SPRINGFIELD Tornado Recovery Tech Note #1

USDA Forest Service
Northern Research Station
Northeastern Area

Crown Loss Evaluation Guidelines

This simple guide will help in assessing the impact of storm damage to hardwood trees, suing a series of evaluation criteria, based on the structural integrity of the tree and likelihood of survival.

With this initial assessment, managers will be able to identify trees that may be damaged, but do not have to be removed, based on a series of evaluation criteria. Determining the consequences of the tornado damage will require periodic monitoring of tree response and external indicators of infection such as decay and discoloration fungi.

Safety considerations require prompt removal of hazardous trees and branches. Once those are removed, the remaining trees can be evaluated and a determination as to the final action on a tree can be made.

Tree damage and potential for survival is related to the extent of loss of the live crown. Discolored and decayed wood that results from wounding and infections will take one to many years to develop. Little additional loss of wood quality is expected in the first year following the damage.

Tree Evaluation Criteria

- Structural Integrity
- Extend of Damage to Crown
- Species
- Location
- Proximity to Nearby Infrastructure
- Adjacency to Other Trees

Prepared for the City of Springfield, Massachusetts

Less Than 50% Live CrownDamaged

30% Damage

Trees have a high chance of survival. Growth in some trees will slow due to loss of crown. Proximity to other trees as well as nearby infrastructure will also influence the final decision as to whether these trees should be saved or removed.

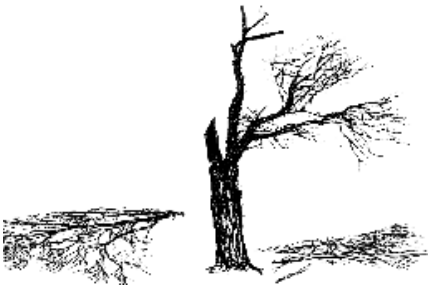
50-75% Live CrownDamaged

65% Damage

Many of the trees will survive with varying degrees of internal infections and growth suppression, depending on where in the crown breaks occur. Outer branch breakage will result in limited infection.

Breakage of large tops and/or large lower branches will result in more extensive infection. Shattered branch bases and torn bark increases the chances of infection. These trees will need periodic monitoring.

Greater Than 75% Live CrownDamaged



80% Damage

Trees have a low chance of survival. Surviving trees will probably become infected. Weigh wildlife habitat potential against any hazardous conditions before removal.

East Forest Park Examples