

Many trees under stress due to weather

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MANHATTAN – With the dry weather we have been experiencing over the past two years, a lot of people are wondering how their trees are faring.

Much like other vegetation, these plants are under a considerable amount of stress. Many people think their mature trees will survive since the roots are deep enough to extend into the water table.

While this may be true for certain locations, it is generally not the case, as the majority of a tree's root system is fairly shallow – within the top 24" of the soil – due to the need for oxygen exchange by the roots. Taking this into consideration, it is understandable that this portion of the soil profile is also the most prone to desiccation and competition from other vegetation.

Tree stress

Once a tree is stressed, it will become more susceptible to insect and disease problems. A considerable number of these damaging agents are opportunistic, targeting trees that are not growing as vigorously as they should. During periods of stress, these problems can become more prevalent and increase in number and extent.

A good example of this is the extensive

pine mortality that is being experienced in the Rocky Mountain region from the mountain pine beetle – a native insect that has reached epidemic levels because of conditions such as overcrowded older trees and periods of warmer, drier weather.

Overall, healthy trees are better positioned to ward off these types of attacks and survive until conditions return to "normal."

However, young trees are not immune either. Adequate moisture is certainly important to immature trees during the growing season, but entering the dormant season without sufficient resources will leave them more susceptible to environmental issues such as sunscald, decline and winter desiccation.

Some of these issues can even lead to additional problems in the future, reiterating the expression that "an ounce of prevention is worth a pound of cure."

What can be done to help your trees?

Ideally, provide supplemental watering if possible. A slow, soaking watering will help to ensure that an adequate amount of moisture reaches the root system. Soaker hoses, buckets with holes in the bottom, or turning the hose on at a slow trickle are all possible options for landscape trees.

In a larger planting such as windbreaks, supplemental watering might not be an option, so controlling competing vegetation may be the best bet.

Smooth brome is notorious for competing for moisture in tree plantings and usually comes out winning. Trying to control this "green death" will free up a considerable amount of moisture for the other plants.

In a forested setting, options exist for performing timber stand improvement to cull out some of the competing trees to release

resources for the more desirable species, usually the oaks and walnuts, as well as to encourage future regeneration. Limiting livestock access to certain areas will also help because of the soil compaction and root damage that can be caused.

Through proper management of these sites, you can help to ensure that desirable species will continue to be a part of the woodland for years to come.

Regardless of your approach, it is important to remember that it has taken an extended period for the trees to get to this point and is probably not something that can be corrected overnight.

By taking the time to put forth a little effort now, you will be in a better position for a quicker rebound and fewer problems in the future.

Ogallala Aquifer levels in Kansas drop

LAWRENCE (AP) – Water levels in the Ogallala Aquifer, a vast underground reservoir, have dropped significantly in sections of Kansas since last year, according to the Kansas Geological Survey.

Rex Buchanan, interim director of the Kansas Geological Survey, recently

completed an annual tour of the 1,400 wells that tap into the Ogallala in western Kansas. He said overall levels dropped about three and a half feet in January 2013 compared to last year. Declines in January 2012 averaged 4.25 feet, he said.

The water level declines were sharper in northwestern Kansas, which was especially dry in 2012. In southwestern Kansas, which saw a little more rain last year than the year before, the decrease wasn't quite as severe, he told the *Lawrence Journal-World* (bit.ly/12nTIT8).

The Ogallala, underground water locked inside gravel and sand hundreds of feet below the surface, stretches across several states, from Nebraska to Texas, including about 30,500 square miles in western and central Kansas.

Buchanan said even in a normal year, the aquifer only recharges at an annual rate of about a half-inch. But users in some sections are pumping water out at a rate of two to four feet per year and sometimes more. That rate, however, only increases during periods of prolonged drought like the one the region has

been experiencing.

"There's no question about it, we're running smack dab into the limitations of the aquifer itself today and the demand placed upon it by those pumping wells," said Mark Rude, executive director of Groundwater Management District No. 3, which governs water resources in much of southwestern Kansas, said

As water tables in parts of the aquifer have declined, state and local officials have started conservation measures in some parts of the state. This year, for example, Groundwater Management District No. 3 is imposing stiffer penalties for users who pump more than their permits allow, with fines up to \$10,000 and a one-year suspension of water rights for repeated violations.

Another measure has been to close off large areas of the aquifer to new water right appropriations. And in Dodge City in southwest Kansas, City manager Ken Stroble said the city recently installed a new water reclamation facility that recycles the city's wastewater so it can be used as a source of irrigation water.

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