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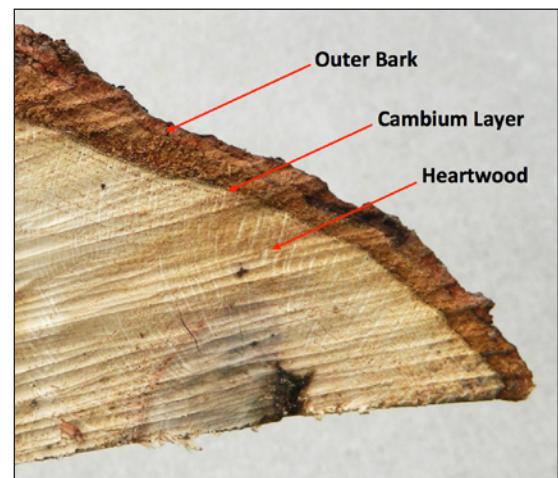
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# *Mechanical Damage to Trees:* **Mowing and Maintenance Equipment**

One of the most dangerous pests of trees is humans, especially humans with equipment. Lawn mowers and weed trimmers can cause injuries that create a hazard when an injury leads to tree disease or death. This publication explains why the damage is so dangerous and suggests ways to protect your trees.

## **Defended by Bark**

The site of injury is usually the *root flare*: the area where the tree meets the turf and gets in the path of the mower or trimmer. The root flare, like the rest of the trunk, is protected by bark, which guards a very important plant transport system just behind the woody bark layer. Specialized tubes move nutrients and water between the roots and leaves to keep the tree alive. Any damage to this transport system can affect tree health and the tree could die.



Damage to the cambium layer can cause serious health issues for the tree.



The bark layer can vary in thickness on different tree species. It can be more than an inch in thickness or less than 1/16 of an inch on young, smooth-barked trees such as maples and birches. This isn't much protection against string trimmers and mowing equipment, especially on young, newly planted trees.

### Damage Done

Any damage to or removal of the bark and the transport system can cause problems for a tree. Even when a tree tries to recover from a wound, leaves and branches often decline and die back, because food and water pathways were destroyed. Although a large wound is generally more serious than a smaller one, repetitive wounding adds up to greater trouble for the tree. If the damage extends completely around the base of the tree (a situation called *girdling*), the tree ultimately dies.



Old damage from mowing can create a serious risk in the landscape.

All tree wounds are serious when it comes to tree health. No matter what size the wound is, the damage done is irreversible. The tree must devote a great deal of energy and many resources into trying to seal off the damaged area to prevent further complications. The wounded area is an opening for wood-rotting organisms and decay fungi to enter and cause further damage. These microorganisms often attack the injured bark and invade adjacent healthy tissue, greatly enlarging the wound and extending the damage. Trees can be completely girdled from pathogen attack following injuries.

Fungi that are active on the wound surface can also deteriorate the structure of the woody tissues beneath, decaying and weakening the tree. This weakened, structurally unsound tree may eventually die and become a hazard to people around it.

### Preventing Problems

Newly planted, young trees need our help to become established in the landscape. They are the trees most commonly and seriously affected by maintenance equipment.



Recent damage from mowing equipment leads to decay and dieback in the tree.

However, injury to these trees can be avoided easily and at very low cost if you follow one or more of these suggestions.

1. Physically remove turf or prevent grass and weeds from growing at the base of the tree. This low-tech solution can eliminate a potentially serious problem.

2. Spray herbicides to eliminate vegetation around the base of the tree to decrease mowing maintenance costs. Be sure to use care when applying herbicides around trees. Carefully follow label directions.
3. Add a mulch ring, when possible, to help reduce the competition for water and nutrients. Mulch or other ground coverings reduce mowing requirements in the landscape.
4. Add a 2" to 3" layer of mulch on the root zone of the tree to provide an attractive and healthy environment for the tree to grow. This also provides a visual cue to keep equipment away from the tree.
5. Add trunk guards or similar devices to give the tree additional protection. White, expanding tree guards can help help trees withstand equipment contact and also can help to reduce winter injury.

Trees are a valuable asset to your property and are important to our environment. Every tree contributes to the urban forest and improves air and water quality in your neighborhood. Protect and preserve these growing assets by keeping mowing and weed-trimming equipment away from tree trunks. The damage lasts and it cannot be undone.

Don't create a hazard!



Mulch rings can provide a healthier environment as well as a visual cue to keep equipment away.

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