

Fire-resistant Landscapes



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.

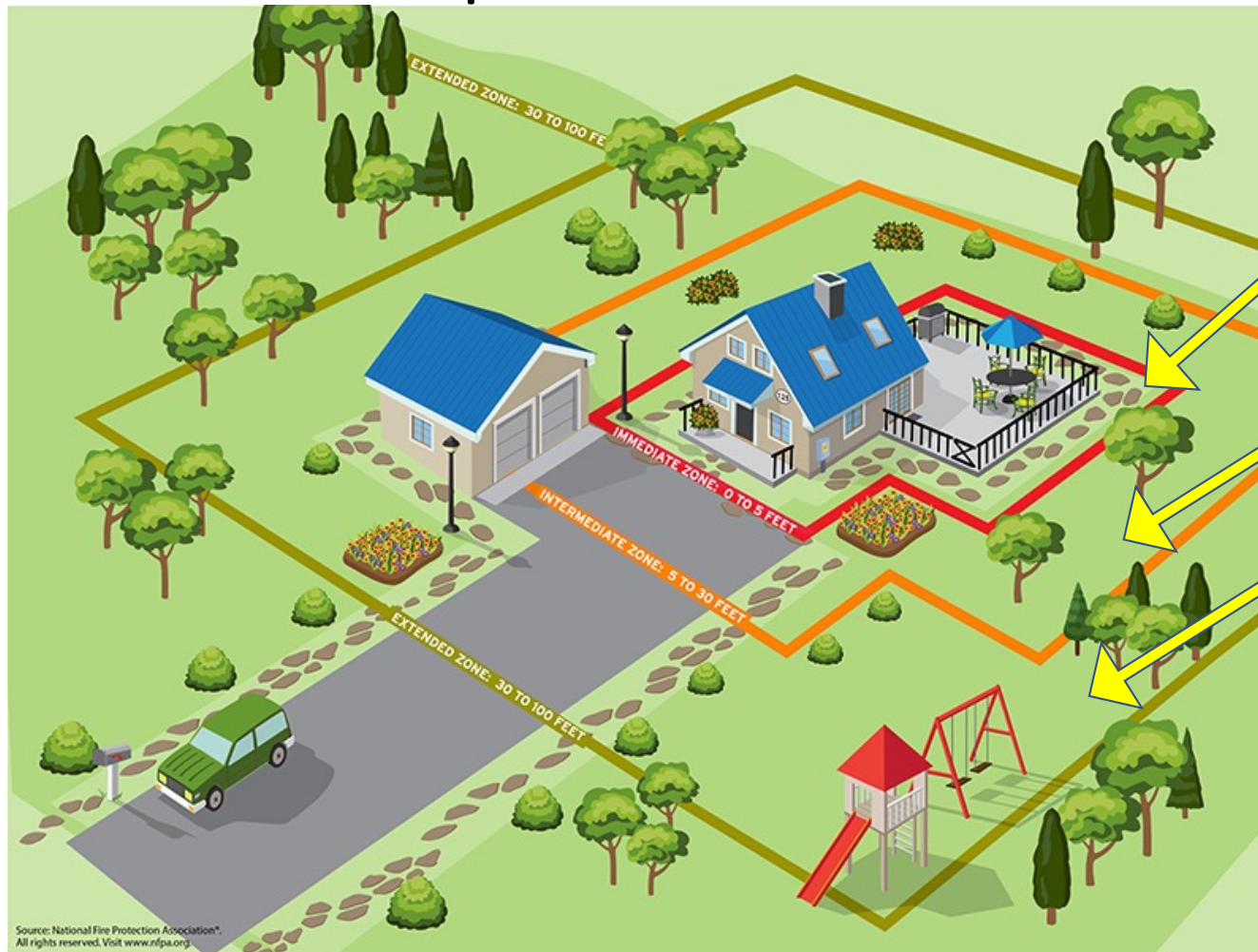
How does one achieve this?

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



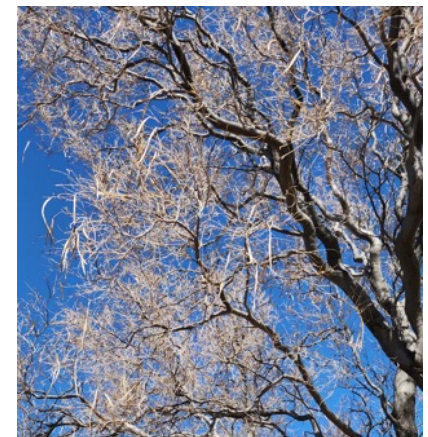
Immediate Zone
0 to 5 feet from structure

Intermediate Zone
5 to 30 feet from structure

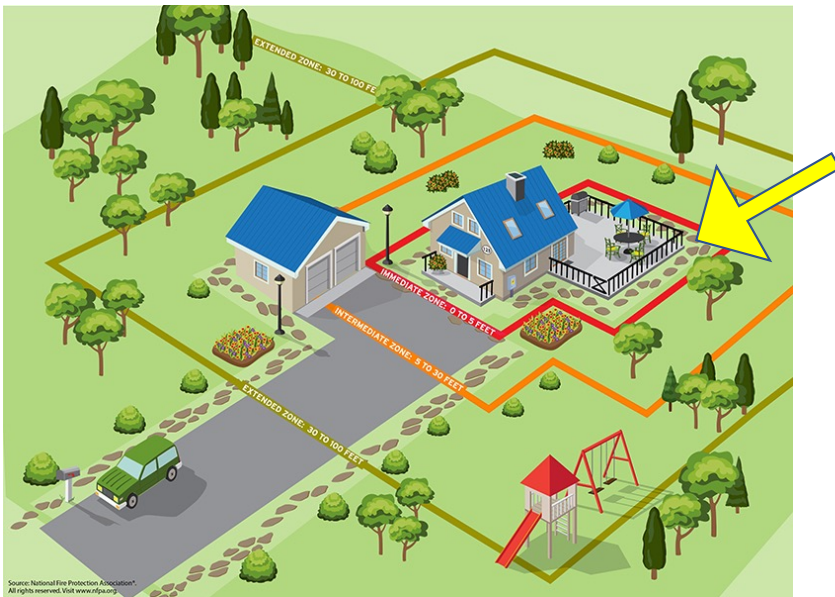
Extended Zone
30 to 100 feet from structure

Fire-resistant Plant Characteristics

- Plants have leaves, not needles
- Trees are not bushy, very little dead wood
- Shrubs are low growing shrubs, 2 feet or lower
- Taller shrubs are clean, not bushy
- Sap is water like, not strong odor
- Fire-resistant trees are broad leafed deciduous



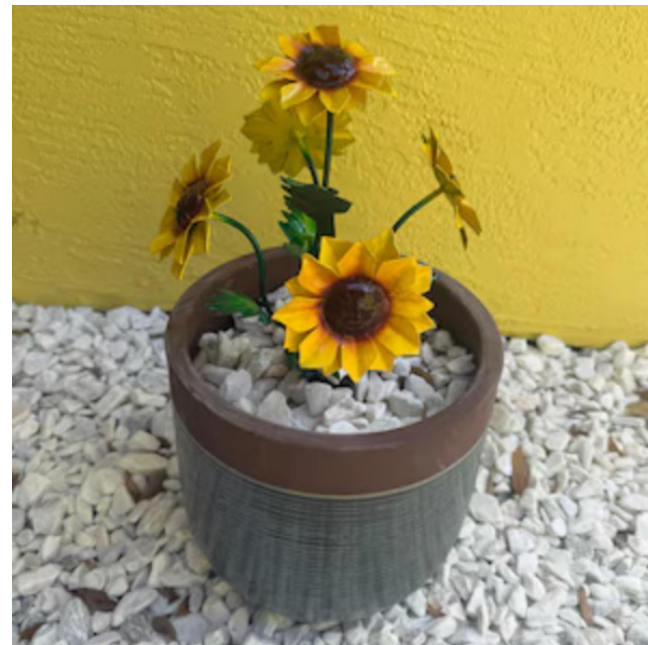
Immediate Zone - 0 to 5 feet from Structure



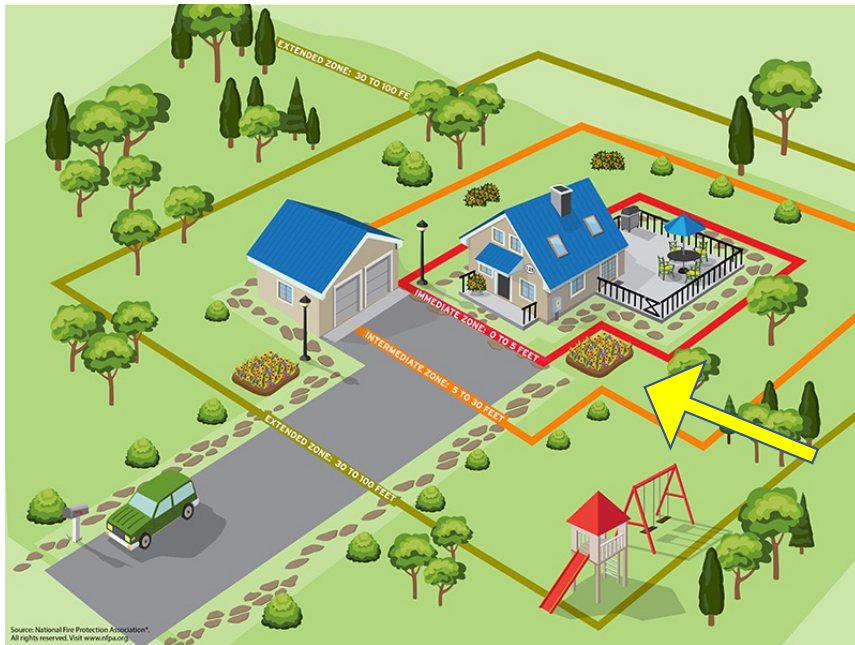
- Latest guidance from Insurance Institute for Business & Home Safety
 - Search "IBHS Wildfire" for all details
<https://ibhs.org/risk-research/wildfire/>
- No vegetation at all in this Zone
 - Gravel, stepping stones OK
 - Noncombustible Zone is measured horizontally from the edge of the home's exterior walls and, if present, the outermost posts of a deck, porch, or overhead structure, extending outward to five feet. This noncombustible zone also extends vertically to the sky to include trees.

Immediate Zone - 0 to 5 feet non-vegetative options

Stone or metal yard art pieces



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
- Annuals, Perennials
- Wildflowers- cut down at end of season

Fire-resistant Groundcovers - Intermediate Zone (5-30 ft from structure)

5-30 Ft

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



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

5-30 Ft
Ground Cover

Creeping Thyme (*Thymus serpyllum*)

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



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

Fire-resistant Perennials (Intermediate Zone, 5-30 ft)

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)

5-30 ft
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)

5-30 ft
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*)

Example of fire-resistant combination of succulents, perennials & annuals



Source: Pinterest

Fire-resistant Herbs

5-30 ft
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, basil

5-30 Ft

Fire-resistant Grasses (Intermediate Zone, 5-30 ft)



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.

Fire-resistant Grasses (Intermediate Zone, 5–30 ft)

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 Shrubs (Intermediate Zone, 5-30 ft)

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*)



5-30 ft
Shrubs



Oregon grape (*Mahonia*)

Fire-resistant Trees (Intermediate Zone, 5-30 ft)

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 its 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 scrub
Loses its leaves in fall
20 feet high and wide

Fire-resistant Trees (Intermediate Zone, 5-30 ft)

5-30 Ft



Redbud (*Cercis* sp.)
Average water drought tolerant
when established
20-30 feet high X 25-35 feet wide



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

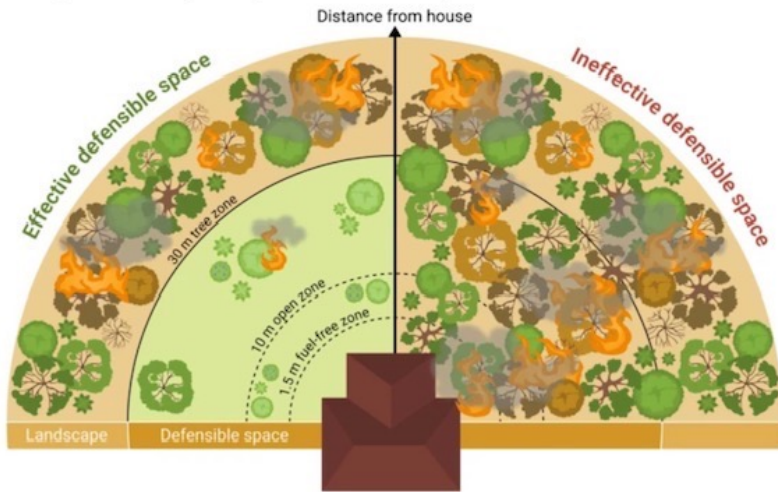


Chinese Pistache (*Pistacia chinensis*)
40 x 30 ft
Drought tolerant
Loses leaves in the fall

Plant Spacing

Defensible space diagram

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.

NPJ Natural Hazards, "Ondei, et al,18 (2024)

Landscape with defensible spacing of plants



California Dept of Forestry and Fire Protection website

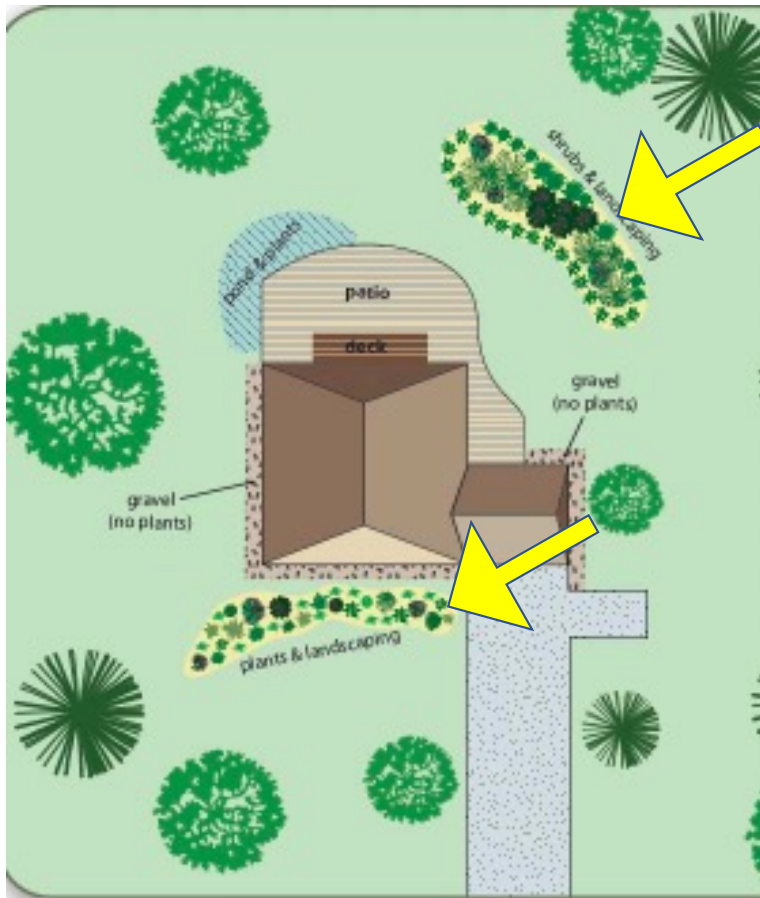
Fire Resistant Landscape Diagram



North Carolina Forest Service Publication

- Proper placement of plants in appropriate zones
- Island of plants
- Correct spacing of trees, which are limbed up 6-10 feet from the ground
- Debris is removed from areas around trees and shrubs

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.

Mulch in a Fire-resistant Landscape

Immediate zone 0-5 feet from the structure

- Use only decomposed granite, gravel, stone

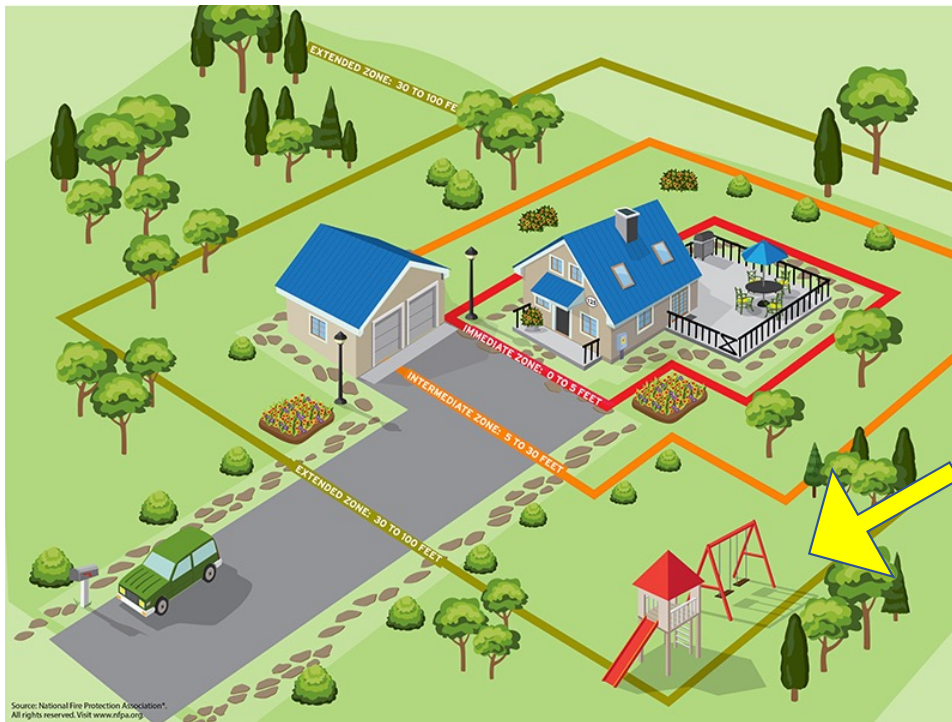
Intermediate zone 5-30 feet from structure

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

Extended Zone 30-100 feet and beyond

- Use bark mulch in islands and around individual trees

Extended Zone Plants 30-100 feet from Structure



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

Example of how conifers (cypress, juniper, pine, etc) can be limbed-up

30-100 ft.



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

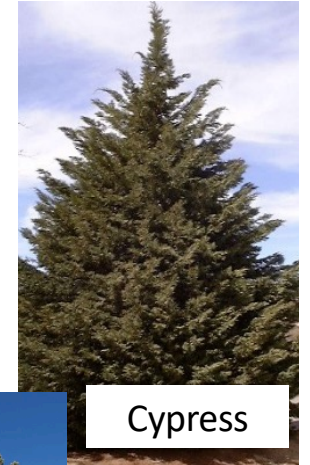


Fire-prone Plant Characteristics

- 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



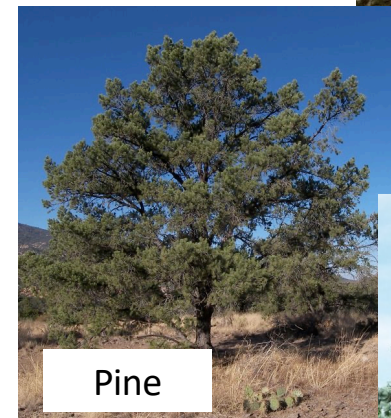
Juniper



Cypress



Cedar



Pine



Spruce

Fire-prone – Small, Resinous Leaves



Shrub live oak

Rubber Rabbitbrush



Pointleaf Manzanita



Catclaw Acacia



Fire-prone Grasses

(some native, most ornamental)



Yellow bluestem



Squirreltail



Deer grass



Fountain grass



Pampas grass

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

Cheat Grass



Stinknet



Salt Cedar

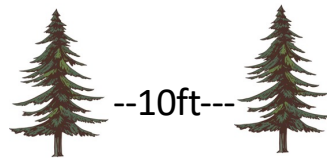


Red Brome Grass



Fire-prone Plant Guidelines

- Plant larger trees 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/publication/yavapai-county-firewise>



- Fire-Resistant and Fire-Prone Plants Common to Yavapai County
- Yavapai Firewise Community Resources
- Yavapai Defensible Space Contractors
- Plant lists for Verde and Prescott areas
- 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

Prescott Area

840 Rodeo Drive, Bldg C, Prescott

928-445-6590 Ext 2

prescottmg@gmail.com

MASTER GARDENER



YAVAPAI COUNTY



QUESTIONS????