

# Fire-resistant Landscapes



California Dept of Forestry and Fire Protection website

MASTER GARDENER



YAVAPAI COUNTY

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# What is a Fire-resistant Landscape?

A landscape with a defensible space around your house that is a buffer between your home and a potential fire.

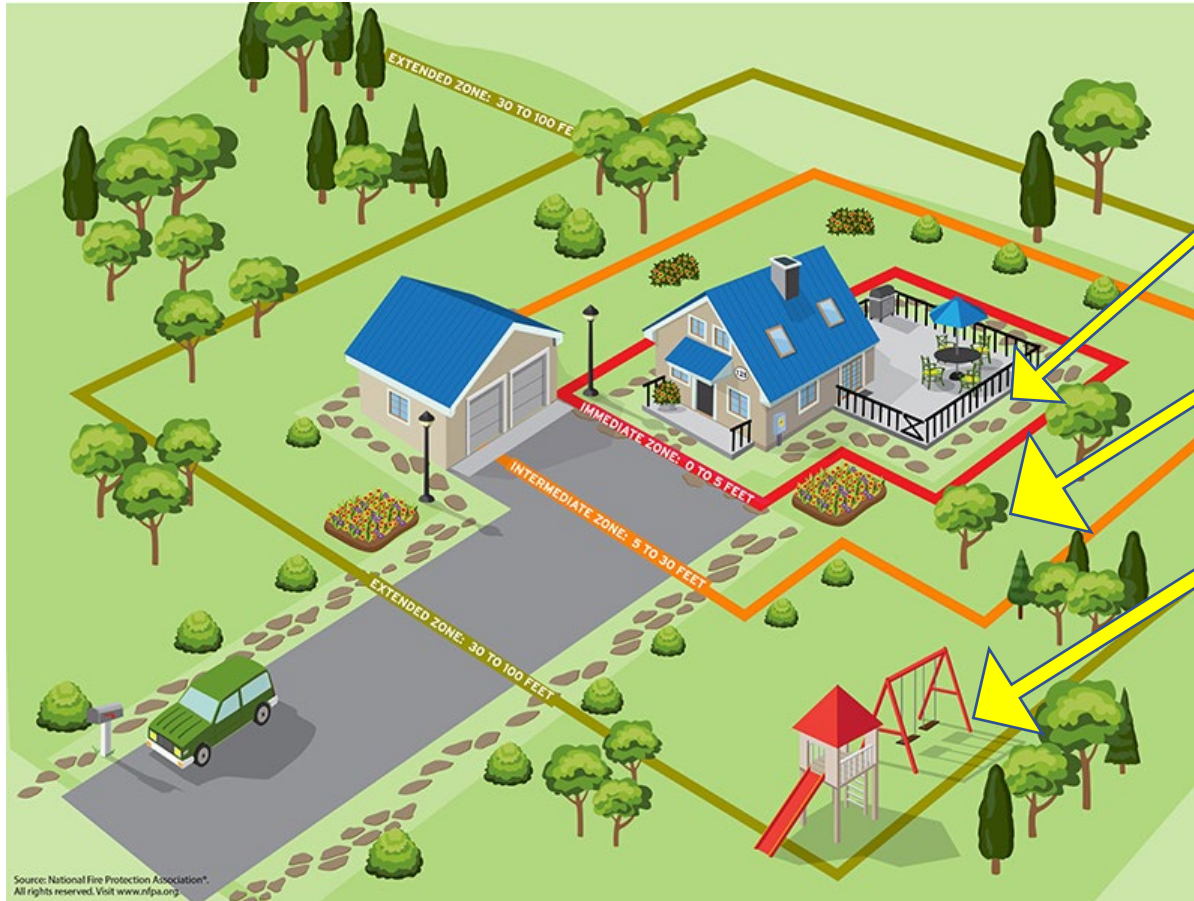
## How does one achieve this?

Understand the different zones around your home, the types of plants in these zones, the spacing between the plants, and plant maintenance.

# What we will cover.....

- Explanation of defensible space zones
- **Examples** of fire-resistant plants that are appropriate for each zone
- **Examples** of fire-resistant plant spacing/arrangements
- **Examples** of fire-prone plants

# Defensible Space Zones



**Immediate Zone**  
0 to 5 feet from structure

**Intermediate Zone**  
5 to 30 feet from structure

**Extended Zone**  
30 to 100 feet from structure

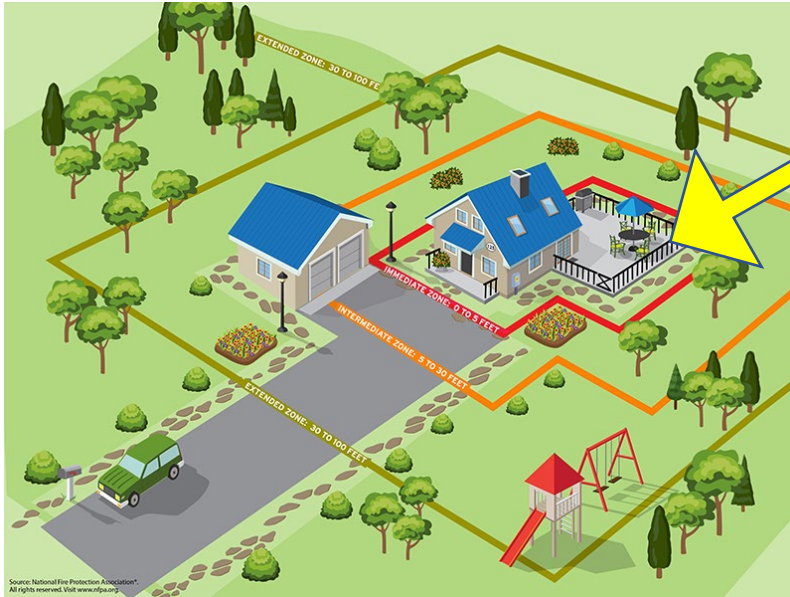
# Fire-resistant Plant Characteristics

- Plants have leaves, not needles
- Sap is water like, no strong odor
- Shrubs are low growing, 2 feet or lower
- Taller shrubs are clean, not bushy
- Trees are not bushy, very little dead wood
- Trees are broad leafed, deciduous





# Immediate Zone Plants - 0 to 5 feet from Structure



- Ground covers bring textures and colors and reduce erosion, low growing, spreading
- Succulents - moderately drought tolerant
- Perennials - bring color and texture, may die back and return in spring or stay green
- Grasses - keep short closest to the home
- Shrubs - should be low growing with no or low resin

# Fire-resistant Groundcovers (Immediate Zone – 0-5ft)

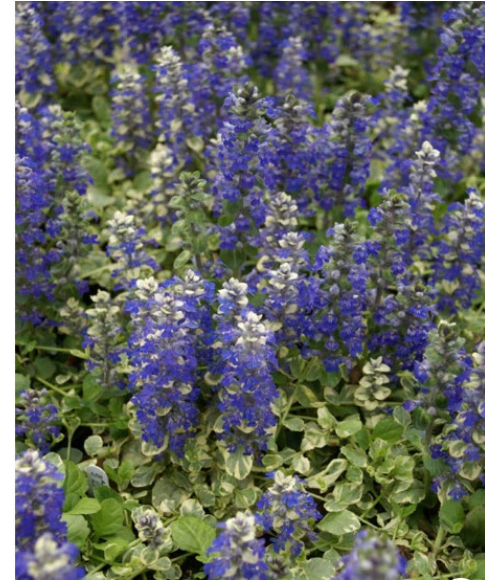
Definition: Low-growing, spreading plants that can help to stop weeds from growing.



Davesgarden.com

Vinca major (*Apocynaceae*)

Aka, periwinkle, spreading perennial vine  
12-18 inches high and spreads indefinitely  
Waterwise



Carpet Bugle (*Ajuga*)

Resilient ground cover spreads quickly to form a dense mat that will help smother weeds and discourage embers from igniting.  
3" high X 12" wide  
Medium water



# Germander (*Teucrium chamaedrys*)



Gray or green - waterwise (low water)  
10 to 12 inches high, can spread to 3 feet,  
depending on variety

0-5 Ft  
Ground Cover

# Creeping Thyme (*Thymus serpyllum*)

Waterwise, 1-3" high – spreads,  
several varieties



Dwarf, low-growing, creeping, woody  
evergreen, fragrant



# Fire-resistant Perennials (Immediate Zone – 0-5ft)

Definition: Perennials (especially small flowering plants) that grow and bloom over the spring and summer, may die back in fall and winter, and return in the spring, or stay green year round



Blanket Flower  
(*Gaillardia aristate*)

Daisy-like wildflowers known for vibrant, long-lasting blooms

Low Water

12-18" high X 10" wide



Autumn Joy  
(*Hylotelephium spectabile*)

Sedum, hardy perennial, grows in clumps 1-2 feet and wide

# Fire-resistant Perennials (more examples)

0-5ft  
Perennials



Chocolate Flower (*Berlandiera lyrata*)

Daisy-like yellow flowers  
with a strong,  
chocolate-like fragrance

Low water

12-15" high X 18-24" wide



Red Yucca (*Hesperaloe parviflora*)

Drought-tolerant,  
evergreen succulent with  
long, arching, blue-green  
leaves and vibrant red or  
pink flower spikes  
60" high X 36" wide



Yarrow (*Achillea millefolium*)

Hardy perennial with  
fern like aromatic  
leaves  
3 feet tall, low water



# Fire-resistant Succulents

(Cold Hardy Examples)

0-5ft

Perennial Succulents



Sempervivum (*Sempervivum*)  
aka Hens and Chicks, rosette  
shaped evergreen plant, mat  
forming, 4 inches tall and  
wide. Waterwise, tolerates  
temps down to -30°F



Autumn Joy  
(*Hylotelephium*  
*spectabile*)



Agave



Blue spruce stonecrop (*Sedum reflexum*)

# Fire-resistant Herbs

0-5ft  
Herbs



Moderate water  
1-2 feet high X 1-2 feet wide

Note:  
Rosemary is not fire-resistant

Lavender, sage, savory, thyme, chives, mint, oregano



# Fire-resistant Grasses (Immediate Zone – 0-5ft)

0-5ft  
Grasses



Blue fescue (*Festuca glauca*)

Waterwise

6-12" high X 6-12" tall

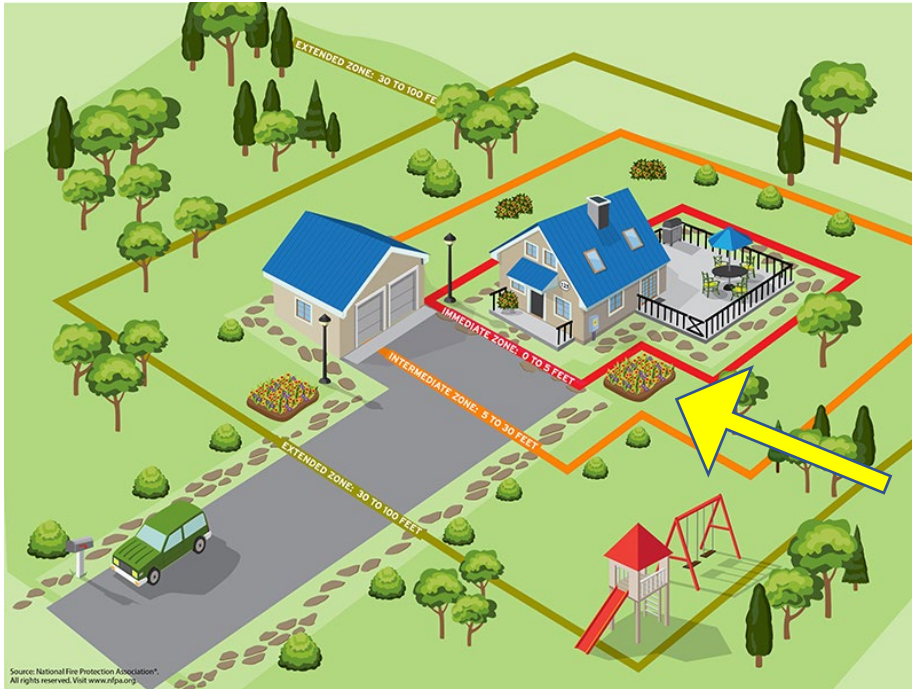


Buffalo Grass

(*Bouteloua dactyloides*)

Requires only rain after established for a natural look; can be irrigated as a lawn.

# Intermediate Zone Plants 5-30 feet from Structure



- Taller shrubs, still low growers and no-to-low resin
- Shorter native or non-native trees, spaced 10 feet apart from edges
- Taller growing grasses cut down at end of season
- Perennials
- Wildflowers- cut down at end of season

# Fire-resistant Shrubs

Intermediate Zone, 5-30ft

Definition: Woody plant smaller than a tree, usually having multiple permanent stems branching from or near the ground.

Can be deciduous with fragrant flowers that attract butterflies and other pollinators.

Butterfly bush (*Buddleja davidii*)

Moderate water

6-10 feet high X 6-10 feet wide







Forsythia (*Forsythia × intermedia*)



Oregon grape (*Mahonia*)

5-30ft  
Shrubs



# Fire-resistant Grasses

Intermediate Zone, 5–30ft

Definition: Low, green plant that grows naturally over a lot of the earth's surface, having groups of very thin leaves that grow close together in large numbers.



Sedge Grass (*Carex pansa*)  
Grows in clumps, tolerates  
drier conditions

# Fire-resistant Trees Intermediate Zone, 5-30ft

Definition: Perennial woody plant taller and larger than a shrub with a wooden trunk and, at some distance from the ground, having leaves and branches.



Desert willow (*Chilopsis linearis*)

Tree or scrub, if kept pruned  
Loses it's leaves in fall  
15-40 feet high X 20-25 feet wide



Chaste (*Vitex angust-castus*)

Small tree with fragrant flowers  
Can be maintained as shrub  
Loses it's leaves in fall  
20 feet high and wide



# Fire-resistant Trees Intermediate Zone, 5-30ft



Mimosa (*Albizia julibrissin*)  
10 to 15 feet high X 20-50 feet wide  
Vase shaped growth  
Loses it's leaves in the fall



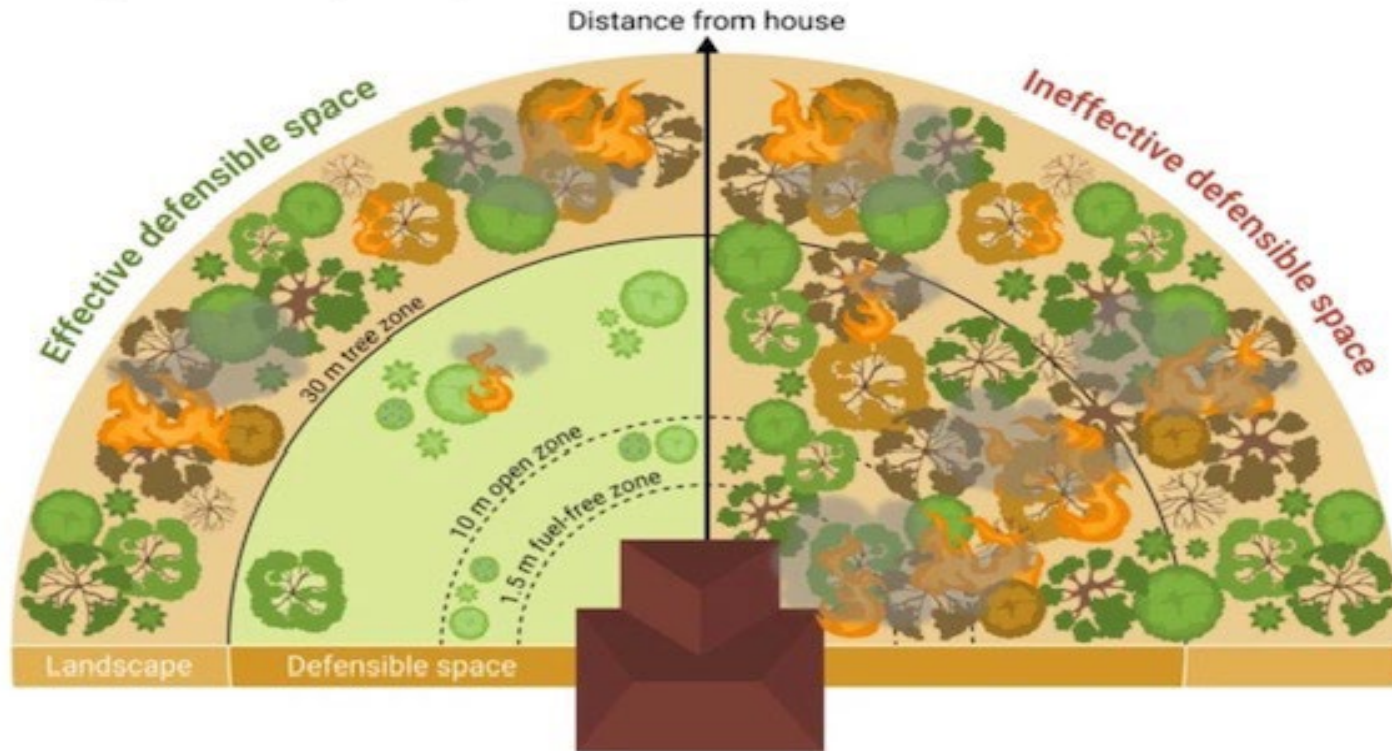
Redbud (*Cercis* sp.)  
Drought tolerant when established  
20-30 feet high X 25-35 feet wide  
Loses leave in the fall



Palo Verde (*Parkinsonia florida*)  
10 to 15 feet high X 25 feet high  
Drought tolerant  
Keeps green leaves year round

# Plant Spacing

Fig. 5: Diagram showing examples of defensible space.



The left side shows an effective defensible space, with overall low canopy cover, nicely green plants and grass, no vegetation in proximity of the building, and trees and shrubs organised in distinct patches which are not interconnected. With this design a fire approaching from the surrounding landscape would not encroach within the defensible space and, if individual shrubs/trees were to be lit by firebrands, fire would not easily propagate. The right side shows the opposite, where high canopy cover and connectivity facilitate fire spread from the landscape all the way to the house.

Ondei et al 18 (2024)



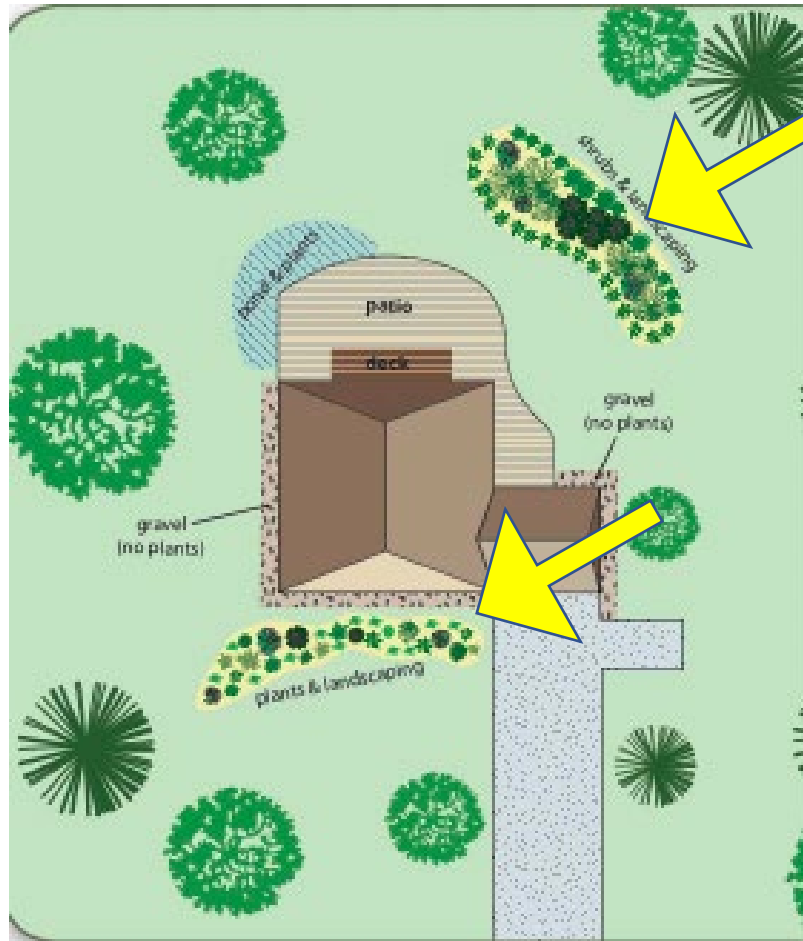
# Fire-resistant Landscape Diagram



North Carolina Forest Service Publication

1. Clear debris from roof and gutters
2. Trim overhanging branches from buildings
3. Use non-cumbustible mulch within 5 ft of structures
4. Keep lawn watered and mowed to a height of 5 inches or less
5. Landscape with fire-resistant plants and maintain their health
6. Clear away all dead vegetation and flammable materials within 30 ft of structure and propane tanks
7. Prune branches of large trees to 1-ft above the ground
8. Maintain adequate space between treetops (18 ft)
9. Reduce density of surrounding forest vegetation
10. Create access with a driveway wide-enough (12 ft) to accommodate emergency vehicles

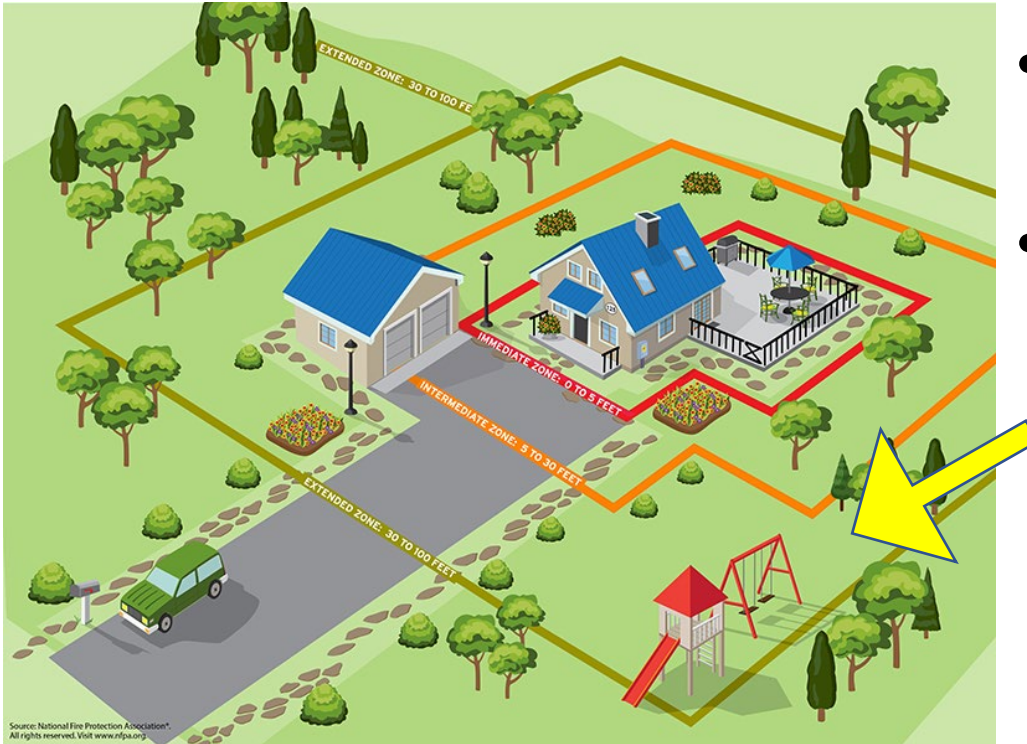
# Islands of Plants in Intermediate Zone



5-30 feet from structure

Islands are a way to group plants in a landscape, well separated from other plants and other plant islands, with nonflammable materials such as rock, pathway or dirt.

# Extended Zone Plants 30-100 feet from Structure



- Larger trees and shrubs
- Trees (including natives) should be limbed-up & dead material removed



# Xeriscape Garden - Low water and fire-resistant



Non-flammable mulch and landscaping materials, proper spacing of fire-resistant plants



# Landscape must be maintained to keep it fire-resistant

- Remove annuals and perennials after they have gone to seed or when they are overly dry
- Rake up leaves and other debris that build up over the season
- Mow or trim grasses to a low height
- Keep a watchful eye towards reducing dried materials - watch growing habits of plants
- Prune shrubs and trees at the appropriate time of year to maintain proper spacing

# Mulch in a Fire-resistant Landscape

## Immediate zone 0-5 feet from the structure

- Use only decomposed granite, gravel, stone
- Can use mulch as a top dressing around plants in well watered areas

## Intermediate zone 5-30 feet from structure

- Use bark mulch around the plant circumference only where it is watered

## Extended Zone 30-100 feet and beyond

- Use bark mulch only in islands and around individual trees

# Fire-prone Plant Characteristics

- Often blade-leaf or needle-leaf evergreens or grasses
- Often have stiff, woody small or fine, lacy leaves
- Leaves and wood often contain volatile waxes, fats, terpenes or oils (crushed leaves will have strong odors)
- Sap is usually gummy, resinous and may have a strong odor
- Usually contain plentiful fine, twiggy, dry or dead materials
- May have pubescent (hair covered) leaves
- May have loose or papery bark
- Usually flame (not smolder) when ignited with a match



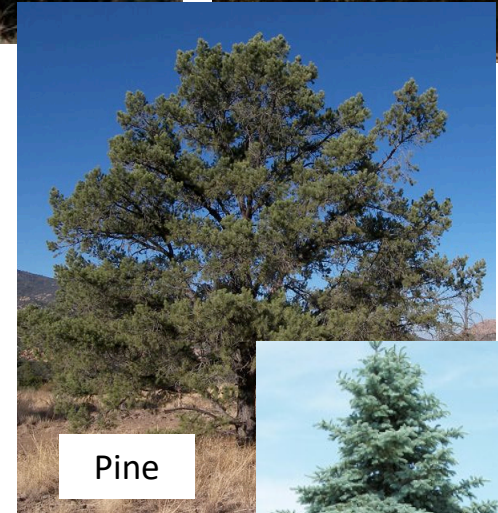
Juniper



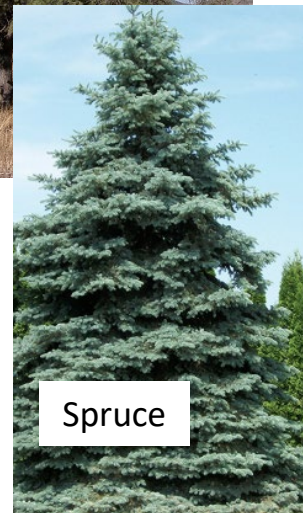
Cypress



Cedar



Pine



Spruce



# Fire-prone – Small, Resinous Leaves



Shrub live oak

Rubber Rabbitbrush



Catclaw Acacia



Rosemary



Pointleaf Manzanita



# Fire-prone Grasses (some native, most ornamental)



Yellow bluestem



Squirreltail



Pampas grass



Deer grass



Fountain grass



Avoid invasive species forming monocultures which  
makes them more fire-prone



Cheat Grass



Stinknet



Salt Cedar

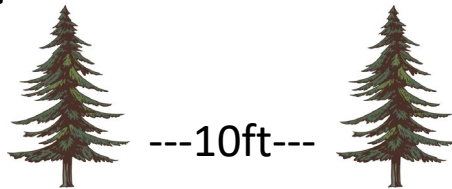


Red Brome Grass



# Fire-prone Plant Guidelines

- Plant only in extended zone
- Prune or remove trees to maintain spacing, 10 feet from edge to edge



- Maintenance includes pruning dead limbs, limbing up 6-10 feet from ground, removing debris on ground

# Resources

- Native and Naturalized Plant Database (will help with plant identification) <https://cales.arizona.edu/yavapaiplants/>
- Yavapai Gardening Firewise / Defensible webpage  
<https://extension.arizona.edu/local-offices/yavapai-county/yavapai-gardening>



Click on **Firewise / Defensible Space** in gray box to access Yavapai County Firewise documents and links.

- Fire-Resistant and Fire-Prone Plants Common to Yavapai County
- Yavapai Firewise Community Resources
- Yavapai Defensible Space Contractors
- Plus more

# Yavapai County Cooperative Extension

<https://extension.Arizona.edu/yavapai>

## Master Gardener Help Desks

### Verde/Sedona Areas

2830 N Commonwealth Dr, Ste 103, Camp Verde

928-554-8992

[verdevalleymg@gmail.com](mailto:verdevalleymg@gmail.com)

### Prescott Area

840 Rodeo Drive, Bldg C, Prescott

928-445-6590 Ext 2

[prescottmg@gmail.com](mailto:prescottmg@gmail.com)

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QUESTIONS????