

## CAN A CACTUS SAVE YOUR HOME FROM WILDFIRE?

By Gene Twaronite

While no plant is fireproof, there are certain characteristics which make some plants more resistive to fire. If you live in an area prone to wildfire (which includes much of Arizona's grasslands, foothills and mountains), choosing fire-resistive plants for your landscape can be a key factor in whether your home survives the next fire.

Admittedly, if your house lies in the path of an uncontrolled, catastrophic wildfire, no fire-resistive plant will save it. But most wildland house fires start not as a result of being engulfed by the main fire, but rather from floating embers carried far aloft and the creeping surface fires they ignite. Visualizing how these potential spot fires might move through your landscape is critical. Obviously you do not want plants that will burn with high intensity or that will readily carry fire to your home.

While all plants are potential fuel for wildfire, fire-resistive plants "burn at a relatively low intensity, slow rates of spread and with short flame lengths." (2006 International Wildland-Urban Interface Code) They burn this way due to various characteristics, including their chemical composition, form, growth habits, adaptations and maintenance.

Perhaps the most important characteristic is the total amount of moisture a plant contains relative to its dry weight. This is what makes a cactus (or any other succulent such as an agave) the perfect choice for a fire prone landscape. A plant that has evolved to store water is not one that will readily ignite or carry fire. But even a cactus needs regular watering during the hottest months to maintain its fire-resistive qualities; otherwise, parts of the plant will shrivel and die, providing a ready fuel source. A

succulent, however, will require substantially less water to keep it green and healthy – an important fact to consider in this increasingly arid region.

Deciduous trees and shrubs (those that lose their leaves in the fall) also tend to hold more moisture. They are thus an excellent choice to replace more flammable trees and shrubs in Zone 1, the area of wildfire-defensible space immediately surrounding your home.

Closely following moisture content is a plant's chemical content, particularly with regard to how much resin or other volatile compounds it contains. These chemicals cause the plant to burn more readily and with such great intensity and flame heights that in some wildfire literature they are referred to as “gasoline plants.” Included here would be most coniferous evergreen trees and shrubs (such as pines, spruces, junipers, cypresses, and arborvitaes) and many of the chaparral species of shrubs such as manzanitas (*Arctostaphylos*). Even when well irrigated, such plants still burn readily (as anyone who has burned piles of fresh cut juniper branches can attest). Though they are still not good choices for within 30 feet of your home, in some cases such plants can be “tamed” and made more fire-resistive through proper pruning and thinning.

Low growing plants also tend to be more fire-resistive because they produce shorter flame heights and offer the advancing fire less total vegetation (fuel). Included here would be irrigated turf (or some of the shorter native bunchgrasses), many groundcovers and wildflowers, and shrubs that grow to a height of less than 2 feet at maturity. There are even some creeping species and varieties of manzanita that can be considered fire-resistive. For example, bearberry (*Arctostaphylos uva-ursi*), only grows 6 inches high and very slowly at that.

This brings up another point. Often it is a combination of characteristics that makes a plant more fire-resistant. Thus a plant that is both low growing *and* slow growing is a much better choice than either of these characteristics alone. A gambel oak (*Quercus gambelii*) is fire-resistant not only because it is (a) deciduous but also because it is (b) deeply rooted and drought tolerant and (c) requires little maintenance because of its slow growth habit.

Some salt tolerant plant species also show a natural fire resistance, such as four-wing saltbush (*Atriplex canescens*). Just because a plant is salt tolerant, however, does not necessarily make it fire-resistant. The alien saltcedar (*Tamarix ramoissima*), though salt tolerant, contains volatile oils that make it highly flammable; it also grows rapidly and displaces more desirable native plants.

Though choosing fire-resistant plants is critical, even more important is how and where you plant them. Overly dense plantings of fire-resistant plants can create higher fuel loads that can nullify any fire-resistant qualities they may have possessed. Maintenance is also important; a plant that is dead or poorly maintained is no longer fire-resistant.