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# TREE AND SHRUB CARE



## TECHNICAL GUIDANCE DOCUMENT

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### INTRODUCTION

Trees and shrubs are often planted in wetland and upland buffers in the forested region of the state to restore forested wetland plant communities. Weed competition, insufficient rainfall, high water tables in wetlands, and herbivores can all influence the survival of new plantings. Strategies such as mowing and spraying of weeds, applying mulch, supplemental watering, pruning, and herbivore control can all help increase plant vigor and survival.

A wide variety of materials may be used for tree and shrub care. For watering, water tanks, pails, hauling equipment, or irrigation systems may be needed. Tree mats, landscape fabrics or mulches may be used for moisture conservation. For weed control, mowers, cultivators, mulches, shovels, herbicide equipment, and landscape fabrics may be used. For insect or disease control, insecticides or fungicides are sometimes used along with pruning saws, or chain saws, and bags for disposal of diseased trees or branches. Fertilizers and broadcasting equipment may also be needed in some cases to add nutrients for trees and shrubs.



### APPLICATION

#### Watering

Newly planted trees and shrubs may need extra water if rainfall is inadequate. A good rule is an equivalent of 1 inch of rainfall per week. Seedlings need extra water until their roots expand into the soil beyond the planting hole. Various types of mulch can be used to help conserve moisture. It is unlikely that irrigation will be available to water the planting, so it may be necessary to hand water each individual plant during dry periods. If an irrigation system is used, water should be applied at a low enough rate to minimize runoff, scouring and soil erosion. Water less often in later summer as constant watering can stimulate continued growth when trees should be going dormant into fall.

## Fertilizing

Fertilizer use is beneficial for hardwood trees and shrubs, however should be avoided for use on conifers because it can unbalance the root to shoot ratio resulting in diminished capacity of the tree to withstand environmental stress. Fertilizer can be beneficial in less than ideal planting locations such as very sandy or heavy clay soils. Fertilizing can also be beneficial to plants that are suffering or recovering from disease or insect damage. Generally, fertilizer is not needed if plant growth and color for particular species is normal. A soil test is the best procedure to determine how much fertilizer should be applied. In the absence of a soil test, the shoot growth in the current year is a good indicator of growing conditions. Fertilizer generally is not needed if growth exceeds 6 inches or more. The MN DNR website and related links to the Minnesota Extension Service have good resource information on fertilizing trees.

## Weed Control

When done properly and maintained, mulching can be an effective tool to control weed competition, reduce soil surface temperature and to conserve moisture. Mulch can decrease watering and weed control needs, and stimulate tree vigor. Coarse sized mulches like shredded hardwood mulch is recommended. Mulch should be applied three to five inches deep, and re-applied annually if needed as material decomposes. Mulch should be kept six-inches from the plant to prevent decay around the stem, and prevent small rodents from living adjacent to the plant. Avoid use of “green” mulch such as fresh sawdust, as it can reduce nutrient availability in the soil. Mulch is most commonly placed around single stems but it can be used over large areas, particularly if trees and shrubs are planted close together.

When mulching is not practical for a project mowing is often needed to control weeds as trees and shrubs establish. Mowing frequency should be based on the height of trees and shrubs, the types of weeds present, and the growth rate of weeds (influenced by available nutrients, and rainfall). As a general rule, weeds should be mowed around seedling trees and shrubs as they reach about 1.5-feet tall. It is helpful to flag seedling trees and shrubs so they are visible during mowing.

## Pruning Trees and Shrubs

Pruning can improve plant form as well as stimulate suckering and root development. Pruning should be performed during the dormant season, usually late fall to early spring before the buds swell. After the first growing season, plantings should be inspected to determine which trees need pruning. Any multi leader trees should be pruned back to one leader. Crossing branches and branches that curve back toward the center of the tree should be removed. One side of forked branches should be removed. Branches browsed by animals may need pruning to remove damaged twigs. A good rule of thumb is to never remove more than one third of the live growth.

Pruning shrubs is not as critical as pruning young trees but the principles to promote good branch structure should be considered. Good branch structure can promote better fruit production for wildlife use.

To shorten a branch or twig, it is cut down to about one quarter-inch above a side branch or bud. Always cut above the bud that is facing to the outside of the tree so the branch is forced to grow in an outward direction.

Conifers usually do not require much pruning. Multi leader stems should be pruned to leave the dominant terminal leader and to remove broken branches.

## Herbivore Control

Deer, rabbits and other rodents can significantly impact the success of tree and shrub plantings. Large exclosures with electric wire typically are not feasible to deter deer. Deer repellent sprays can be effective but require multiple applications over a period of years until the terminal leader of the trees grows to a point above the browse line. Bud caps can be effective over winter months. Tree tubes, tree protectors or wire mesh may be needed in some areas to prevent rabbit and mice from eating bark around the base of trees and shrubs. An advantage of tree tubes is that they can provide protection from deer as well as rodents as the tree matures. Solar powered electric fences have also been effective for some projects. These practices add costs to projects, so they should be used as needed to deter herbivores.

## OTHER CONSIDERATIONS

Weed control by mowing or herbicide treatment may be needed to aid tree and shrub establishment. Prescribed grazing can also be used to manage weeds in uplands but monitoring is needed to ensure that trees and shrubs are not damaged. Measures may be needed to prevent grazing by deer, rabbits and other rodents. Tree and shrub plantings must be protected from wildfire and prescribed burns.

## COSTS

The costs for tree and shrub care will depend on the overall acreage to be managed by watering, weed control, pruning, herbivore control or other practices; as well site conditions, and how assessable the site is for equipment.

## ADDITIONAL REFERENCES

Minnesota DNR Backyard Tree Care [www.dnr.state.mn.us/treecare](http://www.dnr.state.mn.us/treecare)