

Plants and Fire Protection

Vegetation will either lead a fire to a structure, or stop it. The plants surrounding a house have one of the greatest influences on its chances of survival.

But nothing is easy in fire country, and that includes choosing the right plant. Picking plants for a fire protection is complicated because at some point every plant will burst into flames. Understanding the characteristics of a less flammable plant and the role of maintenance are essential to managing plants in fire country.

Every plant recommended for fire protection can catch on fire, but the ones listed in this article have a less likelihood than others. For more information about fire resistant plants, consult online Firewise plant guides, UC Extension education literature, and regional recommendations from wholesale and retail plant nurseries.



“Seasonal change from damp to dry can have a big effect on landscapes and homes too. Dead and decaying plants are preventable, and just like rotted or cracked siding on your home, can be avoided with the proper maintenance strategy. While you routinely clean gutters and maintain your home with the change of seasons remember to also check on the health of plants in your landscape. You’ll enjoy your plants more if they’re kept trim and healthy, and they can help to protect your property during wildfire season as well.”

Bonnie Lee

Vice President of Property Claims
at Mercury Insurance

Plant Characteristics: The Good and Bad

Whether or not a plant will catch on fire, keep a fire going, or propel a fire is determined by its physical characteristics. Getting to know the characteristics of less flammable plants is fundamentally more important than remembering plant lists.

A Less Flammable Plant Will Have

- Large and broad leaves rather than needle and blade-like leaves.
- Moist and easily bent leaves instead of stiff and leather-like leaves.
- Thick leaves instead of fine or thin leaves.
- A low amount of litter rather than a lot of duff.
- Sap that looks more like water opposed to thick, gummy or resinous sap.
- Leaves and stems without a fragrance, opposed to strong aromatic qualities.
- Leaves that are silver or gray.
- Leaves without hair (cilia).



The Problems with Plant Lists

Every plant can ignite. The ability of any plant to retard or resist a fire depends on their condition. Any plant that is dying or dead, over-aged, water starved, infested by pests, or improperly cared for is more flammable as a consequence. Truly, landscape maintenance is the fulcrum of fire safety, not plant selection.

The Signs of a Plant that Needs Replacing

An old or unhealthy plant creates a greater degree of fire risk. These plants are more prone to breakage and deadwood, they require more resources and pesticides to sustain, and they may help spread diseases and pests. The characteristics of a plant that needs replacing include:

- Older leaves, stems and limbs are dead. On trees, 50% or more of the trunk has either dead limbs or no limbs.
- The living foliage is at the very end of the branches, instead of throughout the entire branch.
- During summer the plant drops more leaves than usual.
- The amount of living wood is less than 50% of the entire plant.
- A bud or disease infestation is difficult to control, if possible at all.
- A plant does not, or is slow to recover from injury.
- A plant that is showing signs of decay, which would include mushrooms coming up from its base and roots, or shelf fungi along its trunk.



The elderberry in this picture is considered fire resistant. But the plant in this picture is anything but—it has a high likelihood of igniting if struck by a firebrand. A twiggy, dense and dead interior makes this plant vulnerable.

EVERYTHING HAS A LIFE

As a landscape nears, or passes its expected life span, the risk of fire dramatically rises. Use the generalized table below to budget and plan for the removal of mature plants. As illustrated, a landscape that was planted 50 years ago may require the removal of some, if not most of the plants.

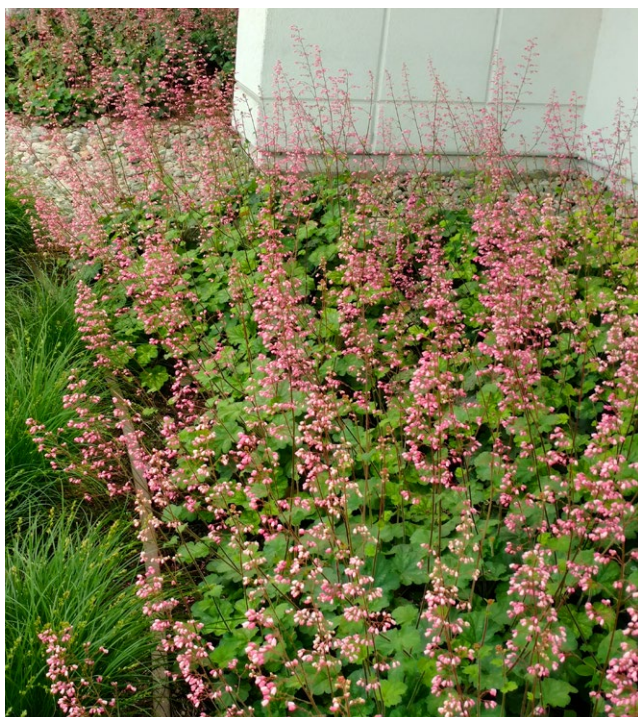
PLANT GROUP	EXPECTED LIFE
Large Trees	40 – 120 years
Medium Trees	18 – 60 years
Large Shrubs	8 – 25 years
Small Shrubs	5 – 15 years
Vines	6 – 15 (except asexual vines, like ivy, which root from shoots and roots)
Perennials	2- 6 years
Biennial	2 years
Annuals	Every Year

Plant Lists

Two types of plants are recommended for a firescaped garden: fire retardant and fire resistant plants. The definition of each follows and further below are fire retardant/resistant plants for lawn alternatives, hedges and screens, and erosion control.

Fire Retardant

The plants used in Zone 1 are considered fire retardant. These plants are fleshy and moist and will sizzle and wilt when exposed to flames and heat, but are reluctant to produce a flame. If properly maintained, these plants can catch and extinguish firebrands. The tradeoff for this protection is maintenance and irrigation.



Coral bells (*Heuchera* spp.) will thrive on the cooler sides of a structure and if well maintained, can endure intense heat and firebrands without igniting.

Fire Resistant

A fire resistant plant repels fire. Their leaves and twiggy growth will produce a flame when exposed to flames and heat, but the flame quickly dies. Thick bark and dense wood protects the plant from fully igniting. Many of these plants survive direct flame contact and will resprout within a month after a wildfire. Using plants that resist fire and rapidly resprout is vital to reducing risks of erosion following a fire. Although fire resistant plants are drought adapted, most would benefit with an occasional deep watering.



Silver spreader (*Artemisia caucasica*) can be fire resistant. It is also good at suppressing weeds and recovering from damage.

Lawn Alternatives

A lawn alternative has certain characteristics: they are low growing, water conserving, and heal from damage, such as trampling. The plants listed below can also help repel a wildfire by enduring firebrands and heat. They are perennial, fleshy, and spread vegetatively.

COMMON NAME	BOTANICAL NAME
Yarrow	Achillea spp.
Ajuga, carpet bugle	Ajuga spp.
Rockcress	Arabis spp.
Wild aster	Aster spp.
Bellflower	Campanula spp.
Dwarf plumbago	Ceratostigma plumbaginoides
Chamomile	Chamaemelum nobile
Tickseed	Coreopsis auriculata 'Nana'
Indian mock strawberry	Duchesnea indica
Fleabane	Erigeron spp.
Creeping red fescue	Festuca rubra
Wild strawberry, sand strawberry	Fragaria spp.
Gazania	Gazania spp.
Cranesbill	Geranium spp.

COMMON NAME	BOTANICAL NAME
English, Hahn's and smaller leafed ivies	Hedera helix, H. 'Hahn's', H. 'Needlepoint'
Rupture wort	Herniaria glabra
Dead nettle	Lamium spp.
Bird's foot trefoil	Lotus corniculatus
Pachysandra	Pachysandra spp.
Creeping phlox, moss phlox	Phlox subulata
Lippia	Phyla nodiflora
Cinquefoil	Potentilla spp.
Irish and Scotch moss	Sagina subulata
Hedgenettle, betony	Stachys spp.
Strawberry and white clover	Trifolium spp.
Periwinkle	Vinca spp.
Viola	Viola odorata
Zoysia	Zoysia spp.



The California native strawberry makes a great ground cover. It is self-healing, competitive and colorful at times.

Hedges and Screening Plants

The pursuit of privacy greatly increases fuel in fire country. Hedge and screening plants are typically large, dense and planted close together, creating freeways for fire if not managed properly. The plants below have a less likelihood of igniting and have large, supple and mostly non-aromatic leaves.

Maintenance is essential for screening plants in fire country. Here are some tips:

- Clean its interior of fine and dead material.
- Every other year remove one-fifth of the larger branches to promote new growth from within the plant.
- Remove leaves, debris and flammable weeds from around hedges and fences.
- Deeply water in summer/fall to ensure proper leaf moisture.
- Dense screening plants will need replacement in 8 to 14 years.

COMMON NAME	BOTANICAL NAME
Japanese Aucuba	Aucuba japonica
Carolina allspice, spice bush	Calycanthus spp.
Camellia	Camellia spp.
Flowering quince	Chaenomeles spp
Elaeagnus, oleaster	Elaeagnus ebbingei
Evergreen Euonymus	Euonymus japonicus
Japanese Aralia	Fatsia japonica
Privet	Ligustrum spp.
Oleander	Nerium oleander
Osmanthus, sweet olive, fragrant olive	Osmanthus spp.

COMMON NAME	BOTANICAL NAME
Mock orange, mockorange	Philadelphus spp.
Photinia	Photinia x fraseri
Japanese mock orange, Tobira	Pittosporum tobira
Laurel	Prunus laurocerasus, P. lusitanica
Buckthorn, coffeeberry, redberry	Rhamnus spp.
Sumac	Rhus spp.
Currant, Gooseberry	Ribes spp.
Jojoba	Simmondsia chinensis
Viburnum	Viburnum spp.



Japanese Aucuba

Fire Resistant Shrubs for Erosion Control

Ground hugging and drought adapted, supple leaves and low amounts of litter are what define a hill holding plant in fire country.

COMMON NAME	BOTANICAL NAME
Manzanita, vine hill	Arctostaphylos densiflora
Manzanita, little Sur	Arctostaphylos edmundsii
Manzanita, emerald green	Arctostaphylos 'Emerald Green'
Bearberry	Arctostaphylos uva-ursi
Cape weed	Arctotheca calendula
Silver spreader	Artemisia caucasica
Angel's hair	Artemisia schmidtiana
Coyote brush, dwarf	Baccharis pilularis 'Twin Peaks'
Natal plum	Carissa prostrates 'Green Carpet'
Ceanothus, Point Reyes	Ceanothus gloriosus
Ceanothus, Carmel creeper	Ceanothus griseus horizontalis
Ceanothus, Squaw carpet	Ceanothus prostrates, C. p. occidentalis

COMMON NAME	BOTANICAL NAME
Rockrose, sageleaf	Cistus salviifolius
Coprosma	Coprosma x kirkii, C. pumila
Cotoneaster, creeping	Cotoneaster adpressus
Cotoneaster, barberry	Cotoneaster dammeri
Cotoneaster, rock	Cotoneaster horizontalis
Cotoneaster, rockspray	Cotoneaster microphyllus
Mirror plant, prostrate	Euonymus fortunei
Lantana, trailing	Lantana montevidensis
Myoporum, prostrate	Myoporum parvifolium
Australian bluebell creeper	Sollya parviflora
Germander, prostrate	Teucrium chamaedrys, T. cossonii majoricum



Coyote brush, dwarf



Douglas Kent MS, MLA

Mr. Kent has been working to create fire protected properties in California since 1994. He wrote Firescaping (Wilderness Press), which is the best selling book on landscaping for fire protection in the U.S. Mr. Kent has also taught at the Lyle Center for Regenerative Studies, California Polytechnic University, Pomona, since 2008.