Keep your trees healthy by avoiding these common pitfalls

Ask any arborist and they will probably admit to bringing their work home with them. Long drives, runs, outings with the family—everywhere we go, we can't help but look at the trees that we pass with a critical eye. Nothing catches an arborist's eye more than management missteps.

Discussion with fellow arborists around the state indicates that several misguided management strategies are prevalent throughout Wyoming. Below are three common pitfalls and suggestions on how to correct them. By considering these management tips, you'll help improve the health and longevity of your trees (and brighten your local arborists' daily commutes).

Lack of mulch

A drive down I-25 or across I-80 tells you all you need to know about Wyoming soil—it isn't there to grow trees. Even in our lawn spaces we have pseudo-soil, i.e., heavily compacted dirt with a thin layer of topsoil. While sufficient to grow turf grass, it is a far cry from the loamy forest soils that naturally support the maple, honey locust, or oak trees you'd like to see thrive on your property.

This means that in order to grow trees, we also need to grow soil. The easiest and cheapest way to do this is by utilizing wood-chip mulch. Mulch provides a multitude of benefits to a tree. It retains moisture in hot weather, insulates root systems in cold weather, keeps string-trimmers away from trunks, and minimizes competition from greedy turf grass. Aside from adequate water, mulch may be the single best thing a homeowner can provide a tree.

The best attribute of mulch, however, is its ability to build soil. Mulch provides organic matter that we don't rake up and bag each fall. It creates an environment for beneficial fungi and decomposers to exist, which in turn creates nutrient availability for the tree. It's not a fast process, but we are working in tree time here.

Ideally, mulch rings are as wide as the tree's drip line (leaf edge of the canopy), but any size ring is better than none. Mulch should be applied at a depth of 3 to 5 inches and kept away from direct contact with the trunk. Re-application will be necessary, but that's evidence that decomposition is taking place.

Poor pruning cuts

When it comes to pruning, keep these basic principles in mind.

1. Pruning is both the best and worst thing we can do for a tree.

2. Every cut made on a tree creates the potential for decay.

Trees do not heal wounds by replacing damaged tissue with new tissue. Instead, they seal wounds through a process called compartmentalization. This is a slow process in which the tree creates a boundary between the wound and the wood surrounding it. The goal of compartmentalization is to prevent decay from moving from the cut surface farther into the tree.

Some Wyoming tree species, such as pines, honey locusts, and green ash, are strong compartmentalizers. However, most species found in Wyoming—including cottonwood, aspen, willow, crabapple, hackberry, linden, birch, cherry, and maple—are not. This means that the majority of pruning cuts made in Wyoming initiate decay in our trees. This observation is not intended to instill fear of pruning, but rather to emphasize the importance of implementing a thoughtful pruning regime that follows best practices.

Entire books have been written on pruning and there are a multitude of resources for learning how to prune. A good starting point is to follow the two P's of pruning: proper and purposeful.

Proper cuts are those that have been made in locations that allow a tree to better compartmentalize the wound. Removal cuts should be made just outside the branch collar, taking care to not leave a stub or rip the bark connecting the branch to the trunk.

Reduction cuts are used to

shorten the length of a limb or train young trees. These cuts should be made back to a subordinate branch that is at least one-third the diameter of the parent branch. Since reduction cuts maintain canopy and prevent wounds from being placed at the trunk, they should comprise the majority of pruning cuts on an individual tree.

Purposeful cuts are those made for a compelling reason. Before making a cut, consider why you're choosing to decrease the tree's photosynthetic capacity and increase likelihood of decay. The reduction of an overextended limb has purpose, as does the removal of a diseased branch.

Trees must be functional, so pruning with a purpose may include lifting branches to improve line of sight or overhead clearance. However, the casual removal of branches to alter how a tree looks does not have purpose. For every pruning job, establish a scope of work and define which branches are being cut and why.

Purposeful pruners should keep the following in mind.

- Minimize cuts larger than 6 inches in diameter.
- Prune less material, more often.
- Prune certain species only in certain seasons. (For winter pruning tips, check out https://bit.ly/bb-winter-pruning.)
- Remember that poor pruning leads to decay, decay leads to risk, and risk often leads to the removal of trees.

Lions-tailing

Lions-tailing is the practice of "gutting" a tree to expose branch architecture. In doing so, the majority of lower and inner canopy is removed from the tree. As these branches are often the easiest to reach with a saw, homeowners may unintentionally damage their trees by using this approach. The end result is branches that only have a "puff" of canopy at the tips of branches, similar to a lion's tail.

This practice is detrimental to the tree's health for multiple reasons. For starters, no more than 20 percent of the canopy should be removed during a single season; that amount should be closer to 10 percent for mature trees (e.g., cottonwoods). Lions-tailing typically removes anywhere from 50 to 75 percent of live canopy at a time. Wyoming's growing season is too short for a tree to compensate for the loss of that much photosynthetic material.

American elm tree in a city sidewalk space suffering from lions-tailing. Photo by Clark Van Hoosier.

For most Wyoming tree species, the apical meristems (the points where new growth can occur) are only found on the tips of tree branches. This means the loss of internal and lower branches cannot be replaced. If the canopy does fill back in, it comes in the form of epicormic sprouts or "suckers" that are weakly attached to the tree, making them prone to failure and dieback.

Furthermore, placing all the weight of the canopy on the outer edges of the tree creates a lever effect that makes tree branches more susceptible to wind and snow damage. This type of damage is all too familiar to Wyoming tree owners, even on well-pruned trees. The majority of pruning cuts should be made on the outer one-third of the canopy, reducing weight.

Next time you go out to check on your trees, think about whether you may be unintentionally perpetuating the issues described above. If you mulch your trees, practice proper pruning, and avoid lions-tailing, you can help ensure that Wyoming has a thriving tree canopy for decades to come.

Recommended resources

- Wyoming Tree Owner's Manual: https://bit.ly/all-things-trees
- International Society of Arboriculture: treesaregood.org
- *An Illustrated Guide to Pruning* by Edward Gilman

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