CONSERVATION TALK

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Trees and Stones

I was putting the finishing touches on this column when the June 2011 AGS e-newsletter came out with the article "Tornadoes, Trees and Cemeteries—Western Massachusetts." That article made this column all the more timely and pointed out yet another way that trees and stones can conflict with one another. It also points out, yet again, why as good stewards of the resources, we have to constantly attend to a whole range of issues in our cemeteries.

I was originally motivated to write this column in response to a query I received from an individual associated with an Alabama cemetery who was concerned because the caregivers were on the verge of removing all the trees in their historic cemetery. The motivation wasn't entirely clear, but they seemed to be arguing that the trees were affecting the stones, pushing them out of alignment and otherwise endangering them, as well as putting roots through all of the bodies buried in the graveyard.

Of course, whenever we have a question regarding the appropriateness of a particular activity, a good way to begin is to examine the guiding principles embodied in the Secretary of Interior *Standards for Preservation*. The *Standards* address issues such as retaining "distinctive materials, features, spaces, and spatial relationships," as well as warning that "alteration of features, spaces, and spatial relationships that characterize a property will be avoided" and recommending that caregivers "conserve existing historic materials and features." Thus, while the word "tree" appears nowhere in the Standards, the document makes it clear that the historic fabric should not be needlessly altered.

In addition, the Secretary of Interior has also developed standards for the preservation of the cultural landscape. This document, which is longer and more complex, says in part,

> Natural systems are an integral part of the cultural landscape and must be considered when selecting an appropriate treatment.
>
> Vegetation features may be individual plants, as in the case of a specimen tree, or groups of plants such as a hedge, allee, agricultural field, planting bed, or a naturally-occurring plant community or habitat. Vegetation includes evergreen or deciduous trees, shrubs, and ground covers, and both woody and herbaceous plants. Vegetation may derive its significance from historical associations, horticultural or genetic value, or aesthetic or functional qualities. It is a primary dynamic component of the landscape's character; therefore, the treatment of cultural landscapes must recognize the continual process of

Fig. 1. This tree, located in a coastal cemetery, isn't sleeping—it's dead. While removal is necessary, a new tree should be planted to fill the gap left by the removal of this mature specimen.

Fig. 2 The time to deal with this crepe myrtle has come . . . and gone. Although it is displacing this cradle grave, the tree is, itself, a historic part of the cemetery and the cemetery landscape.

germination, growth, seasonal change, aging, decay, and death of plants. The character of individual plants is derived from habit, form, color, texture, bloom, fruit, fragrance, scale and context. Well-conceived management and maintenance activities can sustain character and integrity over an extended period. Therefore, both the management and maintenance of cultural landscapes should be considered when selecting a treatment.

These documents reveal to cemetery caregivers something that may be scandalous to some AGS members—the vegetation of most cemeteries is as important as the stones themselves. The stones and trees learn to live harmoniously. Or perhaps I should say that the caregivers must learn how to live in harmony with the trees.

Often it isn't that the trees are causing a problem, but rather the caregivers have ignored the trees for so long that problems arise as a result of that benign neglect. Then suddenly it is fault of the trees that a stone was damaged and a cry goes up to remove trees. Instead, caregivers should be paying attention to the needs of the trees and ensuring they receive the maintenance they require.

If we wish to minimize tree problems all we need to do is follow a few recommendations. Trees benefit from pruning to either thin or clean. Thinning is a technique of pruning that removes selected branches to increase light and air movement through the crown. This also decreases weight on heavy branches. The natural shape of the tree is retained and its overall health is improved. In cleaning, the pruning removes branches that are dead, dying, diseased, crowded, broken, or otherwise defective. This includes narrow crotches. Under no circumstances are tree climbers (hooks, spikes, gaffs) to be worn while climbing or working in trees to be pruned.

All pruning within the cemetery should be performed by an ISA Certified Arborist. Too often I find that caregivers assume the cheapest service they can find will be adequate—and it almost never is. To find a certified arborist in your area, go to http://www.isa-arbor.com/faca/findArborist.aspx.

Trees should be pruned every five years. Remember also that trees should be pruned in such a manner as to preserve the natural character of the plant and in accordance with ANSI A300 (Part 1)—2001 standards. Don't know what these standards specify? That's why you hire certified arborists– they take an exam to prove that they know how to correctly prune and ensure the fitness of the tree. A healthy, pruned tree is less likely to be damaged—or cause damage to stones—during a severe storm. Remember, too, that trees should be inspected after significant wind events since there is likely to be some damage that will require the attention of the certified arborist.

A certified arborist can also conduct a rigorous risks and hazard analysis for the trees in your cemetery. Such assessments typically use a rating system. One of the best known is *A Photographic Guide to the Evaluation of Hazard Trees in Urban Areas* by Matheny and Clark. This document establishes a numeric formula to quantify the risk of a tree. Caregivers should never consider removal without going through such a standardized procedure by a neutral third party. I can't imagine a certified arborist removing an otherwise healthy tree.

It is also important for cemetery caregivers to understand that when it becomes necessary to remove a

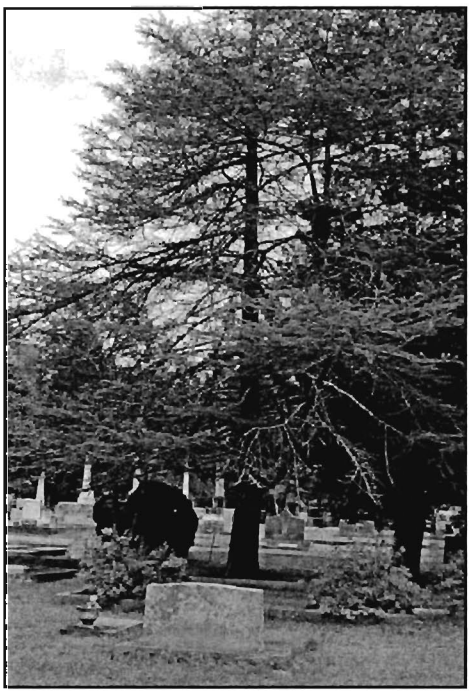

Fig. 3. This is an example of a tree that requires careful pruning to remove deadwood. The tree is probably under stress and should be evaluated by an ISA Certified Arborist.

Fig. 4. This tree should have been removed years ago, but maintenance was deferred until a storm blew much of the tree down—causing $5,000 in damages to several family plots.

tree, it is essential that a replacement tree be planted. In fact, replacement trees should be planted several years prior to any removal in order that the new trees have the opportunity to become established. Replacement trees help ensure that the landscape is not drastically altered and that as the cemetery—and its trees—age, its timeless beauty remains.

All replacement trees should meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). Nursery stock should be carefully inspected and specimens with wounds, crooked or double leaders, broken branches, or girdling roots should be rejected.

Conflicts between trees and stones can be resolved if caregivers are vigilant. Volunteer trees can be easily removed using hand clippers before they cause any damage to stones. If the tree is allowed to grow to the point that it is mature, it is absurd to suddenly claim that it is interfering with a grave – it has been "interfering" for 50+ years and the time for drastic remedial action has come—and gone.

In such cases the best approach is to move the stone slightly, perpendicular to the grave so that the burial location is not lost. The move should also be documented in your cemetery records, so the stone may eventually be placed in its original location once the tree has succumbed to old age.

Some attempt to justify tree removal by claiming that tree roots are "destroying" the human remains. Quoting the *ISA Arborist's Certification Study Guide*:

The framework of major roots lies less than eight to twelve inches below the surface and often grows outward to a diameter of one to two times the height of the tree.

Very few trees have tap roots that grow downward—I am sure that a certified arborist would be happy to identify your trees and, while doing a hazard assessment, explain whether any in your cemetery have taproots. However, as I have explained, they have been growing for several generations, so whatever damage might be done, has been done.

When graves are exhumed tree roots are rarely a significant issue. Far more damaging is water and the acidity of the soil—issues over which none of us has control.

Good practice in cemetery management demands that the cultural landscape—including the trees–be given as much respect and preservation care as the stones or other cemetery features. Thus, I again recommend in the strongest terms that no trees be removed without convincing evidence that they are hazardous. Every removal should also involve the planting of a new tree to help retain the historic fabric of our cemeteries.

Additional Reading:

Urban Tree Risk Management
http://www.na.fs.fed.us/spfo/pubs/uf/utrmm/urban_tree_risk_mgmnt.pdf

Restoring Trees After a Hurricane
http://hort.ufl.edu/woody/documents/EP300.pdf

How to Prune Trees
http://www.na.fs.fed.us/spfo/pubs/howtos/ht_prune/prun001.htm ♦

Fig. 5. This massive cedar is a significant component of the cemetery landscape. The fence may be slightly moved and restored, or fence sections may be removed and placed into storage until the tree eventually declines in health and must be removed.

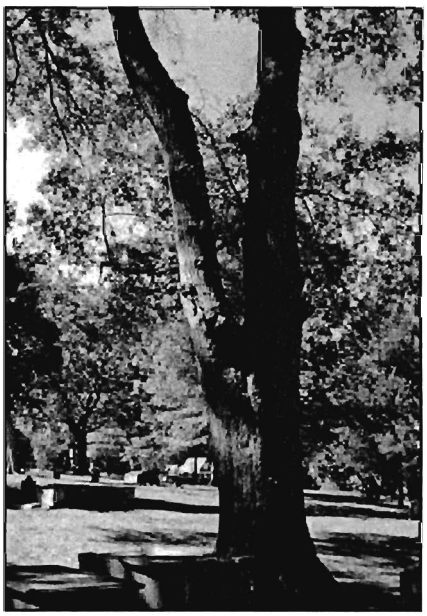

Fig. 6. This is an example of a tree with a weak branch and included bark. It may be appropriate to remove the weaker limb or a certified arborist might recommend cabling and bracing the limb in order to maintain the tree. Regardless, it should be assessed by a tree professional.