

ROUND TABLE

Historic Trees: When to Preserve, When to Let Go?

Photos Courtesy City of New York Parks and Recreation except where noted



The "Surrey Stump" is what remains of a greater than 500-year-old Western red cedar (*Thuja plicata*) in Surrey, British Columbia. Photos Courtesy City of Surrey BC

Most arborists have heard about extraordinary measures being taken to preserve historic trees. In many cases, we judge the efforts worthwhile, while at other times we might question the wisdom of the expenditure of significant community resources to preserve heritage features that we personally consider to have limited value. However, urban forestry professionals may not always be best positioned to assess heritage values. In many cases, these values are best understood by those who live, work and recreate in the community where the heritage asset is located.

The City of Surrey in British Columbia has identified and registered many heritage trees, which are now protected through a tree protection by-law. However, the City has also accorded special protection to a very old stump; this story is unique in our city.

During the 1980s, many large parcels of land in the City were being subdivided into lots. During the survey work, a very large stump from a Western red cedar (*Thuja plicata*) was noted on the site plan. The stump, an artifact left over from the logging of first-growth forest land, was 5.3 m (17 ft) in height and 9.1 m (30 ft) in circumference. Estimated to be greater than 500 years old, the stump showed markings from springboard cuts that had been made by the loggers when the tree was felled around 1900. The stump had survived slash burning and farming of the land on which it stood.

A city planner took note of the stump and brought it to the attention of the developer, who agreed to save it during the development process. A small lot of 60 square meters (646 sq ft) was created, and the lot was deeded to the municipality of Surrey in



A view from inside the jacked-out, braced "Surrey Stump."

1985. Single-family homes were constructed on lots adjacent to the stump. Today, the stump is located just off a lovely tree-lined residential road. Over the ensuing decades, countless tour buses traveled to the site, where tourists marveled at the size of the stump, probably wondering what it must have been like to walk through a forest of such mighty giants.

In 2002, neighbors in the vicinity of the stump contacted the City to advise that the stump was a hazard. A city arborist visited the stump, and noted that the stump, which had always been hollow, was beginning to collapse inwards. A hazard evaluation was carried out and submitted to the City's Heritage Advisory Commission. The arborist suggested in his report that the stump had come to the end of its useful life and should be documented and then taken down. The Heritage Advisory Commission thought otherwise and commissioned another study to determine how the stump might be saved.

In 2003, the stump was jacked outwards to its original shape, a concrete footing was poured inside the stump, and a five meter steel brace was erected up the centre of the hollow stump to hold the sides firmly in place. Also, interpretive panels were developed to explain the history of the area, and how the stump came to be preserved.

The wood of the Western red cedar stump is fairly sound. With its brace in place, the stump should remain upright for many years to come, providing interest and heritage education for residents and visitors alike.

—Owen Croy, Manager of Parks for the City of Surrey, British Columbia

First of all, the term "historic tree" takes in a lot of territory. A historic tree can be a living witness to history on a site where a treaty was signed, a historic figure lived, or a notable event occurred. Or it can be just a grand old tree under whose leafy branches couples were married or prom pictures made. The results in all cases are the same: most people have connections to trees,

but some people have deep and abiding emotional connections to specific trees. The people aspect of historic trees is the key to handling difficult problems. My approach in dealing with situations related to historic trees involves four main elements:

1. Evaluation

I would do an initial inspection of a damaged or declining historic tree under my care, and if the prognosis was not good, I'd get a second opinion in the form of a written evaluation of the damage with possible treatment options. It is best to use a highly qualified consulting arborist or a board certified master arborist for this purpose. This second opinion is quite useful both as a backup and as a guide for proceeding with treatment. These evaluations are sometimes pricey but can be worth their weight in gold when dealing with a skeptical public.

2. Stakeholder involvement

I also have tried to identify and engage the stakeholders in this process to make them aware of the tree's condition and treatment options. A discussion with stakeholders helps them to understand the decisions that are made and can also garner their support.

3. Propagation and wood utilization

If the tree is too far damaged or declining and can't be saved, then it is wise to consider propagation opportunities through seeds or grafts to continue the tree's legacy. Wood utilization strategies for the remaining solid trunk and branches should also be discussed with the stakeholders prior to the tree's removal. Certainly the wood can either be given away as souvenirs, sold to wood carvers and turners, or retained for use as award plaques.

4. A Media plan

Finally, all decisions must be transparent and the public must be informed. The media love to cover these kinds of stories and are a very important tool in getting your positive message across to everybody. Once, I had to remove a grand but declining old white oak adjacent to a busy street and did a lot of work with the media before the tree was taken down. As a precursor to the removal, I offered the tree's acorns to the general public as a way of continuing the tree's legacy. This offer was picked up by the local news, sent out on the AP newswire, and I received hundreds of request for acorns from all over the East Coast. Paul Harvey even did a segment on his Paul Harvey News and Commentary as the tree was being removed. I received praise from all quarters. The media are very powerful, they are an integral part of your toolkit, and you should utilize them wisely.

—Gene Hyde, City Forester, Chattanooga, Tennessee

In "Why Do Trees Die?", George Hopper and David Mercker of the Agricultural Extension Service at the University of Tennessee write, "Trees die because respiration terminates, respiration terminates because carbohydrate production ceases and stored carbohydrates are exhausted. Carbohydrate production ceases because photosynthesis discontinues. Photosynthesis discontinues because the factors necessary for photosynthesis are interrupted or obstructed."

This process can simply be described as mortality spiral. All living things, trees included, eventually succumb to disease or age and spiral towards death. No matter how hard we try, even historic trees will reach the end of their serviceable lives and will have to be removed. The decision to do so is generally made when we recognize the point at which the spiral cannot be stabilized or reversed.

Safety concerns also play an important role in the decision-making process. Hazardous trees that pose a threat to life and property should be removed. Economics, particularly in this day and age, can factor into the decision-making process. Should scarce municipal resources be spent trying to extend the life of a tree beyond its serviceable life? Finally, there are the ethical questions. Do we as arborists knowingly try to preserve a tree when we believe it to be beyond help? If we chose to do so, even with the best intentions in mind, are we not creating a false sense of expectations for those who cherish the historic tree?

The Anne Frank tree in Amsterdam, Holland, may serve as a cautionary tale. In her famous diary, Anne Frank described a European horsechestnut tree (*Aesculus hippocastanum*) she could see from the building where she and her family were hiding from the Nazis. After her death and the release of her diary to the public, the tree became famous, so much so that the Anne Frank Tree became the name of an interactive project started by the Anne Frank House in 2006.

Since 1993, however, the tree has by all accounts declined in health and vigor. Contaminates from a nearby fuel tank have leached into the soil around the tree. Approximately \$200,000 was spent by the City of Amsterdam for soil remediation. *Ganoderma applanatum*, an aggressive fungus, was found to have rotted 42% of the tree. This resulted in the need to construct a large and expensive bracing system around the trunk of the tree to keep it upright. The crown was "aggressively pruned" (as described by the media) in order to reduce the load of the tree. Court battles ensued between the City, believing the horsechestnut was hazardous and should be removed, and private organizations intent on preserving the tree. In the end, after all of this, the most optimistic projection gives the Anne Frank tree 15 years of survival. When do we let go?

—David Oettinger, Municipal Arborist, City of Savannah, Georgia

Most historical trees are irreplaceable. In some instances, it is better to retain some piece of the tree rather than completely remove it and leave a plaque. In other instances, the only possible continuation is to grow cuttings from the original and pass them along as living legacies of the historic treasure, sadly gone.

I'll mention two historic trees in California—a redwood called El Palo Alto, and a 35-foot-diameter stump (once used as a dance floor) of the largest giant sequoia in Calaveras Big Trees Grove. El Palo Alto is still standing, although it's a fraction of its majesty at the time Don Gaspar de Portola named it in 1769; the City of Palo Alto was subsequently named after it. In Calaveras Grove, a story-board associated with the giant sequoia stump explains the history of the area and the men who logged the big trees. Many smaller giant sequoia trees still remain, but this stump is the measure of what used to be there.

As humans, we have a history of loving things to death. When evaluating a historic tree, I consider two things:

- 1) **Public safety.** The tree needs to be maintained in a way to reduce risk of failures to an acceptable level depending on site use, or the area needs to be cordoned off to provide the zone to reduce risk of failure to an acceptable level.
- 2) **Tree Health.** The love and enjoyment of the trees cannot cause compaction or disruption to the site to the point of tree decline, which increases the risk factor and reduces the longevity of the treasure.

The decision on a historic tree ultimately depends on the ability to

prevent tree failure or to keep the area clear in case the tree does fail. Ideally, the trees will continue to grow in a structurally sound manner, and people can experience them without causing tree decline. Usually, when the arborist is called in, something is wrong and we have to think in terms of the best means of mitigation.

—Gordon Mann, Mann Made Resources Consulting
Arborists, Auburn, CA

Trees as biological organisms are by nature dynamic; they sprout from a seed, grow, and die. We see this process in forests and we try to replicate forests in urban settings. People flock to the forests for vacations and pay more for properties with existing trees. Trees are the link between humans and nature—and when trees in urban settings grow to maturity and into decline, we face the inevitable sad decision of removing them before they are hazardous. But where the line is drawn? How do you decide when to remove a community icon for the safety of the community?

I would hesitate to draw a set line; there are as many situations as there are trees. Risk assessments, significance of the tree, relevant histories, cost of retaining vs. removing, cost vs. sentimental value, community attachments—all these things must be weighed in order to make management decisions. One must look at the big picture. I am certainly an advocate for preserving trees, but not to the point of futility.

On a modern note, when I look at the trees that have been planted in the last decade, I don't see many majestic specimens emerging from our current urban forests. Planting practices, nursery practices, inappropriate design choices, and ignorance play a large part in this. On a daily basis, I see tree after tree with severe sunscald, staking injuries, dead portions of the canopies, vandalism, buried root flares, wounds from transportation and installation, trees that dislike the high pH locally, wrapping that was tied with nylon twine that has not been removed, and improper irrigation. I am sure I missed a few! When I consider the current state of the urban forest and project forward, I don't see big trees being a part of that future, and therefore, I don't see our generation producing any significant number of historic trees that our progeny may enjoy. However, I am hopeful that urban foresters will turn things around.

Any tree anywhere that has stood the test of time and been a silent witness to the unfolding of human history carries within it a tangible link to our past. Seeing such trees allows one to connect to events of the past in a meaningful way—almost as if speaking to someone who was there. This explains why we sometimes cling to remnants of historic trees with a seeming ridiculousness, saving trees that have lived long past maturity; because of our selfish sentimentality, we don't give them the dignity of a quick death. It may not be the tree that we love as much as the meaning we attach to the tree. The tree brings the meaning that we crave through simply having been present at significant moments in our collective and personal history.

Although trees should be allowed to die with dignity, we should not be so quick to remove them. We should find creative ways to preserve parts of the tree in a way that preserves memories but keeps the public safe. Creativity and honor may save a bleak situation.

—Julie Lafferty, Certified Arborist, Eagle, Idaho

New York City is a city of trees: over five million of them at last count. As many as half of these trees grow on our 29,000 acres of parkland and therefore enjoy a measure of protection that other urban trees do not. Yet we still have magnificent arboreal treasures persisting on private lands as well. In 1985 NYC Parks & Recreation launched the Great Tree Search, to identify and recognize the most significant trees growing anywhere in the

five boroughs. This search identified 120 trees or groves of trees which were singled out for their unusual size, species, form, or historical associations. In 1996 we wrote a book about these Great Trees, telling the story of each one through the lens of history, biology, and community. That guide describes our Great Trees with eloquence:

They grow at the center of the city and on its outskirts, in people's front yards and back in the hidden corners of parks. They exemplify a wide range of species, from some of the first trees imported into this country from distant corners of the globe to the native timber that covered this land before so much of it was paved. Springing up here and there, sometimes in isolation and sometimes in groups, often planted by well-meaning citizens of the past, these trees mark a separate landscape within the city, where time passes more slowly and the birds and the wind in the leaves are louder than buses and cars.

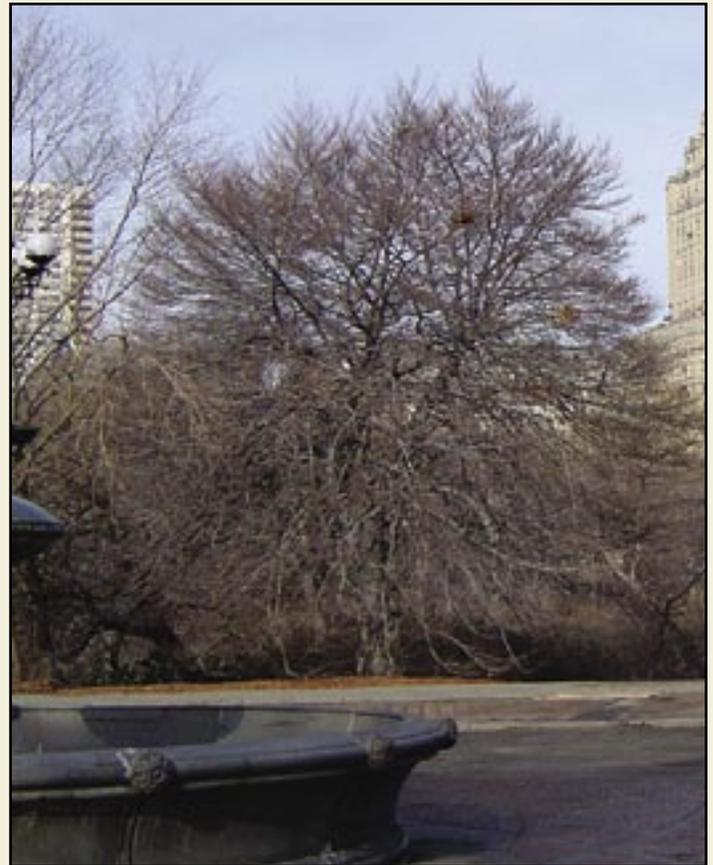
Here are a few examples of our Great Trees.



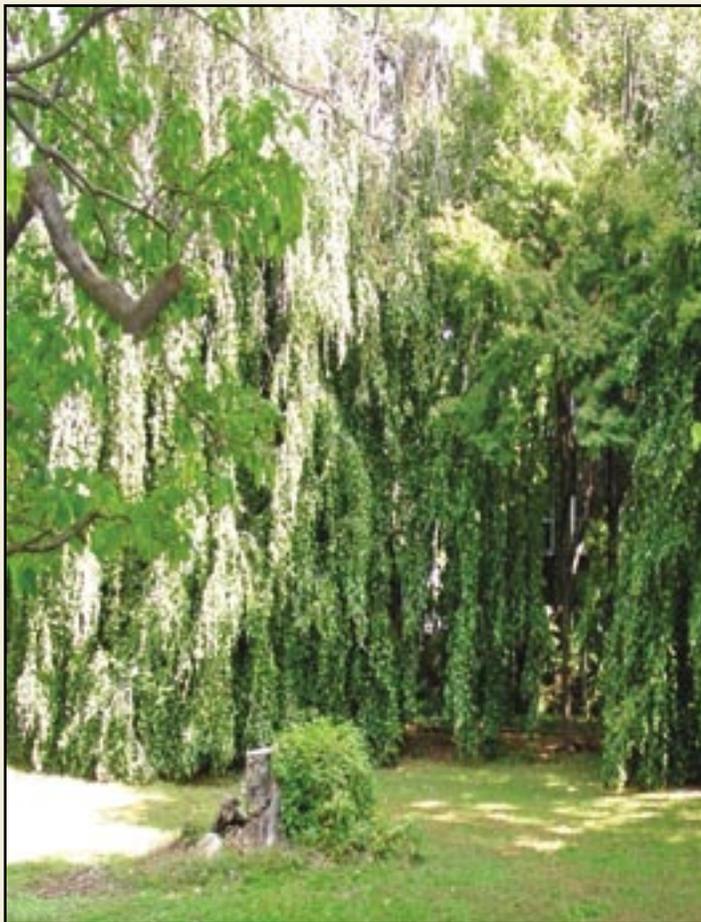
A truly massive English elm (*Ulmus procera*) on St. Nicholas Avenue and 163rd Street in upper Manhattan, now surrounded by sidewalks and apartment buildings, was likely an original planting of a large estate that now persists as the Morris Jumel historic house, situated blocks away.



A giant white oak (*Quercus alba*) stands on what is now the 18th hole of a golf course in a Bronx park, but was long ago the very ground over which American soldiers retreated after their decisive defeat in the Revolutionary War battle of Fort Washington.



In Manhattan, in Central Park's Conservatory Garden, stands what is surely the most magnificent crab apple (*Malus*) in New York City—and perhaps in any other large municipality—both in size, girth, and in the graceful spread of its abundant limbs.



A stump in a small tucked-away park in Queens is all that is left of the renowned 19th century nurseryman Samuel Parson's weeping beech (*Fagus sylvatica*), thought to have been the first weeping beech in the US. Now surrounded by its clones, this stump—and its ring of weeping beech offspring—is the physical embodiment of the circle of life.

These historic trees give us a living link to our past and are worthy of our special care. It is hard to put a price on the past. So we judge them less with the cold eye of cost/benefit analysis than through the nuanced lens of historic preservation. In the past 13 years we have lost 15 of our arboreal museum collection, but none to the axe of risk management.

Trees are self-optimizing mechanical structures that are expert at maximizing the use of their limited resources to grow, strengthen, compartmentalize, and reproduce. Should we not trust them a little more? The chainsaw solves safety concerns, but is no substitute to thought and careful investigation. And it is our responsibility to steward these treasures for the next generation, as well as to plant new trees that in years hence may assume the mantle of those we cherish today.

In NYC, we have recently launched an historic tree cloning project, in order to share our historical trees with a greater audience and to allow these 'champions' to be a part of more people's lives. To date we have cloned 45 specimens, producing genetically identical scions of our heritage trees that will be planted back into properties across the City in celebration of MillionTreesNYC, in which we are increasing tree cover in New York City by 20% by 2017. This wonderful program ensures that we herald our past even as we plan for our future.

—Fiona Watt, Assistant Commissioner for Forestry, Horticulture and Natural Resources and Matthew Wells, Director of Tree Preservation, City of New York Parks & Recreation 🌿