City of Redlands

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Redlands Fire Department Landscape & Vegetation Management Plan Development 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.

Important Note: Please refere to most current version of CA Fire Code Chapter 49 (Requirements for Wildland-Urban Interface Areas) and CA Residential Code Section R337 (Materials and Construction Methods for Exterior Wildfire Exposure).

PURPOSE

Managing the design and placement of vegetation in and around new structures will reduce the effects of a wildfire. For this reason, codes are adopted that require vegetation management and special construction features. The Fuel Modification Plan is a vegetation management code that requires landscaped areas adjacent to new structures be dedicated for permanent vegetation management activities. The Fuel Modification Program brings fire-safe landscaping and construction features together to improve community safety and reduce property loss during wildfire emergencies. This guideline provides you with the information and steps needed to prepare a Fuel Modification Plan and maintain vegetation in Fuel Modification areas for a successful long-term outcome. Furthermore, it covers the timing of plans for construction, plan criteria needed for approval, plant lists for the zones, new construction inspection requirements, and introductory maintenance information.

SCOPE

All new single-family homes, multi-family residential, Accessory Dwelling Unit (ADU), utility, and commercial structures built in, or adjacent to, a wildfire-risk area or such areas designated by the fire code official, require a Fuel Modification Plan in conjunction with the 2022 California Fire Code (CFC), Chapter 49.

FUEL MODIFICATION PLAN OVERVIEW & SEQUENCING

There are two types of Fuel Modification Plans, preliminary/conceptual and final/precise. Each type is submitted at a different time during the development and construction process.

- 1. Preliminary/Conceptual (see Section 1: Preliminary/Conceptual Fuel Modification Plans for requirements)
 - a. Infrastructure of the zone widths and program
 - b. Land use restrictions
 - c. Tract and property line information
 - d. When to submit
 - 1) Concurrent with Environmental Impact Report (EIR) processing
 - 2) Prior to tentative tract map, parcel map, or final tract map approval
 - 3) Prior to fire master plan submittal
- 2. Final/Precise (see Section 2: Final/Precise Fuel Modification Plans for requirements)
 - a. Approval of planting plans
 - b. Final details
 - c. Inspection information
 - d. When to submit
 - 1) Prior to approval of planting plans from other permitting agencies
 - 2) Prior to precise grading or building permit issuance, whichever comes first
 - 3) Prior to Fire Master Plan approval
- 3. Single Family Residential Projects
 - a. Single family residential project located in fire hazard severity zones as identified by the State Fire Marshal are also encouraged to utilize this guideline when developing their landscape plans as deferred submittals.

b. The City of Redlands process for submitting landscaping plans is coordinated through the One Stop Permit Center for coordination of all involved Departments.

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. Preliminary / Conceptual Fuel Modification Plans

Conceptual fuel modification plans must be approved by the Redlands Fire Department (RFD). 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 City. Contact the City 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 (with the first 5 feet as the Immediate Zone), 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 Redlands desirable 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 RFD, a copy of the AM & M request letter and shall be copied onto the plans then re-submitted for the stamp of approval.

2. Final/Precise Fuel Modification Plans

Precise fuel modification plans shall include <u>all</u> 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). Copy Attachment 1 onto the 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. Irrigation plans indicating that an irrigation system is being designed and installed.
- D. Indicate and provide detail of the method used to identify and delineate the fuel modification zones.
- E. If not available on the conceptual plan, building footprints or a statement that clearly indicates the limits of proposed structure(s).
- F. 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 *Redlands Resource Plant List*, Attachment 3, were recognized 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. 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).

Plant Palette Legend:

Provide a separate plant palette legend for each bulleted point below:

- 1. Trees
- 2. Shrubs
- 3. Ground Cover (maximum natural growth height shall be no taller than 18 inches)
- 4. Grasses
- 5. If proposing plant species not on the Attachment 3: Fuel Modification Zone Plant List, follow the submittal directions for proposing alternate species below.

Each legend shall include:

1. Plant Symbol (separate symbol for each plant)

- 2. Plant Form
- 3. Botanical Name
- 4. Common Name
- 5 Expected Max Growth Height
- 6. Expected Max Growth Width

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. Plant selections need to have similar/equal properties to the plants from Attachment 3. The City 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 City 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 (with the first 5 feet as the Immediate Zone), The entire zone is to be located on a level, graded area at the top or base of the slope.

Immediate Zone (First 5 feet measured from the structure out, in all directions)

- 1) No combustible bark or mulch
- 2) Plants in this area to be irrigated, naturally low growing (natural growth shall be no taller than 18 inches), and non-woody
- 3) No combustible construction is allowed, fencing, gates, patio covers, etc

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 *Redlands Resource Plant List* (Refer to Attachment 3).
- E. Tree species are not allowed within 10 feet of combustible structures (measured from the edge of a full growth crown).
- F. The horizontal distance between trees crowns (at full growth) shall not be less than 10 feet.
- G. Existing trees shall comply with items E & F above. In some cases existing trees may require removal.
- H. No Shrubs over 18 inches are allowed within 30 feet of a structure.
- Where shrubs are located below or within a tree's drip line, the lowest tree branch shall be a minimum of three times the height of the understory shrubs or 10 feet, whichever is greater.
- J. Maintenance includes thinning and removal of over-growth, replacement of dead/dying fire resistant plantings, and maintenance of the operation of the irrigation system.
- K. Devices that burn solid fuels are not permitted in any fuel modification zone.
- L. 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 *Redlands Resource Plant List*, Attachment 3. Exceptions to save desirable species may be submitted for approval by the RFD on a site-specific basis.

Zone B – Specific Maintenance Requirements

- A. Groundcover shall be installed and maintained at a height not to exceed 18 inches.
- 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. The horizontal distance between trees crowns at full growth shall not be less than 10 feet.
- F. Tree specimens are not allowed within 10 feet of a combustible structures (Measured from the edge of a full growth crown).
- G. Shrubs shall not exceed 6 feet in height.
- H. Groupings of shrubs are limited to a maximum aggregate diameter of 10 feet.
- I. Shrub groupings shall be separated from other groupings a minimum of 15 feet.
- J. Where shrubs are located below or within a tree's drip line, the lowest tree branch shall be a minimum of three times the height of the understory shrubs or 10 feet, whichever is greater.
- K. Tree-form shrubs, and shrubs that naturally exceed 18 inches in height shall be vertically pruned, and horizontally spaced in accordance with Attachment
- L. Removal of dead and dying vegetation and undesirable plant species from Attachment 2.

- M. Devices that burn solid fuels are not permitted in any fuel modification zone.
- N. Combustible construction is not allowed within Zone B

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 Redlands. 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 RFD. An electronic set of revised plans are to be submitted to the RFD for review. The applicant shall provide a

copy of the original, stamped RFD 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 RFD in writing prior to the field change.

8. Fuel Modification Implementation & Required Inspections

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

- A. <u>Prior to Rough Grading Permit Issuance</u>: The developer/builder shall have approved/stamped Conceptual or Precise Fuel Modification Plan.
- B. <u>Prior to Precise Grading Permit Issuance</u>: The developer/builder shall have approved/stamped Precise Fuel Modification Plan.
- C. <u>Prior to Building Permit Issuance</u>: 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 RFD Inspector will provide written approval of completion at the time of this final inspection. A written disclosure may be requested by the RFD 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. APPLICATION OF CBC Chapter 7A and CRC R337: 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) R337 as required by the City. 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.

10. 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.

GROUND COVER VEGETATION – A plant that naturally grows close to the ground and does not exceed 18 inches in height at full maturity.

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 overstory 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).

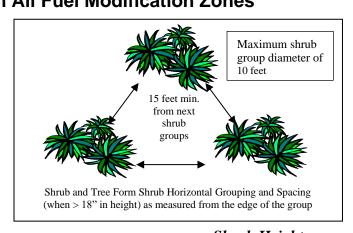
UNDESIRABLE SPECIES - Those species of plants with inherent characteristics which make them highly combustible. These characteristics can be either physical or chemical. Physical properties include large amounts of dead material retained within the plant, rough or peeling bark, and the production of 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





Where shrubs are located below or within the tree's drip line, the lowest tree branch shall be minimum of 3 times the height of understory shrubs or 10' whichever is greater

Horizontal Spacing

No shrub spacing required if meeting the vertical separation requirement for trees.

10'speration required between trees.

6'max

Horizontal Spacing

Vegetation 18 inches or less 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 18 inches in height.

Vegetation greater then 18 inches in Height:

Shrub Group Size & Spacing:

- Shrubs shall not exceed 6 feet in height.
- Groupings of shrubs are limited to a maximum aggregate diameter of 10 feet.
- Groups of shrubs shall be separated a minimum of 15 feet from the next shrub or grouping of shrubs.
- Shrubs over 18 inches in height are not allowed within 30 feet of a structure.
- Where shrubs are located below or within a tree's drip line, the lowest tree branch shall be a minimum of three times the height of the understory shrubs or 10 feet, whichever is greater.

Tree Group Spacing:

- Trees shall be spaced by a distance of 10 feet minimum regardless of height.
- Trees shall be a minimum of 10 feet from all structures (measured from mature crown).

Vertical Separation

• Where shrubs are located below or within a tree's drip line, the lowest tree branch shall be a minimum of three times the height of the understory shrubs or 10 feet, whichever is greater.

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)

Botanical NameCommon NameCynara CardunculusArtichoke ThistleRicinus CommunisCastor Bean PlantCirsium VulgareWild ArtichokeBrassica NigraBlack MustardSilybum MarianumMilk Thistle

Sacsola Austails Russian Thistle/Tumblewood

Nicotiana Bigelevil Indian Tobacco
Nicotiana Glauca Tree Tobacco
Lactuca Serriola Prickly Lettuce
Conyza Canadensis Horseweed
Heterothaca Grandiflora Anthemix Cotula Mayweed
Urtica Urens Burning Nettle

Cardaria Draba Noary Cress, Perennial Peppergrass
Brassica Rapa Wild Turnip, Yellow Mustard, Field Mustard

Adenostoma Fasciculatum
Adenostoma Sparsifolium
Cortaderia Selloana
Artemisia Californica
Eriogonum Fasciculatum

Chamise
Red Shanks
Pampas Grass
California Sagebrush
Common Buckwheat

Salvia Mellifera Black Sage

Ornamental:

Cortaderia Pampas Grass
Cupressus sp Cypress
Eucalyptus sp Eucalyptus
Juniperus sp Juniper
Pinus sp Pine

Attachment 3

Redlands Resource Plant List

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

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

Dichelostemma capitatum	Blue Dicks	Shrub
Dietes bicolor	Fortnight Lily, African Iris	Shrub
Dietes iridiodies	Fortnight Lily, African Iris	Shrub
Distinctis buccinatoria	Blood-Red Trumpet Vine	Shrub
Dodonaea viscosa	Hopseed Bush	Shrub
Elaeagnus pungens	Silverberry	Shrub
Encelia californica	California Encelia	Shrub
Epilobium canum [Zauschneria		01 1
californica]	Hoary California Fuschia	Shrub
Eriodictycon crassifolium	Thuck Leaf Yerba Santa	Shrub
Eriodictycon trichocalyx	Yerba Santa	Shrub
Eriophyllum confertiflorum	No common name	Shrub
Escallonia species	Several varieties	Shrub
Eschscholzia californica	California Poppy	Shrub
Eschscholzia mexicana	Mexican Poppy	Shrub
Euphorbia species	Varies	Shrub
Euryops perctinatus	NCN	Shrub
Fatsia japonica	Japanese Aralia	Shrub
Feijoa sellowiana	Pineapple Guava	Shrub/Tree
Fouquieria splendens	Ocotillo	Shrub
Fremontondendron californicum	California Flannelbush	Shrub
Galvezia speciosa	Bush Snapdragon	Shrub
Gardenia augusta (jasminoides)	Gardenia	Shrub
Garrya ellipta	Silktassel	Shrub
Gillia capitata	Globe Gilia	Shrub
Gilia leptantha	Showy Gilia	Shrub
Gilia tricolor	Bird's Eyes	Shrub
Grevillea special & cultivars	Grevillea	Shrub
Grewia occidentalis	Starflower	Shrub
Hakea suaveolens	Sweet Jalea	Shrub
Hardenbergia comptoniana	Lilac Vine	Shrub
Hebe species & cultivars	Hebe	Shrub
Heliathemum muutabile	Sunrose	Ground Cover/Shrub
Helianthemum scoparium	Rush Rose	Shrub
Helictotruchon sempervirens	Blue Oat Grass	Shrub
Hemerocallis hybrids	Daylily	Shrub
Hesperaloe parviflora	Red Yucca	Shrub
Heteromeles arbutifolia	Toyon	Shrub
Heuchera species	Coral Bells	Shrub
Hibiscus rose-sinensis	Chinese Hibiscus	Shrub
THEOLOGICAL SHICHES	Chilliogo i libigous	Ciliab

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 brandegeeana	Shrimp Plant	Shrub
Keckiella antirrhinoides	Yellow Bush Penstemon	Shrub
Keckiella cordifolia	Heart Leaved Penstemon Blue Stemmed Bush	Shrub
Keckiella ternata	Penstemon	Shrub
Kniphofia uvaria	Red Hot Poker	Shrub
Lantana camara cultivars	Yellow Sage	Shrub
Lantana montevidensis	Trailiing 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 Wooly Lotus	Shrub
Lonicera subspicata	Wild Honeysuckle	Shrub
Lotus scoparius	Deerweed Golden Abundance Oregon	Shrub
Mahonia aquifolium 'Golden Abundance'	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
Myoporum insulare	Boobyalla	Shrub
Myrsine africana	African Boxwood	Shrub

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

Tecoma stans (Stenolobium stans)

Yellow Bells

Shrub/Small Tree

Princess Flower Shrub Tibouchina urvilleana Trachelospermum jasminoides Star Jasmine Shrub Trichosstems lanatum Woolly Blue Curls Shrub Tulbaghia violacea Society Garlic Shrub Shrub V erbena lasiostachys Western Vervain Viburnum species Viburnum Shrub **Desert Wild Grape** Shrub Vitis girdiana No common name Shrub Westringia fruticosa Grass Tree Shrub Xannithorrhoea species Xylosma congestum Shiny Xylosma Shrub Yucca Species Yucca Shrub Yucca whipplei Yucca Shrub Calla Lilly Shrub Zantedeschia aethiopica

Zoysia tenuifolia Korean Grass Ground Cover

Trees:

Acer Macrophyllum Big Maple Leaf Tree Aesculus californica Tree California Buckeye Agonis flexuosa Peppermint Tree Tree Silk Tree Tree Albizia julibrissin Alnus cordata Italian Alder Tree White Alder Tree Alnus rhombifolia Tree Bauhinia variegata Purple Orchid Tree Tree Betula pendula European White Birch Brachychiton acerifolius Flame Tree Tree Calocedrus decurrens Incense Cedar Tree Tree Calodrebdum capense Cape Chestnut

Carya illinoinensisPecanTreeCendrus deodaraDeodar CedarTreeCeratonia siliquaCarobTreeCerciddium floridumBlue Palo VerdeTree

Cercis occidentalis Western Redbud Shrub/Tree

Chilopsis linearis Desert Willow Tree Tree Chilonanthus retusus Chinese Fringe Tree Chitalpa X tashkentensis Chitalpa Tree Shrub Choisya ternata Mexican Orange Tree Cinnamomum camphora Camphor Tree Laurel Leaf Snail Seed Cocculus laurifolius Tree Cordyline australis Giant Dracaena Tree Monterey Cypress Tree Cupressus macrocarpa Australian Tree Fern Cyathea cooperi Tree Tazmanian Tree Fern Dicksonia antarctica Tree Dracaena draco **Dragon Tree** Tree Eriobotrya japonica Loquat Tree Coral Tree Erythrina species Tree

Feijoa sellowiana Pineapple Guava Shrub/Tree

Tree Ficus species Fig Tree Fraxinus augustifolia Raywood Ash Australian Willow Tree Geijera parviflora Maidenhair Tree Tree Ginkgo biloba Gleditisia triacanthos Honey Locust Tree Hymenosporum flavum Sweetshade Tree Tree Jacaranda Tree Jacaranda mimosifolia Tree Juglans californica California Black Walnut Koelreuteria bipinnata Chinese Flame Tree Tree Lagerstroemia indica Crape Myrtle Tree Primrose Tree Tree Lagunaria patersonii Laurus nobilis Sweet Bav Tree American Sweet Gum Tree Liquidambar styraciflua Tulip Tree Tree Liriodendron tulipfera Tanbark Oak Tree Lithocarpus densiflorus Lophostemon (Tristania) confertus Brisbane Box Tree Lyonothamnus floribundus Fernleaf Ironwood Tree Macadamia integrifolia Macadamia Nut Tree Tree Magnolia grandiflora Southern Magnolia Maytenus boaria Mayten Tree Tree

Dawn Redwood

Metasequoia glyptostroboides

Tree

Metrosideros excelsus	New Zealand Christmas Tree	Tree
Morus alba	White Mulberry	Tree
Olea europaea	Olive- Fruitless varieties only	Tree
Parkinsonia aculeata	Mexican Palo Verde	Tree
Pistacia chinesis	Chinese Pistache	Tree
Pittosporum undulatum	Victorian Box	Tree
Plantanus racemosa	California Sycamore	Tree
Popolus fremontii	Western Cottonwood	Tree
Drunus caroliniana	Carolina Charry Laural	Chrub/

Prunus caroliniana Carolina Cherry Laurel Shrub/Tree
Prunus Iyonii Catalina Cherry Shrub/Tree
Punica granatum Pomegranate Shrub/Tree
Puya species Puya Shrub/Tree

Pyrus calleryana & cultivars Ornamental Pear Tree Coast Live Oak Tree Quercus agrifolia Tree Quercus engelmannii Engelmann Oak Quercus suber Cork Oak Tree Rhus lancea African Sumac Tree Robinia ambigua Locust Tree Sambucus mexicana Mexican Elderberry Tree Sapium sebiferum Chinese Tallow Tree Tree Queensland Unbrella Tree Tree Schefflera actinophylla Tree Japanese Pagoda Tree Sophora japonica Firewheel Tree Tree Stenicarpus sinuatus Tabeuia chrysotricha Golden Trumpet Tree Tree Taxodium mucronatum Montezuma Cypress Tree

Tecoma stans (Stenolobium stans) Yellow Bells Shrub/Small Tree

Tipu Tree Tree Umbellularia californica California Laurel Tree Zelkova serrata Sawleaf Zelkova Tree Ziziphus jujuba Chinese Jujube Tree

Ground Covers:

Aeonium decorum **Ground Cover** Aeonium Aeonium simsii No common name **Ground Cover** Century Plant **Ground Cover** Agave attenuata **Ground Cover** Agave shawii Shaw's Century Plant Agave victoriae-reginae No common name **Ground Cover Ground Cover** Ajuga reptans Carpet Bugle Aloe aristata No common name **Ground Cover** Aloe brevifoli **Ground Cover** No common name

Aloe Vera Medicinal Aloe **Ground Cover Ground Cover** Aptenia cordifolia Red Apple Aptenia Arbutus unedo **Ground Cover** Strawberry tree Arctostaphylos 'Pacific Mist' Pacific Mist Manzanita **Ground Cover** Arctostaphylos edmundsii Little Sur Manzanita **Ground Cover** Arctostaphylos uva-ursi Bearberry **Ground Cover** Artemisia caucasica Caucasian Artesmisia Ground Cover Baccharis pilularis var. pilularis Twin peaks #2 **Ground Cover Ground Cover** Baileya Multiradiata **Desert Marigold** Sea Fig Ice Plant **Ground Cover** Carpobrotus chilensis Ceanothus griseus horizontalis Yankee Point **Ground Cover** Ground Cerastium tomentosum Snow-in-summer cover/Shrub **Ground Cover** Cercocarpus betuloides Mountain Mahogany Chrysanthemum leucanthemum Oxeye Daisy **Ground Cover** Clarkia bottae Showy Fairwell to Spring **Ground Cover** Collinsia heterophyllia Chinese Houses **Ground Cover** Ground Creeping Coprosma Cover/Shrub Coprosma kirkii **Ground Cover** Coreopsis californica California Coreopsis **Ground Cover** Coreopsis lanceolata Coreopis Corea pulchella Australian Fuscia **Ground Cover** Ground Cover/Shrub Cotoneaster congestus 'Likiang' Likiang Cotoneaster Crassula lactea **Ground Cover** No common name **Ground Cover** Crassula multicava No common name **Ground Cover** Crassula tetragona No common name Croton californicus California Croton **Ground Cover** Dalea Greggii Trailing Indigo Bush **Ground Cover** White trailing Ice Plant **Ground Cover** Delosperma 'alba' Rosea Ice Plant **Ground Cover** Drosanthemum floribundum 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** St. Catherine's Lace **Ground Cover** Enogonum giganteum Eriastrum Sapphirinum Mojave Wooly Star **Ground Cover Erigeron Glaucus** Seaside Daisy **Ground Cover Ground Cover** Euonymus fortunei Winter Creeper Euonymus

	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 Loosely Flowered Annual	Ground Cover
Lupinus sparsiflorus	Lupine	Ground Cover
Lysimachia nummularia	Moneywort	Ground Cover
Malephora luteola	Training Ice Plant	Ground Cover
Myoporum parvilfolium	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
Nemophilia 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** Pink Clover **Ground Cover** Perscicaria capitata Phyla nodiflora **Ground Cover** Lippia Plantago erecta California Plantain **Ground Cover** Plantago insularis Wooly Plantain **Ground Cover** Plantago sempervirens Evergreen Plantain Ground Cover Potentilla tabernaemontanii Spring Cinquefoil **Ground Cover** Ground Puya species Cover/Tree Puya **Ground Cover** Salvia sonomensis Creeping Sage Lavender Cotton **Ground Cover** Santolina chamaecyparissus Scaevola 'Mauve Clusters' **Ground Cover** No common name Sedum acre Goldmoss Sedum **Ground Cover** Sedum album Green Stonecrop **Ground Cover** Sedum confusum No common name **Ground Cover** Sedum lineare **Ground Cover** No common name **Ground Cover** Sedum x rubrotinctum Pork and Beans No common name **Ground Cover** Senecio serpens Blue Eyed Grass **Ground Cover** Sisyrinchium bellum Baby's Tears **Ground Cover** Soleirolia soleirolii **Ground Cover** Tecomaria capensis Cape Honeysuckle Teucarium chamedrys Germander **Ground Cover Ground Cover** Lemon Thyme Thymus serpyllum **Ground Cover** Trifolium hirtum 'Hyron' Hyron Rose Clover Trifolium fragerum 'O'Connor's' O'Connor's Legume **Ground Cover** V erbena peruviana No common name **Ground Cover** Verbena **Ground Cover** V erbena species **Dwarf Periwinkle Ground Cover** Vinca minor **Ground Cover** Vulpia myuros 'Zorro' Zorro Annual Fescue

Wedelia

Korean Grass

Wedelia trilobata

Zoysia tenuifolia

Ground Cover

Ground Cover