



Summer 2013



# Conservation Conversation

## **Tree and Shrub Care During Years of Drought** by Carl Jarboe, NRCS Technician

Last year's drought was really hard on our trees, windbreaks, landscape plantings and gardens. This leads many people to wondering what this year will bring. So far we have not seen a good soaking rain or several inches of rain falling over two to three days. This is the type of rain that really soaks in to provide some moisture deep into the soil which is saved as a reserve for hot dry conditions.

How can you help your plantings survive such conditions? It's not easy but yes, you can help your plantings survive and even grow during adverse conditions, including drought and high temperatures.

The first consideration is plant type and variety. Have you selected plants that are drought and heat tolerant? Try to choose plants that require less water when possible and recognize that some plants are very adaptable while others will die if they get dry one time. Most nurseries and garden centers have labels on the plants they sell that include information about drought, heat and wind tolerance. Some plants cannot tolerate high soil temperatures while others need a break from direct sun light to perform well. Make sure the plants you choose are compatible with the site you plan to plant them at.

The second step is to mulch after planting. A layer of 2-4 inches can make all the difference in the world when we are talking plant survival. Mulch cools the roots, helps hold moisture and prevents plant competition by stopping weeds, grass or small bushes from growing. If you have a windbreak you may ask how to mulch for such a large area. One option is to use big round bales unrolled by a feed truck. After the bale is unrolled take your pitch fork and work the hay in between the plants. While 2" will work a 4" layer is best at stopping weeds and even some grass from growing. Individual plants can be mulched with old hay, straw or commercially available mulch such as cedar or cypress. Decorative rock is another choice, however with rock you will have to place landscape fabric under the rock to prevent or reduce weed growth. The natural mulches will prevent weeds without using a fabric barrier. It is also possible to lay just the fabric on the ground to prevent weeds. This works best when it is installed on bare ground. Another option is to spray the area with a product such as round-up to kill the existing weeds, mow very short and then install the fabric. Anything you can do to reduce competition for the moisture will help your plants survive drought and summer heat.

The final but far from least important thought is watering, when do you start and how much does it take? Timely watering is very important when you have little or no rain. You can use a screw driver as a way to check for soil moisture. If the screwdriver goes into the ground easily you have good soil moisture but if you have to put in effort you can bet the soil is dry from the top on down. Keep in mind that evergreen plants such as the Eastern Red Cedar will stay green long after they have irreversible damage due to drought. Deciduous plants such as Elm trees will start by dropping a few leaves that are crispy dry at the edges or maybe even dropping all of their leaves at once. Deciduous trees will usually re-leaf out one time before giving up all together, but Evergreens will not green back up; once they turn brown it's too late to start watering.

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Windbreaks are best watered with a drip irrigation system. The system can be designed to match the available water volume and pressure. For example if you can produce 5 gallon per minute or 300 gallon per hour you can water 75 trees with a drip system. Using two 2-gallon per hour drippers each, the system can run for 3 hours per week putting every drop of water in the ground.

Another way to water is to gather up as many 5 gallon buckets as you can find along with an equal number of bricks. Drill a small hole in the bottom of each bucket for the water to drip out of, then put a brick in the bottom, to keep the bucket from blowing away when it's empty. Set the buckets at the drip line of the plant you are watering (edge of the branches) and fill it up letting the water just slowly leak out and water the plant.

The main thing is to get out there and water before the plants show a problem. Unfortunately drought in Kansas looks like something we may have to get use to. So make it easier on yourself and your plants - mulch and keep them watered.

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## **Pond Issues** by Jarred Kneisel, NRCS Supervisory District Conservationist

Last year, in the midst of a historical drought, Kansas Department of Agriculture's Division of Conservation announced the availability of a new cost-share program; developed to help alleviate the impacts of the drought on livestock water availability. Dubbed the *Emergency Drought Livestock Water Supply Initiative*, but perhaps better known locally as the "pond-cleanout program," it provided opportunity for funding livestock water projects through the Non-Point Source cost-share program. Included in those eligible practices was cost-share on cleaning out existing ponds, available for the first time. Due to a combination of factors, interest in this program in our area was very high, and understandably so. However, when our office would go out to inventory these ponds and ensure that they would be eligible for the cost-share, several deficiencies showed up time and time again. Because this drought looks to continue at least through this year, and in anticipating the availability of cost-share to clean out ponds again, I thought it'd be a good time to talk about some of those pond maintenance items that need to be stayed on top of in order to ensure your pond functions for years and years to come (and hopefully will be filling back up with water very soon).

Far and away, the number one item we see needing attention is the removal of trees from the impoundment structure. While in the midst of this hot summer, we can daydream about sitting next to our pond in the shade of a tree right on the water's edge, and as long as that shade-tree isn't on the dam itself, it's not a concern. But a tree growing on either the dam itself, or in the spillway, is detrimental to your pond. Tree roots are the biggest source of concern, as they can punch through the core of the dam, leaving holes that water can seep through. This will weaken the dam, and may eventually cause a complete failure of the structure. In addition, trees can negatively compete with the grasses that are meant to grow on the dam or spillway, leaving the dam or spillway more prone to erosion. And finally, a tree impacts the way that water flows (by being an obstacle and creating turbulence). So if your emergency spillway is littered with trees, the water will not flow as it needs to, and the likelihood of erosion is very high. Going back to that picturesque shade-tree, another potential negative is that your grazing animals will lounge underneath, and strip the area bare of vegetation, creating an erosion (sediment) concern right next to your pond that you will be spending money on cleaning out. (As an alternative, it may be worthwhile to think about limiting livestock's access to the pond itself, while still utilizing the water for livestock – please stop in our office and visit with us about some options to accomplish both). Along those same lines, watch for excessive bare ground and/or cattle trailing, and re-seed those areas where necessary, as it is vital to the longevity of your dam to maintain as much cover (armor) as possible. So in short, those trees on the dam need to be removed while you're working there, and if you will be leaving a shade tree or two, watch to make sure that the groundcover remains in good shape.

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The majority of the ponds in our area were constructed without a pipe running through the dam. For those ponds that do have tubes, it is important to periodically check them to make sure there aren't any obstructions or blockages (brush, animal dens, collapsed pipe); that trash racks and rodent guards are in place, and that erosion or burrowing occurring around the inlet or outlet of the tube is corrected right away. If left untreated, an animal hole next to the pipe is a perfect pathway for water to run alongside the pipe and will quickly lead to a catastrophic blowout.

Before we talk about any repair tips, be aware that there may be some regulations that need to be OK'd through the US Army Corps of Engineers (USACE), or the Division of Water Resources (DWR), especially in larger drainages. You'll need to consider Wetland Compliance as well, but as a rough rule of thumb, if you are returning the depth back to the original depth, you should be fine. If you have any concerns, though, be sure to ask the appropriate people.

It can be tempting to deepen the pond to hold even more water than it originally did, but that can be risky due to the nature of the soils in our area. Unless you're confident that you will still be in good tight material (clay or bedrock) that you also cored the dam to, you may run the risk of punching through your liner and your pond will effectively be drained. My number one concern for ponds in this area – adequate soils for ponds are difficult to come by (for surface water, not necessarily ground water), and it can be altogether too easy to go through that layer and expose a sandy layer that will drain what water you had.

So if I can't go further down with the pond, how about raising the pipe and building the dam up more? Again, be aware of regulations that may affect this. Also, increasing the height of the dam requires a significant amount of dirt work since you will need to maintain the slope on the back toe of the dam in order for the dam to maintain its strength. As an example, on a dam with a 2.5:1 back slope, if you raise the top of the dam 5', you'll need to extend the back toe of the dam by 17.5'. Just adding height to the top of the dam but not the toe will weaken the structure when full.

Cleaning out silted-in ponds is a good management and maintenance item, but should be done with careful planning. Because of the reasons noted above, I would hesitate recommending that you make any changes to your pond's structure, but would rather just see them cleaned out back to their original depth. Of course, there are caveats to every scenario, so if you do have questions, please feel free to call or stop by. Also, a great publication on pond design (and maintenance) can be found at: <http://www.in.nrcs.usda.gov/pdf/%20files/PONDS.PDF>.

*Trees growing on pond dam and in spillway*



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## Range School Focus on Soil Health in Early August

“Creating Range Wealth Through Soil Health” is the theme for the Kansas Grazing Lands Coalition (KGLC) summer range school. The theme is indicative of the need for ranchers and land managers to employ grazing, structural and management practices that benefit the native grasses which in turn sustain or improve soil health.

The Conservation District is offering a scholarship for a rancher, producer, or student to attend the Mid-/Shortgrass Range School which runs from August 6-8 at Camp Lakeside, Lake Scott, and The Nature Conservancy Smoky Valley Ranch, Logan County. Registration to attend the camp is due July 23. Stop by or call the conservation office for more information.