Flooding and Ponding around Trees

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The 2019 spring flood has had a devastating impact for all parts of the landscape, including trees. While the extent of the damage to trees may not be realized for years, how and if trees survive depend on several factors.

▪Certainly that the floods came when the trees were dormant is a factor in their favor. Flooding is always hardest on actively growing trees.

▪The length of time tree roots are submerged will determine whether they can survive. The water left behind after a flood (ponding) is more detrimental to trees because water replaces air in soil pore spaces. Since roots require oxygen to complete their metabolic processes, the lack of oxygen in waterlogged soils causes root death.

▪Some tree species, like the baldcypress, cottonwood, and willow tolerate the waterlogged conditions that flooding brings, mainly because they are able to regenerate new roots relatively quickly. Others, such as sugar maple, redbud, shagbark hickory and spruce are intolerant of waterlogged soils and will show symptoms of yellow leaves, lifting bark, brown needles, defoliation and crown dieback because of their slow regeneration of new roots.

▪Healthy trees, like healthy people, naturally have more resiliency when adverse events happen. The more robust the tree, the better able it will be to marshal the defenses necessary to survive the flooding. Healthy trees will have greater root regenerative capacity and more resistance to secondary insects and diseases that overcome unhealthy trees.

▪The stuff the floodwaters carry is a factor when determining if trees will survive. Deposited soil, raw sewage, petroleum products and a host of other contaminants are challenges to root survival.

What Can Be Done

Replace soil around flood-exposed tree roots. Likewise, remove all flood-deposited soil around trees, clearing away all excess around the trunk itself and continuing beyond the dripline. For trees toppled because of dislodged roots, small and medium-sized trees can be righted and staked for stabilization. Remove rock, landscaping fabric, and mulch (if it hasn't washed away) to allow sunlight and air circulation help with water evaporation from soils. Plan to remove broken branches at the proper pruning time of April, May or June. Although it is human nature to want to help, trees stressed due to flooding should not be fertilized.

More information about how floods impact plants may be found here: https://flood.unl.edu/horticulture .