

Avoid Heavy Pruning of Stressed Trees

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Most of northeast Nebraska is listed as being in extreme to exceptional drought (droughtmonitor.unl.edu). These conditions can be stressful to trees and the effects are often long term.

Trees may appear fine, but stress effects can linger for a year and usually longer even if we receive good moisture in the next few months. For this reason, heavy pruning of shade trees is not recommended during stress.

With drought, photosynthesis is often reduced due to a lack of moisture as well as high temperatures. At the same time, respiration, the process of using carbohydrates for growth and plant functions, increases. This leads to more carbohydrates, the product of photosynthesis, being used than produced.

Trees allocate carbohydrates to plant maintenance, growth, storage, reproduction, and defense. Stress alters how resources are allocated. During drought, a tree may enter survival mode and redirect resources away from growth, storage and defense to reproduction and maintenance. This is one reason we see heavy flowering and seed production following stress periods.

When trees are pruned, stored food in branches is removed and foliage for photosynthesis is reduced at a time when food production and stored food replenishment is needed. Heavy pruning during drought adds stress to slow a trees recovery. This also increases a trees susceptibility to tree borers and canker or wilt diseases.

Pruning creates wounds. When wounded, only the trees defense mechanisms, chemical traits and wound wood, can reduce decay formation and seal wounds. When a trees resources have been allocated elsewhere, defense mechanisms do not work as efficiently increasing the risk of decay.

The long-term effects of drought or other stress also depends on tree age, species, and other stress factors. Older trees, faster growing trees, and those that have had disturbances such as nearby trenching or construction tend to have lowered defense mechanisms increasing the risk of pest attack or decay.

To help trees, avoid heavy pruning. Keep pruning mainly to removing dead or broken branches or those creating an unacceptable interference with buildings or visibility. Hire an experienced arborist so correct pruning cuts are made. Always avoid flush cuts made with the trunk or leaving branch stubs. Do not use wound dressings or tree paints.

Provide a 12 to 18-inch deep watering when the soil is dry and air temperatures are above 45 degrees Fahrenheit. Know that tree roots extend outward up to two to three times the trees height so the larger the area watered, the better. At least water from a few feet away from the trunk to about six to ten feet beyond the drip line if nothing else.

If a tree is not mulched, even large established trees, consider adding a ring of mulch from near the trunk out to the drip line. Use organic mulch, like wood chips, placed on top of the grass or soil. Do not pile it against the trunk and use only a 3 to 4-inch depth. Glyphosate can be applied to the grass to kill it before placing mulch on top. There is no need to remove the dead sod first.

Avoid fertilizing trees with nitrogen, especially trees growing in lawns that are fertilized. Nitrogen and other nutrients are not plant food. They will not make up for a loss of food due to reduced photosynthesis. Nitrogen will force plant growth that uses more plant resources. And excess nitrogen can set a plant up for attack by certain insects and diseases at a time the tree already has lower defenses.