

## Is My Tree Safe?

Arborists regularly hear this question from homeowners and community managers. Usually it is stated as, “Will you come look at my trees and tell me if they are safe?”

I do not need to look at your trees to answer that question. I can tell you over the phone: *your trees are not safe*. Trees weigh many tons, they defy gravity, and we can only be certain that they will fall someday, the question being when and under what circumstances. The fact is that no tree can be made risk-free without removing it.

That is not to say that you should run right out and take down all your trees. But, whether you own a single shade tree in the front yard, or are part of a community with hundreds of trees, you do need to make some logical, well thought out decisions about trees and the risks associated with them.

### Safety And Risk

Safety is freedom from risk; risk is the chance of damage, injury, or loss. We all take risks on a daily basis in order to function in life. Some people are risk-takers, while others have an aversion to risk; each person must determine which risks and what level of risk s/he is willing to assume. For some, the thought of an airplane trip is almost more than s/he can bear; but that same person may think nothing of driving ninety miles per hour and shifting lanes without signaling on the way to the airport. Some people enjoy a walk in the woods when the wind is blowing. For others, that would be a very frightening experience. What degree of risk are you taking when you walk under your trees?

You can deal with risk in several ways. When aware of significant risk, most people try to *avoid* it. However, we must *assume* some risk in our day-to-day life, and we buy *insurance* to help us in case of a catastrophe. We try to *prevent* losses by maintaining our cars and homes properly. We wear seat belts to *reduce* the severity of damage if an auto accident occurs. Our insurance policies are contractual *transfers* of risk to the insurance company, who *pool* that risk and *spread* it around over all the policyholders.

### Trees and Risk

If no tree can be made safe without removing it, why are there trees all around our communities? The answer is that our society places a value on trees for health, aesthetic, and environmental reasons. Society has made a decision that people must assume a degree of risk because of the benefits provided by trees. Indeed, we would all be the poorer if absolute safety were demanded and all our trees were removed.



Thus, the question becomes, how do we define and rate risk in trees, and when does risk outweigh benefit with a particular tree? Arborists generally agree that a definable hazard exists where:

- there is dead or broken wood two inches in diameter or larger, fifteen feet or higher in a tree; *or* if a tree has a structural defect that would lead a qualified arborist to believe it is in danger of failing under normal wind and ice/snow loads;
- *and* there is a target... something of value or somebody that might be struck by the wood if it fell;
- *or* if a tree or shrub blocks a view critical to safety (such as at a street corner);
- *or* if a piece of a tree or shrub were likely to cause injury to a passerby (e.g., a sharp branch at eye level, or a trip hazard due to roots lifting a sidewalk, or a slip hazard due to fruit drop).

Beyond this straightforward list of hazards, defining and rating risks in trees becomes fraught with difficulty. Indeed, all trees pose some risk, but there may be an increased risk associated with a particular tree due to various factors. The presence of decay, a lean, an unevenly distributed crown, previous storm damage or construction activity, species, age, size, even something as subtle as the recent removal of nearby trees or installation of an irrigation system may raise a red flag in the mind of a qualified arborist. Just as is the case with people, biological health and structural stability are different issues; a tree can look great, but be a wreck structurally. To identify risk factors, each tree needs to be assessed individually by a competent professional.

The process is made more difficult because, in judging a tree's condition, there are many limitations for even the most qualified professional. It is possible that severe defects exist that could only be seen by a climber up in the tree, and almost all trees are judged from the ground. Internal structural defects can be completely hidden by normal growth of a tree, with no signs visible on the outside of the tree.

In spite of much research, how and why trees fail is not well understood. It comes down to the professional judgment of an arborist who considers all the risk factors associated with a specific tree, and decides whether the tree poses an increased risk of structural failure. When a particular tree presents an increased risk of failure, it is the tree's owner who must make the decision about whether that risk is unacceptable.

Most trees failures occur during or shortly after storms and in water saturated soils. We seem to be having more powerful storms these days than have been experienced over the last couple of decades, and many of our trees are going to be "tested". It is prudent not to stand under any tree during a storm or when ice has accumulated on surfaces, and one needs to be especially careful with trees near utility lines.

## **Mitigation of Risk With A Structurally Unsound Tree**

It is common to find that people do not want to remove trees that pose an increased risk, especially when the tree is very old or very large. Often there are things that can be done to reduce the risk. It may be possible to reduce the risk by moving or removing the target. For example, a fence with locked gates could discourage passersby from entering the area under a risky tree. Or, a playground, picnic table, or pathway in the woods might be relocated away from such a tree.

It is often possible to shore up or correct the failing structure of the tree. Cabling and bracing can be done to add support. A prop under a weakly attached limb/leader sometimes is possible. Large pieces of dead wood or weakly attached limbs can be pruned out.

Some arborists think it is a good idea to reduce the size of a structurally weak tree. The idea is that if the tree is not as large, it will catch less wind and weigh less, and thus be less likely to break apart. One flaw in this theory is that green tissue is what enables a tree to make food to support its physiological needs. Taking green leaves off a tree may cause it to decline more rapidly. Whatever is done regarding the structure of a tree, steps should be taken to improve its vigor as well.

It is important to recognize that, with any structurally compromised tree, the risk remains as long as the tree is there. Furthermore, decay inevitably progresses, and the chances of failure increase. Perhaps the risk can be reduced to a level where it is acceptable to the tree's owner; but only removal of the tree will eliminate the risk. From a practical perspective it is also wise to recognize that one can spend inordinate amounts of money to prolong the life of a tree for a very short time period. Preserving a monarch tree is all well and good, but it is also important to plant and provide adequate care for the younger trees that are the future forest of the community.

## **Developing A Risk Management Plan For Your Trees**

There are four steps in the risk management process:

1. identify the risk
2. write a policy statement
3. make a plan for treatment
4. establish a monitoring strategy

### ***1. Identify The Risk***

If you are a tree owner, than you do have a risk. You can better define the risk by having a qualified professional arborist conduct a Visual Tree Assessment (VTA) of your trees. In a VTA, the arborist walks the site to identify trees that pose an increased risk, based on outward signs of structural defects. A VTA does not include climbing the trees or using any invasive techniques, such as drilling to look for decay or removing soil from around the base of a tree. But it will identify those

trees that are obviously a high risk, and it will identify at least some of the trees that need to be examined more closely.

An inventory of the trees is nice to have since it makes identification easier and enables you to track health and safety issues related to your trees, but it is not essential. A plat of the grounds that shows where the trees are generally located is also helpful.

## *2. Write A Policy Statement*

For a community association, school, church, or park authority, the appropriate management group should develop a policy statement regarding trees and risk. It should acknowledge that there is a risk associated with the trees, and spell out how the association is going to manage that risk. The policy should be realistic and obtainable. Therefore, do not say that risk will be eliminated, but rather that you will strive to mitigate identified risks associated with specific trees in a timely fashion. If an accident does occur, a policy statement that has been adopted and adhered to is very helpful. It is more defensible to say that you were looking but did not see a problem than to say you were not even looking.

The policy should specify how hazards will be judged; for example, by using guidelines published by International Society of Arboriculture or the U. S. Forest Service, or the local Municipality's Parks and Recreation Department guidelines. A specific person or committee should be given the final authority to determine when a tree is deemed too great a risk to ignore, and to specify what steps are to be taken.

A strong policy takes decisions out of the political arena, and helps to defuse emotional conflicts that arise over tree issues.

## *3. Make A Plan For Treatment*

A treatment plan spells out how you are going to deal with the trees identified as high-risk, and what will be done with trees that need further examination. It should say who is going to do what when. If there are too many high-risk trees to deal with all at once, the plan may include an initial and a secondary strategy. These strategies may include a combination of tree removals, pruning, cabling and bracing, lightning protection systems, and treatments to invigorate the trees.

Remember that while arborists can attempt to reduce the risk associated with trees through implementation of various care practices, some risk always remains.

## *4. Establish A Monitoring Strategy*

If you or your association has been ignoring its trees for some time, you may find that there is a long and costly list of tree care procedures to be undertaken. After the initial flurry of activity, a long-term process for checking the trees needs to be put in place.

The monitoring strategy should spell out what trees are to be checked. For example, trees that could hit high-use areas such as your, or your neighbors',

buildings, roadways, sidewalks, playgrounds, or parking areas should be checked regularly. Older, larger trees need closer scrutiny than younger, smaller trees. Trees adjacent to recent construction activity may need to be watched more closely. Trees in the middle of the woods may be lower priority.

It is important to recognize that trees change as they grow and are subjected to stresses such as storms. A tree inspection is valid only until something changes, so periodic reassessments of trees should be made a routine activity. The monitoring strategy should say how often the trees are to be checked and by whom. It may not be realistic to check your trees every month, but it probably is reasonable to have a qualified professional look them over once or twice a year. You or the management staff may be able to survey the site after a bad storm to see if there are glaring problems that require a professional's scrutiny.

## **Conclusion**

Trees add value to a community or home. However, in order to have trees, you must accept some risk. You can manage tree risk by implementing a well thought out plan. Such a plan will provide you with healthier, safer trees, and some peace of mind.