

## **Ripple Effect #47**

### **SAVING FLOODED TREES**

Spring snow melt and rain often causes flooding in the Red River Basin. While concern is often focused on damage to buildings, roads and crops, trees can also be adversely affected. Unlike many crops, however, flood damage to trees may take longer to be noticed.

South Dakota State University Cooperative Extension Service has the following tips to help save trees that may have been damaged by recent flooding.

Tree growth is affected when the surrounding soil is temporarily flooded by overflow of streams and rivers or soil saturation by heavy, persistent rains. The primary effect of all flooding is the rapid depletion of soil oxygen.

Flood injury symptoms include leaf browning and wilting, premature fall color and twig and branch dieback. Symptoms may occur during or after flooding. Some trees may slowly recover, while others may take several years to die.

The tree's response depends on the season, depth and duration of flooding and the flood tolerance of the tree species.

*Season of flooding* - The most potentially damaging flood time is late spring, just after the leaves have fully expanded. At this growth stage, food reserves are low and the stress may kill the tree. After spring, flood tolerance increases with the season. During winter or early spring, before tree growth begins, most deciduous trees can tolerate several weeks of flooding.

*Depth of flooding* - There are three flood levels: saturated soil but no standing water, water covering the ground and lower tree and water covering the leaves.

Flood intolerant trees can be injured by saturated soil conditions. Flood tolerant and intermediate tolerant trees are usually injured only if water covers the ground. Almost all trees are injured if water covers the leaves. If only the lower branches are submerged, these may die while the rest of the tree survives.

*Tree species* - Not all species react the same to flooding. Some, typically those found along rivers, can adapt to flood conditions. Tolerant trees can withstand 80 days or more of saturated soils; intolerant trees generally can't survive more than 30 days and often fewer. Death can occur after only a few days of saturated soils for very intolerant species such as cherries.

An individual tree's tolerance depends on its age and health—older and healthier trees can withstand flooding of longer duration than younger or weaker trees.

After the flood waters have receded, inspect the tree for mechanical injury. During the flood, tree trunks or branches may be damaged by floating debris. Prune broken branches to prevent disease. With a sharp knife, carefully remove broken and torn bark.

If the flood has deposited sediment around the tree, carefully remove this material and restore the original grade as far out as possible, as even three inches of new soil can smother an intolerant tree's roots. However, some flood tolerant trees survive by quickly growing roots into the new layer of soil, so if the tree has already grown roots into the new soil, do not try to restore the original grade or it may kill the tree.

It can take several years for a mature tree to recover from a single year of flooding. During this recovery time, the tree is very vulnerable to attacks from insects and diseases. Inspect your tree several times during the growing season and identify and control any pest problems

For more information on keeping trees healthy, contact your local conservation district.

Until the next Ripple Effect,

The Red River Basin Commission (RRBC)

The RRBC is a grassroots organization that is a chartered not-for-profit corporation under the provisions of Manitoba, North Dakota, Minnesota, and South Dakota law. Our offices in Moorhead, MN and Winnipeg, MB can be reached at 218-291-0422 and 204-982-7254, or you can check out our website at [www.redriverbasincommission.org](http://www.redriverbasincommission.org).

