

## First Aid for Sunburned Plants

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Sweltering under the paltry shade of several overly-thinned palo verde trees, Thomas Park and I lamented their condition. Thomas, the owner of Xerophytic Design, had recently taken over an account and responsibility for some beautiful mature trees. The 30-foot, multi-trunk specimens had been stripped up to 20 feet with only lion tails of foliage left on branch ends. All interior foliage under four inches in diameter had been removed. The bark was yellow to pale green indicating sun damage had already begun. As Thomas and I reviewed options for saving the trees, these were some of our considerations.

While sunlight is necessary for trees to produce food energy through photosynthesis, too much sunlight can burn plant tissue including leaf and bark surfaces. There are several causes for this common malady in our low desert environment.

The first cause of sunburn is **poorly adapted plant species**. Native plants with smaller leaves, spines or needles are well-adapted to high sunlight and heat. But non-native plants are often vulnerable to sunburn due to larger leaves and less genetic adaptations to high heat.

A second reason for sunburn is **poor plant placement** in the landscape. West and south facing plants, especially those receiving late afternoon sun are particularly susceptible to sunburn. Also plants near water, concrete areas or other hardscape surfaces receive a double dose of direct plus reflected sunlight.

A final cause for sunburned plants is **over-thinning**. Over-thinning is difficult to remedy because it can take years to re-grow and nurture interior branches. But there are things you can do to prevent further damage and start the process of recovery.

First, stop removing all the suckers at the base of trees and shrubs and the watersprout growth along the lower main trunk and stems. These small shoots provide valuable shade to bark surfaces. As plants mature and bark tissue thickens, more of these sprouts can safely be removed but in the spring and summer, especially on younger trees, leave this interior growth alone.

Next, avoid topping or heavy reduction pruning of exterior branches. This type of pruning opens up the plant interior and this sudden and severe exposure leads to tissue damage or death. When sunburn occurs, the cambium just below the bark is destroyed, stopping the transport of water and nutrients to foliage above. This leads to dieback of foliage above which, in turn, allows in more sunlight, furthering the vicious cycle of sunburn and dieback.

Remedial treatments: If your trees have already been thinned or raised excessively and there are exposed branches or sunburn damage, here are some additional tips:

1. Shadecloth products can be used to cover parts of a plant or the entire plant. Shadecloth protects from sunburn while permitting enough sunlight through to stimulate new growth in the over-thinned areas.
2. Tree wrap products can be used to wrap individual branches. These 3 to 5 inch wide wraps are made of various materials and are very effective but they prevent new growth by blocking sun from the covered surfaces. They can also be unsightly.
3. **White or light-colored paint products** can help by reflecting heat and reducing surface temperature on bark tissue. But they shouldn't be solely relied on to prevent sunburn.
4. **Anti-transpirants** are also available. These liquid products are applied to plant surfaces to reduce transpirational water loss. Anti-transpirants need to be periodically reapplied, but they are useful on larger trees where shadecloth and tree wrap are too difficult or impractical to install.