

Fire Resistant Trees and Shrubs

Ray Moritz

Species selection and maintenance practices are key to developing a firewise landscape. Although all plants are flammable under the right conditions, the following practices may decrease their flammability and reduce their accessibility to fire:

Select species and varieties that are fire resistant:

- ◆ Plants that are well-adapted to the local climate, microclimate, aspect, slope and local environmental conditions.
- ◆ Plants with low fuel volumes: low growing, limited spread, and "clean"
- ◆ Plants that are deep-rooted and proficient at water uptake
- ◆ Plants with relatively fire resistant foliage:
 - ❖ deciduous trees and shrubs.
 - ❖ trees and shrubs with large, fleshy leaves.
 - ❖ trees and shrubs lacking volatile chemicals, oils, waxes, etc.

Increase fuel moisture:

- ◆ Place trees and shrubs near natural water sources, e.g., moist soils, seeps, springs, ponds, streams, seasonal or ephemeral drainages, etc.
- ◆ Cultivate, amend and mulch the soil surface surrounding plants to enhance water penetration, retention/storage, reduce evaporation and to prevent compaction. Use permeable materials for drives, walks and patios.
- ◆ Place trees and shrubs in or adjacent to areas that are currently irrigated.
- ◆ Deep irrigate trees and shrubs every 20 to 30 days during the fire season.

Maintain plant health and vigor:

- ◆ Avoid crowding and over-competition for available soil, water and nutrients.
- ◆ Remove unhealthy, dying or dead

plants, and prune out dead branches and foliage.

- ◆ Treat pests and diseases promptly and monitor for recurrence.
- ◆ Fertilize and irrigate plants as needed to maintain vigor.

Disrupt the horizontal and vertical continuity of shrub and tree fuels:

- ◆ Separate shrubs and shrub islands by a distance of no less than two times their height. Limit island groupings to 18 feet diameter. Thin shrub cover to less than 1/3 of the area.
- ◆ Place only fire resistant, low growing (less than 18") shrubs under trees.
- ◆ Raise tree crowns to at least 10 feet above grade or to a maximum of 1/3 of their height.

Privacy screens. Although aesthetically desirable, they can be hazardous in four ways:

1. They interrupt the flow of wind, forming a partial vacuum, causing turbulence on the leeward side that draws "firebrands" down onto homes and decks.
2. They provide a highly dense fuel cluster, often with much deadwood from crowding and shading of internal and lower branches.
3. They typically are composed of species that maintain their lower branches which form a ground-to-crown, vertical "ladder fuel" architecture.
4. They are often composed of highly flammable (pyrophytic) plants.

Staggered planting provides screening while maintaining plant spacing

TREES

- ◆ When thinning out trees, remove dying and dead trees first. Then thin

out or "clean up" trees with excessive deadwood. Next, thin highly flammable species (needle leaf and blade leaf trees with volatile leaves.)

- ◆ Tree crowns should be separated by at least ten feet. Add five additional feet for every ten percent increase in slope (10 feet of separation on slopes 0 to 10%, 15 feet of separation on slopes from 11 to 20%, 20 feet on slopes from 21 to 30%, and so forth).
- ◆ Raise all tree crowns at least ten feet above soil grade.
- ◆ Thin tree crowns (up to 25%) to reduce total fuels.
- ◆ Remove dead branches and large areas of dead foliage, all vines and loose, papery bark.
- ◆ Remove flammable undergrowth and woody debris.

SHRUBS

- ◆ Separate individual shrub crowns by two times their height, or group shrubs into islands less than 18 feet in diameter, and separate the islands by a distance of no less than two times their canopy height.
- ◆ When thinning brushy areas, remove dead, dying or stressed shrubs first, then the highly flammable shrubs, e.g., highly twiggy shrubs, shrubs with small woody leaves, shrubs with volatile oils (smell them!). The shrub cover should not exceed 30 percent of your defensible space landscape.
- ◆ Remove dead, declining or diseased branches. The maximum dead to live ratio is 20 percent.
- ◆ Limb-up shrubs (raise the skirt), but no greater than one-third their height.
- ◆ Remove all vines, papery bark or other debris in the crown.
- ◆ Remove or mow undergrowth to 3", and remove all loose, woody debris.

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FIRE Safe
M A R I N

READY REFERENCE No. 2

Fall, 1998

FIREWISE PRIVACY SCREENS

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Vegetation screens are valued for privacy, screening unwanted views, dust, noise and wind control, as a backdrop for other landscaping, and for creating the impression of living in a forested setting. Though aesthetically very desirable, they can be hazardous in four ways:

1. They interrupt the flow of wind, forming a partial vacuum and turbulence on the leeward side that draws fire brands down onto homes and decks.
2. They provide a highly dense fuel cluster, often with excessive deadwood due to crowding and shading of internal and lower branches, and abutting branches of adjoining shrubs.
3. They typically are composed of species that maintain their lower branches and form a ground to crown, vertical "ladder fuel" architecture.
4. They are often composed of highly flammable (pyrophytic) plants.

Select fire resistant species and varieties. The fire hazard of screens can be partially mitigated through firewise plant selection. The homeowner should select species that are:

- Plants that are well adapted to the local climate, microclimate, aspect, slope and local environmental conditions.
- Plants with low fuel volumes: low growing, limited spread, "clean" plants.
- Plants that are deep-rooted and proficient at acquiring water.
- Plants with relatively fire resistant foliage:
 - Deciduous trees and shrubs.
 - Trees and shrubs with large, fleshy leaves.
 - Trees and shrubs lacking volatile chemicals, oils, waxes, etc.

Increase fuel moisture

- Place trees and shrubs near natural water sources: moist soils, seeps, springs, ponds, streams, seasonal/ephemeral drainages, etc.
- Cultivate, amend and mulch the surrounding soils to enhance water penetration, retention and storage; to reduce evaporation; and to avoid compaction. Use permeable materials for drives, walks and patios.
- Place trees and shrubs in or adjacent to areas that are currently irrigated.
- Deep irrigate trees and shrubs every 20 to 30 days during the fire season.

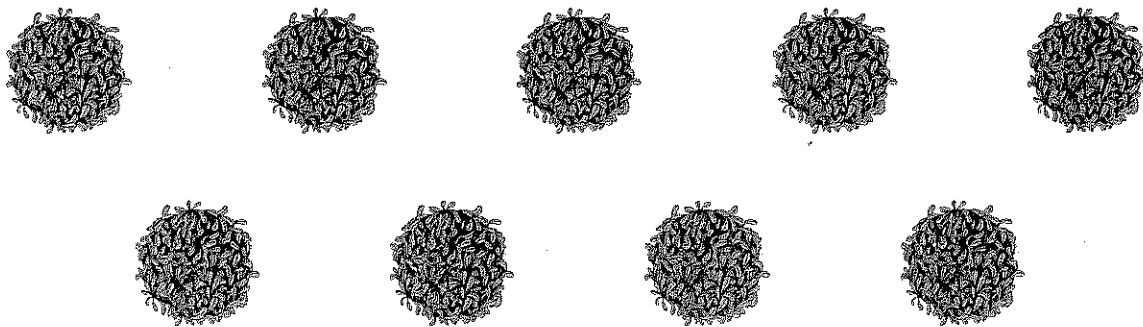
FIRE RESISTANT PRIVACY SCREEN PLANTS

Species	Common Name	Spacing Ft.	Poor Soil Tolerance	Drought Tolerance	Adult Size Ht x Spread
<i>Arbutus unedo</i>	– Strawberry tree+ #	5	high	high	20 x 20
<i>Camellia japonica</i>	– Camellia species	5	high	low mod.	12 x 12
<i>Citrus</i> spp.	– Oranges, lemons, etc.+	6-10	high	high	15 x 15
<i>Cocculus laurifolius</i>	– Cocculus	6	moderate	low mod.	15 x 15
<i>Escallonia rubra</i>	– Escallonia+	4-6	high	moderate	08 x 06
<i>Feijoa sellowiana</i>	– Pineapple guava+	6-10	high	high	18 x 20
<i>Laurus nobilis</i>	– Grecian laurel	6-10	high	high	20 x 20
<i>Ligustrum lucidum</i>	– Glossy privet♥+ #	6-10	high	high	18 x 20
<i>Magnolia</i> spp.	– Magnolia “St. Mary’s”	10-20	moderate	moderate	25 x 20
<i>Myoporum laetum</i>	– Myoporum♥+	6-10	high	high	20 x 20
<i>Myrica californica</i>	– Wax myrtle+	4-6	high	high	15 x 15
<i>Nerium oleander</i>	– Oleander♥+	3-6	high	high	12 x 12
<i>Olea europaea</i>	– Olive “Swan Hill”+ #	6-10	high	high	20 x 20
<i>Osmanthus fragrans</i>	– Sweet olive	5-6	high	high	12 x 12
<i>Pittosporum crassifolium</i>	– Karo♥♥#	5-8	high	high	15 x 15
<i>P. eugenioides</i>	– Lemonwood	8-12	high	high	25 x 25
<i>P. undulatum</i>	– Victorian box	5-10	high	high	25 x 25
<i>Podocarpus gracilior</i>	– Fern pine+	4-8	high	high	20 x 20
<i>P. macrophyllus</i>	– “Yew” tree	4-6	high	high	20 x 06
<i>Prunus caroliniana</i>	– Cherry laurel	6-8	moderate	moderate	15 x 15
<i>P. ilicifolia</i>	– Hollyleaf cherry♥	5-10	high	moderate	20 x 20
<i>P. laurocerasus</i>	– English laurel♥#	6-10	high	moderate	20 x 20
<i>Rhododendron</i> sp.	– “Azalea”	4-6	low mod.	low	4-8 x 6-12

SYMBOLS: ♥ = Favored hedge species + = Deer resistant
 # = Favored tree species > = Up to a given height
 @ = Favored erosion control species

WARNING: All plants are fuel and flammable to varying degrees. The evidence for fire resistance of selected species is largely anecdotal. Many factors influence flammability and fire hazard. More plants mean more fuel and greater hazard!

UTILITY HAZARDS: Private screen species should have a mature height of no greater than 25 feet if they are located under utility lines. Consult with your local utility company.



Staggered planting provides screening while maintaining plant spacing.