



City of La Habra Heights

Building Division

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City of La Habra Heights Fuel Modification Guideline

INTRODUCTION

Proper management of vegetation in areas at risk from wildfires has proven to be a major factor in reducing the chances of structures burning, especially when combined with construction techniques designed to further protect a home from approaching flames and burning embers. Over the past 30 years these approaches have contributed to saving hundreds of structures during major wildfires in Southern California.

California state-wide law requires that land owners in areas at risk from wildfires implement and maintain a defensible space landscape area between buildings and potential approaching wildfire.

PURPOSE

The purpose of this guideline is to provide information on how fuel modification zones are to be designed, installed, and maintained in order to meet defensible space requirements.

SCOPE

A fuel modification zone is a strip of land where combustible vegetation has been removed and/or modified and partially or totally replaced with more adequately spaced, drought-tolerant, fire-resistant plants in order to provide a reasonable level of protection to structures from wildland and vegetation fires. Development occurring within canyons, foothills, mountains, non-irrigated former farming areas, and other lands containing combustible vegetation requires modification of natural vegetation at the urban interface.

SUBMITTAL CRITERIA REQUIREMENTS

Fuel modification programs vary in complexity and are dependent upon the type, quantity, and spacing of vegetation, as well as topography, degree/type of exposure, local weather patterns, and the construction, design, and placement of structures. A typical fuel modification installation consists of three Zones. a Zone A which extends 30 feet from the structure and is irrigated. Zone B extends out 100 feet from the structure. It is a thinned by a minimum of fifty so that the maximum coverage does not exceeds 50 percent. Land within this zone must be free of debris, dead wood, branches touching the ground, and other dry or dead vegetation. Zone C extends out 200 feet from the structure. Zone C thinned by a

minimum of thirty (30) percent. Land within this zone must be free of debris, dead wood, branches touching the ground, and other dry or dead vegetation

1. Conceptual Fuel Modification Plans

Conceptual fuel modification plans must be approved by the La Habra Heights Fire Department (LHHFD). This approval occurs prior to, and/or concurrent, with review and approval of any entitlement or conditions being set.

Conceptual plans are optional. See Section 2 for the precise plan requirements. Precise plans shall include all submittal criteria information required for conceptual plans below. Approval of a fuel modification plan by the LHHFD does not eliminate the requirement to obtain appropriate environmental, grading, and zoning clearance/permits from the appropriate approving agency having jurisdiction. Conceptual plans show the area and location of fuel modification necessary to achieve the minimum acceptable level of risk to structures from combustible vegetation fires.

Submit three sets of plans prepared by a licensed landscape architect or other design professional with equivalent credentials to the OFM. Contact the OFM in advance if not using a licensed landscape architect. An electronic copy of the plans is required in .pdf format.

The following information shall be included on the conceptual fuel modification plan:

- A. Delineation of each zone (setback, irrigated, and thinning) with a general description of each zone's dimensions and character; i.e., 30-foot A Zone setback, 100-foot Zone B, with existing vegetation removed, irrigated, and planted with adequately spaced plant material from the *Horizontal Spacing and Vertical Separation Requirements* Document. (See Attachment 1.) Additionally, Copy Attachment 1 onto the plans indicating appropriate spacing requirements will be designed for the precise plans.
- B. Identify the removal of undesirable plant species in accordance with the *Undesirable Plant Species* (See Attachment 2). Copy Attachment 2 onto the plans.
- C. Existing plant species within the required fuel modification area planned to be retained and, if available, proposed plant materials to be planted in the fuel modification area. The plans shall address rare, protected, and endangered plant and animal species, tree ordinances, geological hazards, and other conflicting restrictions. The design professional must be prepared to address the disposition of these species with the submittal of the fuel modification plans.
- D. Identify the size of the proposed development by showing all tract and property lines and slope contour lines. Provide the proposed location of all structures nearest to the fuel modification area.

- E. A note stating that within the fuel modification zones, the plant species will be selected from the La Habra Heights approved plant palette.
- F. If you cannot meet the requirements of the fuel modification guideline for total distance of the zones, alternate plant species, or horizontal spacing/grouping distances, an Alternative Materials and Methods (AM & M) request letter shall be drafted and submitted with the plans. If an alternative means of protection is approved by the LHHFD, a copy of the AM & M request letter and an OFM drafted response letter shall be copied onto the plans then re-submitted for the stamp of approval.

2. Precise Fuel Modification Plans

Precise fuel modification plans shall include all information required for conceptual fuel modification plans and the following additional information:

- A. Plant palette to be designed and installed in accordance with this guideline. Include a plant legend for all trees, tree-form shrubs, shrubs, and ground cover in irrigated zones showing the maximum width of mature plants and proposed spacing in accordance with the *Horizontal Spacing and Vertical Separation Requirements* (Attachment 1).
- B. Irrigation plans indicating that an irrigation system is being designed and installed.
- C. If not available on the conceptual plan, building footprints or a statement that clearly indicates the limits of proposed structure(s).
- D. Specify on the plans that the property owner shall be responsible for maintaining the fuel modification in the condition as approved.

3. Plant Palette Information

The plant species from the *LHH Approved Plant List*, Attachment 3, were approved by various resource agencies responsible for environmental protection. All plants installed shall be selected from Attachment 3 and be grouped and spaced in accordance with Attachment 1. Specific installation requirements are included for various plant species. (See plant code, legend, and qualification statements in Attachment 1). Retained plants shall be proposed for approval on the plans (See below for proposing alternate plant species). All plant species must be submitted in a legend on the plans containing both the botanical and common names. In irrigated zones plants must be fire resistant and drought-tolerant. New plant species introduced outside of the irrigated zones must be from Attachment 3 (or see below). (All plants including species from Attachment 3 will burn given sufficient heat and low moisture content. Vegetative fire resistance may be enhanced through adequate irrigation rates or precipitation).

Proposing Alternate Species:

If alternate plant species are proposed, the landscape architect shall provide photographs as well as all data on the size and fire resistive characteristics for installation criteria. A maximum of 10 alternate species can be proposed per project. Plant selections need to

have similar/equal properties to the plants from Attachment 3. OFM will make a case-by-case determination as to acceptability of the proposed species. The proposed species must be spaced based on size and characteristics. If the plant materials are proposed to be planted within 300 feet of reserve lands (except plants on the interior of the tract), concurrence from the applicable agencies listed in Section 2B would be required. If the proposed plants have received previous resource agency approval, no concurrence letter will be required. Contact OFM prior to your submittal of alternate plant species, if needed.

4. Zone A – Irrigated Structure Setback Zone

The purpose of the setback zone is to provide a defensible space for fire suppression forces and to protect structures from radiant and convective heat. **In no case shall Zone A be less than a 30-foot minimum width. The entire zone is to be located on a level, graded area at the top or base of the slope.**

If Zone A is located within the lot containing the protected structure and another entity is maintaining the B zone, it shall be located at the most distal level 30 feet prior to the beginning of the slope. If Zone A is located outside of the lot containing the protected structure, it shall begin at the lot property line. The latter condition is preferred as it allows for combustible construction within privately owned individual lots. Typically, Zone A will not be approved when proposed more than 100 feet from the protected structure. Zone A may incorporate trails, roadways, and other level noncombustible surfaces that create defensible space for fire crews heat reduction between the protected structure and the fire.

Zone A – Specific Maintenance Requirements

- A. Automatic irrigation systems to maintain healthy vegetation with high moisture content and be regularly irrigated.
- B. Pruning of foliage to reduce fuel load, maintain vertical continuity, and removal of plant litter and dead wood in accordance the *Horizontal Spacing and Vertical Separation Requirements* (Refer to Attachment 1).
- C. Complete removal of undesirable plant species (See Attachment 2). There is also minimal allowance for retention of selected native vegetation.
- D. Plants in this zone shall be highly fire resistant and selected from the *LHH Approved Plant List* (Refer to Attachment 3).
- E. Tree species within Zone A are not allowed within 10 feet of combustible structures (measured from the edge of a full growth crown).
- F. Maintenance includes thinning and removal of over-growth, replacement of dead/dying fire resistant plantings, and maintenance of the operation of the irrigation system.
- G. Devices that burn solid fuels are not permitted in any fuel modification zone.

H. No combustible construction shall be allowed within Zone A.

5. Zone B –Reduced Fuel Zone

This portion of fuel modification consists of irrigated landscaping. This irrigated zone is a minimum of 70 feet in width extending 100 feet from the structure and may be increased as conditions warrant. The plans must delineate that portion of the fuel modification area that will be permanently and regularly irrigated. The landscape architect shall select plant species, design an irrigation system, and design a maintenance program which sensitively addresses water conservation practices and includes methods of erosion control to protect against slope failure. All irrigation shall be kept a minimum of 20 feet from the drip line of any existing native *Quercus* (oak) species.

Zone B shall be cleared of all undesirable plant species, irrigated, and planted with species from the *LHH Approved Plant List*, Attachment 3. Exceptions to save desirable species may be submitted for approval by the LHHFD on a site-specific basis.

Zone B – Specific Maintenance Requirements

- A. Groundcover shall be installed and maintained at a height not to exceed 2 feet.
- B. In order to maintain proper coverage, native grasses shall be allowed to go to seed. Native grasses shall be cut after annual seeding. Cut heights shall be approximately 4 - inches.
- C. Apply irrigation rates to maintain healthy vegetation with high moisture content based on plant species specific needs.
- D. All plant species designed for Zone B shall be selected from Attachment 3. Existing fuel modification maintenance programs are limited to the plants listed on the approved plans unless a revision is requested. Planting and maintenance shall be in accordance with planting restrictions from Attachments 1 and 2. Native vegetation not on the undesirable list is allowed to remain providing the coverage of vegetation does not exceed 50 percent.
- E. Groups of trees, tree-form shrubs, and shrubs that naturally exceed 2 feet in height shall be vertically pruned, and horizontally spaced in accordance with Attachment 1.
- F. Removal of dead and dying vegetation and undesirable plant species from Attachment 2.
- G. Devices that burn solid fuels are not permitted in any fuel modification zone.
- H. Combustible construction is not allowed within Zone B.

NOTE REGARDING APPLICATION OF CBC Chapter 7A and CRC R327: All structures in lots containing or adjacent to designated fuel modification zones shall incorporate special construction features per California Building Code (CBC) Chapter 7A or California Residential Code (CRC) R327 as required by the OFM. The identification of structures required to have special construction features due to development/construction in a FHSZ shall be done independently from the assessment of the proposed fuel modification plan. These construction features are required to be listed on the OFM reviewed Fire Master Plan.

6. Zone C –Reduced Fuel Zone

This portion of fuel modification consists of irrigated landscaping. This irrigated zone is a minimum of 100 feet in width beginning 100 feet from the structure extending 200 feet from the structure and may be increased as conditions warrant. The plans must delineate that portion of the fuel modification area that will be permanently and regularly irrigated. The design an irrigation system, and design a maintenance program which sensitively addresses water conservation practices and includes methods of erosion control to protect against slope failure. Native vegetation not on the undesirable list is allowed to remain providing the coverage of vegetation does not exceed 70 percent.

Zone C – Specific Maintenance Requirements

- A. In order to maintain proper coverage, native grasses shall be allowed to go to seed. Native grasses shall be cut after annual seeding. Cut heights shall be approximately 4 - inches.
- B. If irrigation is used apply irrigation rates to maintain healthy vegetation with good moisture content based on plant species specific needs.
- C. Existing fuel modification maintenance programs are limited to the plants listed on the approved plans unless a revision is requested. Planting and maintenance shall be in accordance with planting restrictions from Attachments 1 and 2. Native vegetation not on the undesirable list is allowed to remain providing the coverage of vegetation does not exceed 70 percent.
- D. Removal of dead and dying vegetation and undesirable plant species from Attachment 2.
- E. Devices that burn solid fuels are not permitted in any fuel modification zone.

7. Fuel Modification Plan Revisions

Revisions to previously approved fuel modification zones or plans shall follow procedures as established La Habra Heights. Existing fuel modification maintenance programs are limited to the plants and zone distances listed on the approved plans unless a revision is requested to the LHHFD. Three sets of revised plans are to be submitted to the LHHFD for

review. The applicant shall provide a copy of the original, stamped LHHFD approved plan for reference during the review. Some minor field changes may not need a plan submittal revision, yet those instances shall require approval by LHHFD in writing prior to the field change.

8. Fuel Modification Implementation & Required Inspections

This following information shall be placed on precise fuel modification plans, verbatim:

- A. **Prior to Rough Grading Permit Issuance:** The developer/builder shall have approved/stamped Conceptual or Precise Fuel Modification Plan.
- B. **Prior to Precise Grading Permit Issuance:** The developer/builder shall have approved/stamped Precise Fuel Modification Plan.
- C. **Prior to Building Permit Issuance:** Prior to dropping lumber, the developer/builder shall implement those portions of the approved fuel modification plan determined to be necessary by the LHHFD prior to the introduction of any combustible materials into the area. Removal of undesirable species may meet this requirement or a separation of combustible vegetation for a minimum distance of 100 feet from the location of the structure and lumber stock-pile. This generally involves removal and thinning of plant materials indicated on the approved plan. An inspection and/or release letter to the building department is required.
- D. **Prior to Issuance of Certification of Occupancy:** The fuel modification zones adjacent to structures must be installed, irrigated, and inspected. This includes physical installation of features identified in the approved precise fuel modification plan (including, but not limited to, plant establishment, thinning, irrigation, zone markers, access easements, etc). An LHHFD Inspector will provide written approval of completion at the time of this final inspection. A written disclosure may be requested by the LHHFD Inspector indicating that the property owner is aware of the fuel modification zone on their land and that they are aware of the associated restrictions of the zone.

9. Glossary

CONDUCTION - Direct transfer of heat/flames by objects touching each other.

CONVECTIVE HEAT - Transfer of heat by atmospheric currents, which is most critical under windy conditions and in steep terrain.

CROWN - Upper part of tree or other woody plant carrying the main branch system and foliage.

CANOPY - More or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees or other woody growth.

DEFENSIBLE SPACE - An area around the perimeter of structures which are key points of defense/attack against encroaching wildfires or fires escaping the structure. Defensible space refers to the area between a structure and a potential on-coming wildfire.

DESIRABLE PLANT LIST - List of plants exhibiting characteristics of low fuel volume, fire resistance, and drought tolerance which make them desirable for planting in areas of high fire danger.

DRIPLINE - Ground area at the outside edge of the canopy.

DROUGHT TOLERANT - The ability of a plant or tree to survive on little water.

FIRE BREAK - Removal of growth, usually in strips, around housing developments to prevent a fire from spreading to the structures from open land or vice versa.

FIRE RESISTANT - Any plant will burn with enough heat and proper conditions. Resistance is often used as a comparative term relating to the ability of a plant to resist ignition.

FIRE RETARDANCE - Relative comparison of plant species related to differences in fuel volume, inherent flammability characteristics, and ease of fire spread.

FUEL BREAK - A wide strip or block of land on which the native or pre-existing vegetation has been permanently modified so that fires burning into it can be more readily extinguished.

FUEL LOAD - The weight of fuels in a given areas, usually expressed in tons per acre.

FUEL MODIFICATION ZONE - A strip of land where combustible native or ornamental vegetation has been modified and partially or totally replaced with drought tolerant, fire resistant, plants.

FUEL MOISTURE CONTENT - The amount of water in a fuel, expressed as a percentage of the oven dry weight of that fuel.

FUEL VOLUME - The amount of fuel in a plant in a given area of measurement. Generally, an open-spaced plant will be low in volume.

HORIZONTAL CONTINUITY - The extent or horizontal distribution of fuels at various levels or planes.

LADDER FUELS - Fuels which allow the vertical transmission of fire to over-story vegetation. Fire is able to carry from ground surface fuels into crowns with relative ease.

LITTER - The uppermost layer of loose debris composed of freshly fallen or slightly decomposed organic material such as dead sticks, branches, twigs, leaves or needles.

LONG TERM - In perpetuity of the fuel modification plan requirement.

PROBABILITY OF IGNITION - A rating of the probability that a glowing or flaming flying ember or heat will cause a fire, providing it lands on receptive fuels.

RADIANT HEAT - Transfer of heat by electromagnetic waves and can, therefore, travel against the wind. For example, it can preheat the opposite side of a burning slope in a steep canyon or a neighboring home to the ignition point.

RESERVE LANDS - As defined by the State of California and Riverside County agencies.

TARGET SPECIES - Plant species that are generally removed as part of the fuel modification plan (see undesirable species).

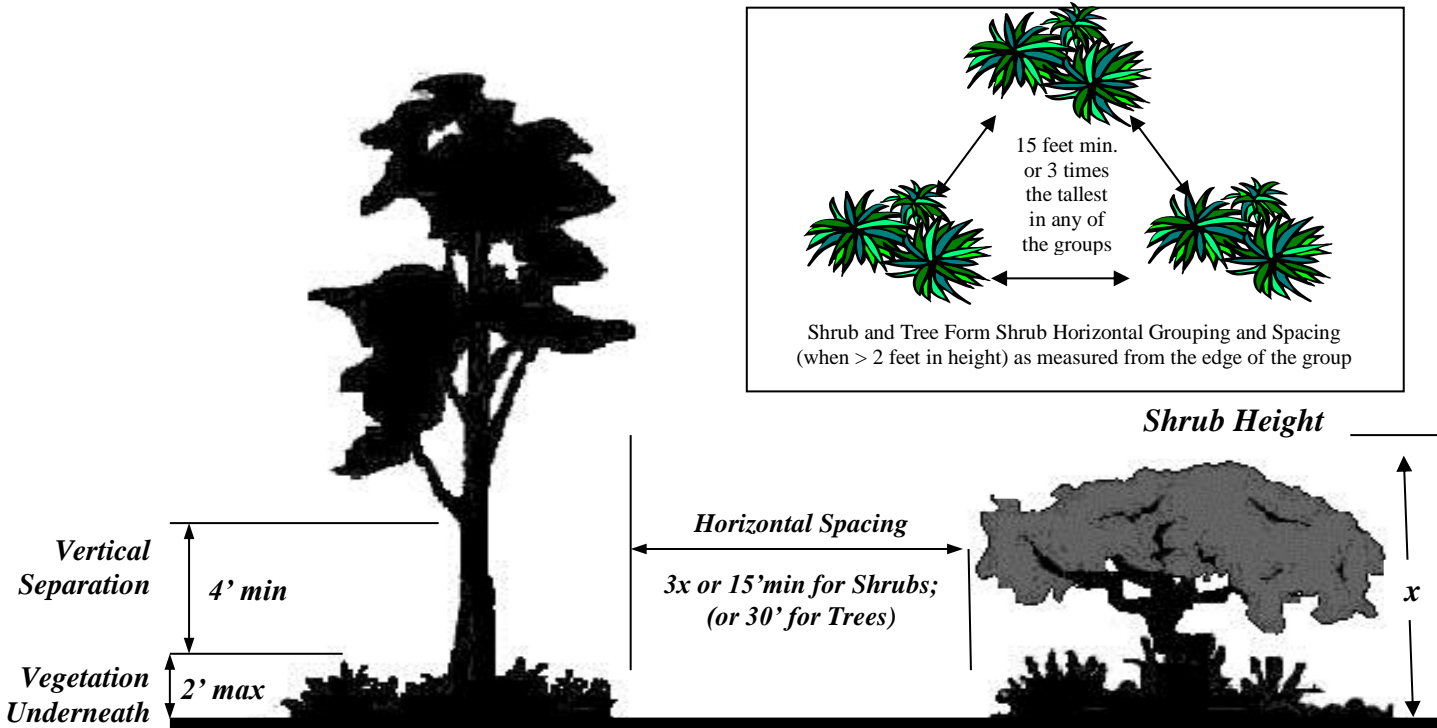
UNDESIRABLE SPECIES - Those species of plants with inherent characteristics which make them highly combustible. These characteristics can be either physical or chemical. Physical properties include large amounts of dead material retained within the plant, rough or peeling bark, and the production of large amounts of litter. Chemical properties include the presence of volatile substances such as oils, resins, wax, and pitch. These plants are sometimes referred to as target species.

WILDLAND URBAN INTERFACE - That line, area, or zone where structures and other human development meet or intermingles.

FIRE HAZARD SEVERITY ZONES (FHSZ), WILDLAND URBAN INTERFACE (WUI) - The geographic areas designated on adopted local and state CALFIRE maps. The areas contain the type of vegetation, topography, weather, and fire history that have the possibility of conflagration fires.

Attachment 1

Horizontal Spacing and Vertical Separation Requirements for Installation and Maintenance in All Fuel Modification Zones



Horizontal Spacing

Vegetation Less than 2 Feet in Height:

- No horizontal spacing or vertical separation is required in all zones. Ground cover in Zone B should cover the entire ground between groups of shrubs, trees, or grasses. Ground cover shall not exceed 2 feet in height.

Shrubs and Trees 2 Feet in Height or Greater:

Shrub and Tree Group Size:

- All Shrubs and Trees can be in groups of 3 specimens or less. No horizontal spacing is required inside the group.

Shrub / Tree-form Shrub Group Spacing:

- Groups of shrubs shall be spaced by the greater of the following two measurements: A distance of 15 feet minimum (or) 3 times the height of the tallest specimen in any of the groups.
- No vegetation over 2 feet in height is allowed within 15 feet from the edge of tree canopy(s).

Tree Group Spacing:

- Groups of Trees shall be spaced by a distance of 30 feet minimum regardless of height.
- Trees shall be a minimum of 10 feet from all structures at maturity.

Vertical Separation

Shrubs and Trees Less than 10 Feet in Height:

- When the fuel modification zone is within 30 feet of the structure, a vertical separation of 2 feet minimum is required from the vegetation below. (Not required if shrubs are further than 30 feet from structure).

Shrubs and Trees 10 Feet in Height or Greater:

- A vertical separation of 4 feet minimum is required to be maintained from the vegetation below.
- Trees only: All vegetation located underneath trees, shall be a maximum of 2 feet in height.

Attachment 2

Undesirable Plant Species

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be either physical or chemical. Physical properties that would contribute to high flammability include large amounts of dead material retained within the plant, rough or peeling bark, and the production of copious amounts of litter. Chemical properties include the presence of volatile substances such as oils, resins, wax, and pitch. Certain native plants are notorious for containing these volatile substances.

Plants with these characteristics shall not be planted in any of the fuel modification zones. Should these species already exist within these areas, they shall be removed because of the potential threat they pose to any structures. They are referred to as target species since their complete removal is a critical part of hazard reduction. These fire-prone plant species include (but not limited to):

FIRE PRONE PLANT SPECIES (MANDATORY REMOVAL)

<u>Botanical Name</u>	<u>Common Name</u>
Cynara Cardunculus	Artichoke Thistle
Ricinus Communis	Castor Bean Plant
Cirsium Vulgare	Wild Artichoke
Brassica Nigra	Black Mustard
Silybum Marianum	Milk Thistle
Sacsola Austails	Russian Thistle/Tumblewood
Nicotiana Bigelevil	Indian Tobacco
Nicotiana Glauca	Tree Tobacco
Lactuca Serriola	Prickly Lettuce
Conyza Canadensis	Horseweed
Heterothaca Grandiflora	Telegraph Plant
Anthemix Cotula	Mayweed
Urtica Urens	Burning Nettle
Cardaria Draba	Noary Cress, Perennial Peppergrass
Brassica Rapa	Wild Turnip, Yellow Mustard, Field Mustard
Adenostoma Fasciculatum	Chamise
Adenostoma Sparsifolium	Red Shanks
Cortaderia Selloana	Pampas Grass
Artemisia Californica	California Sagebrush
Eriogonum Fasciculatum	Common Buckwheat
Salvia Mellifera	Black Sage
Ornamental:	
Cortaderia	Pampas Grass
Cupressus sp	Cypress
Eucalyptus sp	Eucalyptus
Juniperus sp	Juniper
Pinus sp	Pine

Attachment 3

La Habra Heights Approved Plant List

Botanical Name	Common Name	Plant Form
Shrubs:		
<i>Abelia x grandiflora</i>	Glossy Abelia	Shrub
<i>Abutilon hybridum</i>	Flowering Maple/Chinese Lantern	Shrub
<i>Acacia redolens</i>	Desert Carpet	Shrub
<i>Acanthus mollis</i>	Bear's Breech	Shrub
<i>Acer Macrophyllum</i>	Big Maple Leaf	Tree
<i>Achillea millefolium</i>	Common Yarrow	Shrub
<i>Achillea tomentosa</i>	Woolly Yarrow	Shrub
<i>Agapanthus species</i>	Lily-Of-The-Nile	Shrub
<i>Alocasia macrorrhiza</i>	Elephant's Ear	Shrub
<i>Aloe arborescens</i>	Tree Aloe	Shrub
<i>Alogyne huegeii</i>	Blue Hibiscus	Shrub
<i>Ambrosia chammissonis</i>	Beach Bur-Sage	Shrub
<i>Amorpha fruticosa</i>	Western False Indigobush	Shrub
<i>Anigozanthus flavidus</i>	Kangaroo Paw	Shrub
<i>Antirrhinum nuttalianum</i> ssp.	No common name	Shrub
<i>Arctostaphylos glandulosa</i> ssp.	Eastwood Manzanita	Shrub
<i>Arctostaphylos hookeri</i>	Monterey Carpet Manzanita	Shrub
<i>Arctostaphylos oungens</i>	No common name	Shrub
<i>Arctostaphylos refugioensis</i>	Refugio Manzanita	Shrub
<i>Arctostaphylos x 'Greensphere'</i>	Greenshere Manzanita	Shrub
<i>Artemisia pycnocephala</i>	Beach Sagewort	Shrub
<i>Atriplex canescens</i>	Four-wing Saltbush	Shrub
<i>Atriplex lentiformis</i> ssp. <i>breweri</i>	Brewer Saltbush	Shrub
<i>Baccharis emoyi</i>	Emory Baccharis	Shrub
<i>Baccharis pilularis</i> ssp. <i>Consanguinea</i>	Chaparral Bloom	Shrub
<i>Baccharis salicifolia</i>	Mulefat	Shrub
<i>Begonia species</i>	Begonia	Shrub
<i>Berberis thunbergii</i>	Japanese Barberry	Shrub
<i>Bergenia crassifolia</i>	Winter Blooming Bergenia	Shrub
<i>Bougainvillea spectabilis</i>	Bougainvillea	Shrub
<i>Brickellia californica</i>	No common name	Shrub
<i>Buddleja davidii</i>	Buttergly Bush	Shrub

<i>Buxus microphylla japonica</i>	Japanese Boxwood	Shrub
<i>Caesalpinia gilliesii</i>	Bird of Paradise Bush	Shrub
<i>Calliandra californica</i>	Baja Fairy Duster	Shrub
<i>Callistemon cutrunus'compacta'</i>	Bottlebrush	Shrub
<i>Calycanthus occidentalis</i>	Spice Bush	Shrub
<i>Camissonia cheiranthifolia</i>	Beach evening primrose	Shrub
<i>Carissa macrocarpa</i>	Green carpet natal plum	Ground cover/shrub
<i>Carpenteria califonica</i>	Bush Anemone	Shrub
<i>Cassia (Senna) artemisioides</i>	Feathery Cassia	Shrub
<i>Ceanothus gloriosus 'Point Reyes'</i>	Point reyes ceanothus	Shrub
<i>Ceanothus griseus 'Louis Edmunds'</i>	Louis edmunds ceanothus	Shrub
<i>Ceanothus griseus var. horizontalis</i>	Carmel creeper ceanothus	Shrub
<i>Ceanothus griseus var. horizontalis</i>	Yankee Point ceanothus	Shrub
<i>Ceanothus megarcarpus</i>	Big pod ceanothus	Shrub
<i>Ceanothus prostratus</i>	Squaw carpet ceanothus	Shrub
<i>Ceanothus spinosus</i>	Green Bark ceanothus	Shrub
<i>Ceanothus verrucosus</i>	Wart-stem ceanothu	Shrub
<i>Cerastium tomentosum</i>	Snow-in-summer	Ground cover/Shrub
<i>Cercis occidentalis</i>	Western Redbud	Shrub/Tree
<i>Choisya ternata</i>	Mexican Orange	Shrub
<i>Cistus hybridus</i>	White Rockrose	Shrub
<i>Cistus incanus</i>	No common name	Shrub
<i>Cistus incanus ssp. Corsicus</i>	No common name	Shrub
<i>Cistus salviifolius</i>	Sageleaf Rockrose	Shrub
<i>Cistus x purpureus</i>	Orchid Rockrose	Shrub
<i>Clivia miniata</i>	Clivia	Shrub
<i>Cneoridium dumosum</i>	Bushrue	Shrub
<i>Colocasia esculenta (caladium)</i>	Talo, Elephant's Ear	Shrub
<i>Comarostaphylis diversifolia</i>	Summer Holly	Shrub
<i>Convolvulus cneorum</i>	Bush Morning Glory	Shrub
<i>Coprosma kirkii</i>	Creeping Coprosma	Ground Cover/Shrub
<i>Coprosma pumila</i>	Prostrate Coprosma	Shrub
<i>Cotoneaster buxifolius</i>	No common name	Shub
<i>Cotoneaster aprneyi</i>	no common name	Shrub
<i>Cotyledon species</i>	No common name	Shrub
<i>Crassula ovata</i>	Jade Tree	Shrub
<i>Cuphea hyssopifolia</i>	False Heather	Shrub
<i>Cyrtomium falcatum</i>	Holly Fern	Shrub

<i>Dasyilirion longissimum</i>	Mexican Grass Tree	Shrub
<i>Dendromecon rigida</i>	Bush poppy	Shrub
<i>Dichelostemma capitatum</i>	Blue Dicks	Shrub
<i>Dietes bicolor</i>	Fortnight Lily, African Iris	Shrub
<i>Dietes iridioides</i>	Fortnight Lily, African Iris	Shrub
<i>Distinctis buccinatoria</i>	Blood-Red Trumpet Vine	Shrub
<i>Dodonaea viscosa</i>	Hopseed Bush	Shrub
<i>Elaeagnus pungens</i>	Silverberry	Shrub
<i>Encelia californica</i>	California Encelia	Shrub
<i>Epilobium canum</i> [<i>Zauschneria californica</i>]	Hoary California Fuschia	Shrub
<i>Eriodictyon crassifolium</i>	Thuck Leaf Yerba Santa	Shrub
<i>Eriodictyon trichocalyx</i>	Yerba Santa	Shrub
<i>Eriophyllum confertiflorum</i>	No common name	Shrub
<i>Escallonia species</i>	Several varieties	Shrub
<i>Eschscholzia californica</i>	California Poppy	Shrub
<i>Eschscholzia mexicana</i>	Mexican Poppy	Shrub
<i>Euphorbia species</i>	Varies	Shrub
<i>Euryops perctinatus</i>	NCN	Shrub
<i>Fatsia japonica</i>	Japanese Aralia	Shrub
<i>Feijoa sellowiana</i>	Pineapple Guava	Shrub/Tree
<i>Fouquieria splendens</i>	Ocotillo	Shrub
<i>Fremontondendron californicum</i>	California Flannelbush	Shrub
<i>Galvezia speciosa</i>	Bush Snapdragon	Shrub
<i>Gardenia augusta</i> (jasminoides)	Gardenia	Shrub
<i>Garrya ellipta</i>	Silktassel	Shrub
<i>Gillia capitata</i>	Globe Gilia	Shrub
<i>Gilia leptantha</i>	Showy Gilia	Shrub
<i>Gilia tricolor</i>	Bird's Eyes	Shrub
<i>Grevillea special & cultivars</i>	Grevillea	Shrub
<i>Grewia occidentalis</i>	Starflower	Shrub
<i>Hakea suaveolens</i>	Sweet Jalea	Shrub
<i>Hardenbergia comptoniana</i>	Lilac Vine	Shrub
<i>Hebe species & cultivars</i>	Hebe	Shrub
<i>Heliathemum muutabile</i>	Sunrose	Ground Cover/Shrub
<i>Helianthemum scoparium</i>	Rush Rose	Shrub
<i>Helictotrichon sempervirens</i>	Blue Oat Grass	Shrub
<i>Hemerocallis hybrids</i>	Daylily	Shrub
<i>Hesperaloe parviflora</i>	Red Yucca	Shrub
<i>Heteromeles arbutifolia</i>	Toyon	Shrub

Heuchera species	Coral Bells	Shrub
Hibiscus rose-sinensis	Chinese Hibiscus	Shrub
Hypericum calycimum	Aaron's Beard	Shrub
Illex species	Holly	Shrub
Iris species & varieties/cultivars	Bearded Iris	Shrub
Isocoma menziesii	Coastal Goldenbush	Shrub
Isomeris arborea	Bladderpod	Shrub
Juncus acutus	Spiny Rush	Shrub
Justicia brandegeana	Shrimp Plant	Shrub
Keckiella antirrhinoides	Yellow Bush Penstemon	Shrub
Keckiella cordifolia	Heart Leaved Penstemon	Shrub
Keckiella ternata	Blue Stemmed Bush Penstemon	Shrub
Kniphofia uvaria	Red Hot Poker	Shrub
Lantana camara cultivars	Yellow Sage	Shrub
Lantana montevidensis	Trailing Lantana	Shrub
Larrea tridentata	Creosote Bush	Shrub
Lavandula dentata	French Lavender	Shrub
Lavatera assurgentiflora	California Tree Mallow	Shrub
Leptospermum laevigatum	Australian Tea Tree	Shrub
Leonotis leonurus	Lion's Tail	Shrub
Leucophyllum frutescens	Texas Ranger	Shrub
Ligustrum japonicum	Texas privet	Shrub
Limonium perezii	Sea Lavender	Shrub
Lirope muscari	Big Blue Lily Turf	Shrub
Lobelia laxiflora	Mexican Bush Lobelia	Shrub
Lonicera japonica 'Halliana	Hall's Japanese Honeysuckle	Shrub
Lotus hermannii	Northern Woolly Lotus	Shrub
Lonicera subspicata	Wild Honeysuckle	Shrub
Lotus scoparius	Deerweed	Shrub
Mahonia aquifolium 'Golden Abundance'	Golden Abundance Oregon Grape	Shrub
Mahonia nevenii	Nevin Mahonia	Shrub
Malacothamnus fasciculatus	Chapparal Mallow	Shrub
Malva species	Mallow	Shrub
Melaleuca nesophila	Pink Melaleuca	Shrub
Mimulus species	Monkeyflower	Shrub
Mirabilis californica	Wishbone Bush	Shrub
Muhlenbergia rigens	Deer Grass	Shrub
Myrica californica	Pacific Wax Myrtle	Shrub
Myoporum debile	No common name	Shrub

<i>Myoporum insulare</i>	Boobyalla	Shrub
<i>Myrsine africana</i>	African Boxwood	Shrub
<i>Myrtus communis</i> 'compacta'	Dwarf Myrtle	Shrub
<i>Nandina domestica</i>	Heavenly Bamboo	Shrub
<i>Nerium Oleander</i>	Oleander	Shrub
<i>Nolina cismontana</i>	Chapparal Nolina	Shrub
<i>Nolina species</i>	Mexican Grasstree	Shrub
<i>Oenothera hookeri</i>	California Evening Primrose	Shrub
<i>Oenothera speciosa</i>	Show Evening Primrose	Shrub
<i>Opuntia littoralis</i>	Prickly Pear	Shrub
<i>Opuntia oricola</i>	Oracle Cactus	Shrub
<i>Opuntia prolifera</i>	Coast Cholla	Shrub
<i>Osmanthus fragrans</i>	Sweet Olive	Shrub
<i>Penstemon species</i>	Beard Tongue	Shrub
<i>Phlomis fruticosa</i>	Jerusalem Sage	Shrub
<i>Photinia fraseria</i>	No common name	Shrub
<i>Phormium tenax</i>	New Zealand Flax	Shrub
<i>Plumbago auriculata</i>	Plumbago Cape	Shrub
<i>Portulacaria afra</i>	Elephant's Food	Shrub
<i>Potentilla glandulosa</i>	Sticky Cinquefoil	Shrub
<i>Prunus caroliniana</i>	Carolina Cherry Laurel	Shrub/Tree
<i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i>	Holly Leafed Cherry	Shrub
<i>Prunus lyonii</i>	Catalina Cherry	Shrub/Tree
<i>Punica granatum</i>	Pomegranate	Shrub/Tree
<i>Puya species</i>	Puya	Shrub/Tree
<i>Pyracantha species</i>	Firethorn	Shrub
<i>Quercus berberdifolia</i>	California Scrub Oak	Shrub
<i>Quercus dumosa</i>	Coastal Scrub Oak	Shrub
<i>Rhamnus alaternus</i>	Italian Buckthorn	Shrub
<i>Rhamnus californica</i>	California Coffee Berry	Shrub
<i>Rhamnus crocea</i>	Redberry	Shrub
<i>Rhamnus crocea</i> ssp. <i>ilicifolia</i>	Hollyleaf Redberry	Shrub
<i>Rhaphiolepis species</i>	Indian Hawthorne	Shrub
<i>Rhus integrifolia</i>	Lemonade Berry	Shrub
<i>Rhus ovata</i>	Sugarbush	Shrub
<i>Ribes aureum</i>	Golden Currant	Shrub
<i>Ribes indecorum</i>	White Flowering Currant	Shrub
<i>Ribes speciosum</i>	Fuschia Flowering Gooseberry	Shrub
<i>Ribes viburnifolium</i>	Evergreen currant	Shrub

Romneya coulteri	Matilija Poppy	Shrub
Romneya coulteri 'White Cloud'	White Cloud Matilija Poppy	Shrub
Rosa species	Rose	Shrub
Rosmarinus officinalis	Rosemary	Shrub
Salvia greggii	Autums Sage	Shrub
Santolina virens	Green Lavender Cotton	Shrub
Satureja chandleri	San Migueal Savory	Shrub
Scirpis scutus	Hard Stem Bulrush	Shrub
Scirpus californicus	California Bulrush	Shrub
Simmondsia chinensis	Jojoba	Shrub
Solanum douglasii	Douglas Nightshade	Shrub
Solanum xantii	Purple Nightshade	Shrub
Strelitzia nicolai	Giant Bird of Paradise	Shrub
Strelitzia reginae	Bird of Paradise	Shrub
Symphoricarpos mollis	Creeping Snowberry	Shrub
Tecoma stans (Stenolobium stans)	Yellow Bells	Shrub/Small Tree
Tibouchina urvilleana	Princess Flower	Shrub
Trachelospermum jasminoides	Star Jasmine	Shrub
Trichosperms lanatum	Woolly Blue Curls	Shrub
Tulbaghia violacea	Society Garlic	Shrub
Verbena lasiostachys	Western Vervain	Shrub
Viburnum species	Viburnum	Shrub
Vitis girdiana	Desert Wild Grape	Shrub
Westringia fruticosa	No common name	Shrub
Xanthorrhoea species	Grass Tree	Shrub
Xylosma congestum	Shiny Xylosma	Shrub
Yucca Species	Yucca	Shrub
Yucca whipplei	Yucca	Shrub
Zantedeschia aethiopica	Calla Lilly	Shrub
Zoysia tenuifolia	Korean Grass	Ground Cover

Trees:

Acer Macrophyllum	Big Maple Leaf	Tree
Aesculus californica	California Buckeye	Tree
Agonis flexuosa	Peppermint Tree	Tree
Albizia julibrissin	Silk Tree	Tree
Alnus cordata	Italian Alder	Tree
Alnus rhombifolia	White Alder	Tree
Bauhinia variegata	Purple Orchid Tree	Tree
Betula pendula	European White Birch	Tree

<i>Brachychiton acerifolius</i>	Flame Tree	Tree
<i>Calocedrus decurrens</i>	Incense Cedar	Tree
<i>Calodrebdum capense</i>	Cape Chestnut	Tree
<i>Carya illinoensis</i>	Pecan	Tree
<i>Cendrus deodara</i>	Deodar Cedar	Tree
<i>Ceratonia siliqua</i>	Carob	Tree
<i>Cerciddium floridum</i>	Blue Palo Verde	Tree
<i>Cercis occidentalis</i>	Western Redbud	Shrub/Tree
<i>Chilopsis linearis</i>	Desert Willow	Tree
<i>Chilonanthus retusus</i>	Chinese Fringe Tree	Tree
<i>Chitalpa X tashkentensis</i>	Chitalpa	Tree
<i>Choisya ternata</i>	Mexican Orange	Shrub
<i>Cinnamomum camphora</i>	Camphor Tree	Tree
<i>Cocculus laurifolius</i>	Laurel Leaf Snail Seed	Tree
<i>Cordyline australis</i>	Giant Dracaena	Tree
<i>Cupressus macrocarpa</i>	Monterey Cypress	Tree
<i>Cyathea cooperi</i>	Australian Tree Fern	Tree
<i>Dicksonia antarctica</i>	Tazmanian Tree Fern	Tree
<i>Dracaena draco</i>	Dragon Tree	Tree
<i>Eriobotrya japonica</i>	Loquat	Tree
<i>Erythrina species</i>	Coral Tree	Tree
<i>Feijoa sellowiana</i>	Pineapple Guava	Shrub/Tree
<i>Ficus species</i>	Fig	Tree
<i>Fraxinus augustifolia</i>	Raywood Ash	Tree
<i>Geijera parviflora</i>	Australian Willow	Tree
<i>Ginkgo biloba</i>	Maidenhair Tree	Tree
<i>Gleditsia triacanthos</i>	Honey Locust	Tree
<i>Hymenosporum flavum</i>	Sweetshade Tree	Tree
<i>Jacaranda mimosifolia</i>	Jacaranda	Tree
<i>Juglans californica</i>	California Black Walnut	Tree
<i>Koelreuteria bipinnata</i>	Chinese Flame Tree	Tree
<i>Lagerstroemia indica</i>	Crape Myrtle	Tree
<i>Lagunaria patersonii</i>	Primrose Tree	Tree
<i>Laurus nobilis</i>	Sweet Bay	Tree
<i>Liquidambar styraciflua</i>	American Sweet Gum	Tree
<i>Liriodendron tulipifera</i>	Tulip Tree	Tree
<i>Lithocarpus densiflorus</i>	Tanbark Oak	Tree
<i>Lophostemon (Tristania) confertus</i>	Brisbane Box	Tree
<i>Lyonothamnus floribundus</i>	Fernleaf Ironwood	Tree
<i>Macadamia integrifolia</i>	Macadamia Nut	Tree

<i>Magnolia grandiflora</i>	Southern Magnolia	Tree
<i>Maytenus boaria</i>	Mayten Tree	Tree
<i>Metasequoia glyptostroboides</i>	Dawn Redwood	Tree
<i>Metrosideros excelsus</i>	New Zealand Christmas Tree	Tree
<i>Morus alba</i>	White Mulberry	Tree
<i>Olea europaea</i>	Olive- Fruitless varieties only	Tree
<i>Parkinsonia aculeata</i>	Mexican Palo Verde	Tree
<i>Pistacia chinensis</i>	Chinese Pistache	Tree
<i>Pittosporum undulatum</i>	Victorian Box	Tree
<i>Plantanus racemosa</i>	California Sycamore	Tree
<i>Populus fremontii</i>	Western Cottonwood	Tree
<i>Prunus caroliniana</i>	Carolina Cherry Laurel	Shrub/Tree
<i>Prunus lyonii</i>	Catalina Cherry	Shrub/Tree
<i>Punica granatum</i>	Pomegranate	Shrub/Tree
<i>Puya species</i>	Puya	Shrub/Tree
<i>Pyrus calleryana</i> & cultivars	Ornamental Pear	Tree
<i>Quercus agrifolia</i>	Coast Live Oak	Tree
<i>Quercus engelmannii</i>	Engelmann Oak	Tree
<i>Quercus suber</i>	Cork Oak	Tree
<i>Rhus lancea</i>	African Sumac	Tree
<i>Robinia ambigua</i>	Locust	Tree
<i>Sambucus mexicana</i>	Mexican Elderberry	Tree
<i>Sapium sebiferum</i>	Chinese Tallow Tree	Tree
<i>Schefflera actinophylla</i>	Queensland Umbrella Tree	Tree
<i>Sophora japonica</i>	Japanese Pagoda Tree	Tree
<i>Stenocarpus sinuatus</i>	Firewheel Tree	Tree
<i>Tabebuia chrysotricha</i>	Golden Trumpet Tree	Tree
<i>Taxodium mucronatum</i>	Montezuma Cypress	Tree
<i>Tecoma stans</i> (<i>Stenolobium stans</i>)	Yellow Bells	Shrub/Small Tree
<i>Tipuana tipu</i>	Tipu Tree	Tree
<i>Umbellularia californica</i>	California Laurel	Tree
<i>Zelkova serrata</i>	Sawleaf Zelkova	Tree
<i>Ziziphus jujuba</i>	Chinese Jujube	Tree

Ground Covers:

<i>Aeonium decorum</i>	Aeonium	Ground Cover
<i>Aeonium simsii</i>	No common name	Ground Cover
<i>Agave attenuata</i>	Century Plant	Ground Cover
<i>Agave shawii</i>	Shaw's Century Plant	Ground Cover
<i>Agave victoriae-reginae</i>	No common name	Ground Cover

Ajuga reptans	Carpet Bugle	Ground Cover
Aloe aristata	No common name	Ground Cover
Aloe brevifoli	No common name	Ground Cover
Aloe Vera	Medicinal Aloe	Ground Cover
Aptenia cordifolia	Red Apple Aptenia	Ground Cover
Arbutus unedo	Strawberry tree	Ground Cover
Arctostaphylos 'Pacific Mist'	Pacific Mist Manzanita	Ground Cover
Arctostaphylos edmundsii	Little Sur Manzanita	Ground Cover
Arctostaphylos uva-ursi	Bearberry	Ground Cover
Artemisia caucasica	Caucasian Artemisia	Ground Cover
Baccharis pilularis var. pilularis	Twin peaks #2	Ground Cover
Baileya Multiradiata	Desert Marigold	Ground Cover
Carpobrotus chilensis	Sea Fig Ice Plant	Ground Cover
Ceanothus griseus horizontalis	Yankee Point	Ground Cover
Cerastium tomentosum	Snow-in-summer	Ground cover/Shrub
Cercocarpus betuloides	Mountain Mahogany	Ground Cover
Chrysanthemum leucanthemum	Oxeye Daisy	Ground Cover
Clarkia bottae	Showy Fairwell to Spring	Ground Cover
Collinsia heterophyllia	Chinese Houses	Ground Cover
Coprosma kirkii	Creeping Coprosma	Ground cover/Shrub
Coreopsis californica	California Coreopsis	Ground Cover
Coreopsis lanceolata	Coreopsis	Ground Cover
Corea pulchella	Australian Fuscia	Ground Cover
Cotoneaster congestus 'Likiang'	Likiang Cotoneaster	Ground cover/Shrub
Crassula lactea	No common name	Ground Cover
Crassula multicava	No common name	Ground Cover
Crassula tetragona	No common name	Ground Cover
Croton californicus	California Croton	Ground Cover
Dalea Greggii	Trailing Indigo Bush	Ground Cover
Delosperma 'alba'	White trailing Ice Plant	Ground Cover
Drosanthemum floribundum	Rosea Ice Plant	Ground Cover
Drosanthemum hispidum	No common name	Ground Cover
Drosanthemum speciosus	Dewflower	Ground Cover
Duchesnea Indica	Indian Mock Strawberry	Ground Cover
Dudleya lanceolata	Lance-leaved Dudleya	Ground Cover
Dudleya pulverulenta	Chalk Dudleya	Ground Cover
Dymondia Margaretae	No common name	Ground Cover
Enogonum giganteum	St. Catherine's Lace	Ground Cover

Eriastrum Sapphirinum	Mojave Woolly Star	Ground Cover
Erigeron Glaucus	Seaside Daisy	Ground Cover
Euonymus fortunei	Winter Creeper Euonymus	Ground Cover
	Wild Strawberry/Sand	
Fragaria chiloensis	Strawberry	Ground Cover
Frankenia salina	Alkali Health	Ground Cover
Gaillardia x grandiflora	Blanketflower	Ground Cover
Gazania hybrids	South African Daisy	Ground Cover
Gazania rigens leucolaena	Training Gazania	Ground Cover
Geranium incanum	Cranesbill	Ground Cover
Glechoma Hederacea	Ground Ivy	Ground Cover
Gnaphalium californicum	California Everlasting	Ground Cover
Grindelia stricta	Gum Plant	Ground Cover
		Ground
Heliathemum muutabile	Sunrose	Cover/Shrub
Heliotropium curassavicum	Salt Heliotrope	Ground Cover
Helix Canariensis	English Ivy	Ground Cover
Herniaria Glabra	Green Carpet	Ground Cover
Iberis sempervirens	Edging Candytuft	Ground Cover
Iberis umbellatum	Globy Candytuft	Ground Cover
Iva hayesiana	Poverty Weed	Ground Cover
Juniperus conferta & cultivars	Shore Junipers	Ground Cover
Lamprathus aurantiacus	Bush Ice Plant	Ground Cover
Lampranthus filicaulis	Redondo Creeper	Ground Cover
Lampranthus spectabilis	Trailing Ice Plant	Ground Cover
Lasthenia californica	Dwarf Goldfields	Ground Cover
Laurentia Fluviatilis	Blue Star Creeper	Ground Cover
Leymus condensatus	Giant Wild Rye	Ground Cover
Limonium pectinatum	No common name	Ground Cover
Lotus corniculatus	Bird's Foot Trefoil	Ground Cover
Lupinus arizonicus	Desert Lupine	Ground Cover
Lupinus benthamii	Spider Lupine	Ground Cover
Lupinus bicolor	Sky Lupine	Ground Cover
	Loosely Flowered Annual	
Lupinus sparsiflorus	Lupine	Ground Cover
Lysimachia nummularia	Moneywort	Ground Cover
Malephora luteola	Training Ice Plant	Ground Cover
Myoporum parvifolium	No common name	Ground Cover
Myoporum 'Pacificum'	No common name	Ground Cover
Nassella (stipa) lepidra	Foothill Needlegrass	Ground Cover
Nassella (stipa) pulchra	Purple Needlegrass	Ground Cover

Nemophila menziesii	Baby Blue Eues	Ground Cover
Oenothera belandieri	Mexican Evening Primrose	Ground Cover
Ophiopogon japonicus	Mondo Grass	Ground Cover
Osteospermum fruticosum	Training African Daisy	Ground Cover
Pelargonium peltatum	Ivy Geranium	Ground Cover
Persicaria capitata	Pink Clover	Ground Cover
Phyla nodiflora	Lippia	Ground Cover
Plantago erecta	California Plantain	Ground Cover
Plantago insularis	Wooly Plantain	Ground Cover
Plantago sempervirens	Evergreen Plantain	Ground Cover
Potentilla tabernaemontanii	Spring Cinquefoil	Ground Cover
Puya species	Puya	Ground Cover/Tree
Salvia sonomensis	Creeping Sage	Ground Cover
Santolina chamaecyparissus	Lavender Cotton	Ground Cover
Scaevola 'Mauve Clusters'	No common name	Ground Cover
Sedum acre	Goldmoss Sedum	Ground Cover
Sedum album	Green Stonecrop	Ground Cover
Sedum confusum	No common name	Ground Cover
Sedum lineare	No common name	Ground Cover
Sedum x rubrotinctum	Pork and Beans	Ground Cover
Senecio serpens	No common name	Ground Cover
Sisyrinchium bellum	Blue Eyed Grass	Ground Cover
Soleirolia soleirolii	Baby's Tears	Ground Cover
Tecomaria capensis	Cape Honeysuckle	Ground Cover
Teucrium chamedrys	Germander	Ground Cover
Thymus serpyllum	Lemon Thyme	Ground Cover
Trifolium hirtum 'Hyron'	Hyron Rose Clover	Ground Cover
Trifolium fragerum 'O'Connor's'	O'Connor's Legume	Ground Cover
V erbena peruviana	No common name	Ground Cover
V erbena species	Verbena	Ground Cover
Vinca minor	Dwarf Periwinkle	Ground Cover
Vulpia myuros 'Zorro'	Zorro Annual Fescue	Ground Cover
Wedelia trilobata	Wedelia	Ground Cover
Zoysia tenuifolia	Korean Grass	Ground Cover