrub and Monterey pine forest

Cotoneaster pannosus—Disturbed sites, many communities, central and northern coast

Crataegus monogyna—Central and northern coast

Cupressus macrocarpa—Northern coastal

Cytisus canariensis—Foothill regions, northern California and Central Valley

Cytisus racemosus—Foothill regions, northern California and Central Valley

Cytisus scoparius—Coastal scrub, oak woodland

Cytisus striatus—Coastal scrub, oak woodland

Delosperma spp. —Potential threat on coast

Duchesnia indica—Potential threat on coast

Echium candicans (fastuosum)—Coastal

Elaeagnus angustifolia—interior riparian areas

Erica lusitanica—possible threat to wildlands

Eucalyptus camaldulensis—Southern coastal canyons and foothills

Eucalyptus globulus—Coastal canyons and foothills, riparian areas

Eucalyptus pulverulenta—Southern coastal

Ficus carica—Central Valley, south coastal and Channel Islands riparian woodlands

Genista monspessulanus—Coastal scrub, oak woodland

Hedera canariensis—Coastal and inland regions in moist and shady places
Hedera helix—Coastal and inland regions in moist and shady places
Helichrysum petiolare—north coastal scrub
Ilex aquifolium—Coastal forests
Imperata cylindrica, I brasiliensis—on federal noxious weed list
Juncus spp.—potential to naturalize moist areas
Ligustrum lucidum—Mendocino coast
Limonium perezii—Southern coastal beaches and bluffs
Lonicera japonica 'Halliana'—Coastal and inland regions; moist, shady places
Lotus corniculatus—Roadside weed
Lupinus arboreus—North coast dunes
Lysimachia nummularia—widely naturalized in other states, not in CA to date
Malephora crocea—south coast bluffs, margins of wetlands
Melaleuca viridifolia (quinqueneveria)—severe problem in Florida wetlands, not in CA to date
Mentha pulegium—invades Santa Rosa Plain (Sonoma County)
Myoporum laetum—Northern and southern coastal foothills
Myosotis spp.—Coastal forests
Nereum oleander—Riparian areas
Oenanthe javanica—potential to naturalize in damp habitats
Olea europaea—Southern coastal and inland foothills
Pennisetum setaceum—All dry climate regions, grasslands, desert canyons
Phalaris aquatica—coastal sites with moist soil
Phyla nodiflora—Wet places, vernal pools
Pinus pinaster—Sparingly naturalized central coast
Pinus pinea—Sparingly naturalized central coast
Pinus radiata—Central and northern coastal
Pyracantha spp.—Central coastal
Robinia pseudoacacia—Northern valleys and foothills to southern mountains and foothills
Sapium sebiferum—severe problem in Gulf coast wetlands, bottomland forests, beginning to appear in CA in wetlands in Yolo county and along the American River near Sacramento
Schinus mole—Coastal canyons and foothills statewide
Schinus terebinthifolius—Coastal lowlands, wet places
Spartium junceum—Coastal scrub, oak woodlands
Tamarix chinensis, T gallica, T parviflora, T ramosissima (pendantra)—Coastal through desert riparian areas
Tropaeolum majus—Moist coastal regions
Vinca major—Riparian areas, oak woodland, mostly coastal
Watsonia bulbillifera—North coast
Watsonia marginata—North coast
Zantedeschia aethiopica—Coastal streams

Appendix C—

Glossary

Acre-foot

The amount of water which covers an acre (43,560 ft.²) to the depth of one foot (12 inches). One acre-foot equals 325,850 gallons.

CIMIS

California Irrigation Management Information System. A network of weather stations located around the state which collects reference evapotranspiration data. The network is managed by the California Department of Water Resources.

Conversion Factor (0.62 gallons/ft. 2-inch)

Used to convert water volume from inches per unit area to gallons per unit area. There are 0.62 gallons in a square foot-inch.

Crop Coefficient (K_c)

Fraction of water lost from the crop relative to reference evapotranspiration.

Crop Evapotranspiration (ET_o)

Water loss from a crop.

Vegetation Density

An evaluation of vegetation surface area per unit volume taking into consideration factors such as tree canopy cover and tiers of vegetation.

Density Factor (k_d)

One of three factors used to generate a landscape coefficient. Adjusts the landscape coefficient to account for the effect of vegetation density on water loss from a hydrozone.

ET

Evapotranspiration. The sum of water losses through evaporation (E) from the soil and transpiration (T) from the plant.

ET_o

Reference Evapotranspiration. The approximation of water loss from a field of 4-to-7-inch-tall cool-season grass that is not water stressed. ET_o is measured at CIMIS weather stations in various locations around the state.

ET_L

Estimated water needs of the landscape. Calculated by multiplying the landscape coefficient (K_L) by Reference Evapotranspiration (ET_o).

Hydrozone

A portion of a landscaped area having plants with similar water needs that are served by one irrigation valve or set of valves with the same schedule.

Irrigation Efficiency

A measure of the portion of the total applied irrigation water beneficially used (primarily to satisfy plant water needs). Losses (non-beneficial water use) include unused runoff and evaporation from wet soil surfaces.

Landscape Coefficient (K_L)

The functional equivalent of the crop coefficient. Used for estimating water needs from landscape plantings. Landscape coefficient = species factor x microclimate factor x density factor.

Microclimates

Areas having different environmental conditions within a climatic zone.

Microclimate Factor (k_{mc})

One of three factors used to generate a landscape coefficient. Adjusts the landscape coefficient to account for the effect of microclimate on water loss from a hydrozone.

Species Factor (k_s)

One of three factors used to generate a landscape coefficient. Adjusts the landscape coefficient to account for water loss from a hydrozone due to the plant species composition.

Square foot-inch

The amount of water which covers one square foot of area to the depth of one inch. One square foot-inch equals 0.62 gallons.

TWA

Total water applied. An estimate of the total amount of water to apply to a landscape planting. Calculated by dividing ET_L (estimated water needs of the planting) by IE (irrigation efficiency).

WUCOLS

Water Use Classification of Landscape Species. A Guide to the Water Needs of Landscape Plants.

Appendix D— Additional Resources

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Other Resources

- California Department of Water Resources
Office of Water Use Efficiency
901 P Street
P. O. Box 942836
Sacramento, California 94236-0001
(916) 651-9676
www.owue.water.ca.gov

- California Irrigation Management Information System (CIMIS)
California Department of Water Resources
Office of Water Use Efficiency
P. O. Box 942836
Sacramento, California 94236-0001
(916) 651-7030
www.cimis.water.ca.gov

- California Department of Water Resources
Information: (800) 272-8869

- Species list on the Internet:
[www.dpla.water.ca.gov/urban/conservation/
landscape/wucols/wucols.html](http://www.dpla.water.ca.gov/urban/conservation/landscape/wucols/wucols.html)
- Integrated Pest Management
www.ipm.ucdavis.edu
- University of California Cooperative Extension
San Mateo and San Francisco Counties
625 Miramontes Street, Suite 200
Half Moon Bay, California 94019
(650) 726-9059
- UC Cooperative Extension—County Offices
(check local phone directory)

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Additions

Additions to the WUCOLS list can be made. Submit species names to:

**Irrigation Water Needs Project
UCCE
625 Miramontes, Suite 200
Half Moon Bay, California 94019**

Submitted names will be sent out for evaluation by committee members and additions will be made periodically.

