Tree Protection in Yards, Farms and Forestry Plantings

by Jeff Stringer

Protecting trees directly after planting and for their first few formative years can be extremely helpful—or required—to ensure survival. In some cases protection may be required for many years. Protection generally includes providing shelter from adverse environmental conditions and protection from animal and human damage. Protection can be costly if large numbers of trees must be protected, so in large scale forestry plantings protection is often not practical. However, for a small number of trees protection may be a very cost effective option to ensure success. Protection is especially warranted for trees that are in urban environments, planted in locations where they are exposed or subject to damage from wild or domestic animals. Following is basic information on some common methods of tree protection.

Trees planted in urban environments are more exposed to the elements during the winter. Wrapping the trees with a commercially available tree bark wrap will help protect them from frost cracking and sun scald.

Photo courtesy: Fredric Miller, Joliet Junior College, Bugwood.org

Winter Exposure

Winter exposure problems can occur to trees of all ages that are planted in the open or widely spaced so they are fully exposed to the elements, including yard or street trees, trees in orchards and wind or shelter breaks and trees planted by themselves regardless of the purpose. When the base or lower main stem of the tree is exposed to direct sun in the winter, two types of damage can occur: frost crack and sun scald.

Frost cracking occurs when temperatures are very low and the base of the tree is exposed to direct sun causing expansion and contraction from temperature changes. Particularly in thin-bark and young trees, the stem can develop vertical fissures. The condition can occur in a wide variety of species and ages under the right conditions. Frost crack can be made worse by previous injury that causes uneven growth in the stem and uneven expansion and contraction.

Sun scald results from sunlight increasing temperatures of the underlying bark causing the living cells in the inner bark to be more susceptible to freezing during the cold night. The bark tissue dies, causing a wide vertical patch of dead bark that has to heal. Sun scald, like frost cracking, typically occurs on the southwest side of the tree, which has the most exposure to direct sun in the winter months.

Protect trees from winter exposure by following two simple recommendations: Don't fertilize the trees heavily in the fall, and apply a commercially available white paper or reflective tree bark wrap to the base of the trees in the winter. (Remember to remove the wrap as spring approaches.)

Protection from Yard Maintenance

Young and thin-bark older trees are susceptible to physical damage, primarily bark wounding, from lawn mowers, weed eaters, and other types of lawn equipment. Once the bark is knocked off the tree the only means the trees has to fix the problem is to grow callus tissue from the edges of the wound that will eventually cover the exposed dead wood area. If the wound is wide this repair could take a number of years. Protecting trees from equipment injury can be accomplished by various means. Keeping grass and weeds away from the bases of large trees will protect them from mowing and weeding machines. Properly applied wood and bark mulch beds around the tree will

Photo courtesy: Jeff Stringer

Lawn equipment is one of the biggest threats to trees planted in urban settings. Mulching trees properly will prevent weeds and grass from growing near their bases and eliminate the need to get near them with weed eaters and lawn mowers.

work, as do commercially available shredded rubber tire mats. Biodegradable paper weed prevention fabric is also available and can be used by itself or under mulch to help prevent weed growth next to the base of trees. Small trees can also be protected from this type of damage using a tree tube or tree shelter (see below).

Protection from Grazing and Wildlife Damage

Wildlife, both large and small, can significantly reduce survival and growth of planted seedlings. Critters such as voles can girdle seedlings at the ground line. Mulch and thick grass around seedlings can increase this risk. Rabbits can also girdle trees above the ground line and consume buds and terminal shoots within their reach. Of course large animals such as deer browse on buds and terminal shoots especially in the winter. Plantings around or in pastures, paddocks, or other similar areas are subject to physical injury from the animals eating or trampling them. Newly planted or first year seedlings normally have high concentrations of nutrients from fertilization in the nursery, making them very attractive to some animals both domestic and wild. Protection from large animals such as cattle, horses, and aggressive animals such as hogs and goats often requires fencing far enough away from the tree so that animals cannot possibly reach the bark.

Tree shelters (tree tubes) can be used to protect newly planted and young seedlings from many wildlife species and some domesticated animals such as sheep. These commercially available shelters act both as a small greenhouse for the seedlings thus enhancing growth and protecting from animal damage. The tubes must be placed down into the ground in a manner that will seal them so that air does not enter the bottom of the tube; the trees are then protected from many rodents such as voles and mice. Tubes can be purchased up to 4 feet tall and can also protect the trees from rabbits, deer, and non-aggressive livestock such as sheep.

Photos courtesy: Jeff Stringer

Some tree plantings occur in areas that are subject to wildlife damage. Tree shelters placed around newly planted tree seedlings can significantly enhance the survival rate of the plantings. Tree shelters can offer protection from rodents and deer. Tree shelters will not protect seedlings from cattle, goats, hogs, or horses instead fencing will be required.

The tube type shelters were actually designed in Europe to help with planting trees in pastures (silvopasture). Tree shelters require a stake and some time to put into place. One negative aspect of shelters is that in some years the trees can keep growing into late fall and are susceptible to early freezes because they have not hardened off. Some shelters are designed to be opened during the fall to allow for proper hardening of the tree before winter. It is important to note that if the shelter is totally removed from a seedling before it grows out the top of the shelter it could be susceptible to bending or breaking off if the sheltered seedling has not developed a structurally rigid stem. Once the tree comes out the top of the shelter for several years it develops a tough stem and can stand on its own. It should also be noted that tree shelters are not extremely effective in keeping cattle, hogs, goats or horses from knocking the seedling over, but most wild species shy away from them, with the possible exception of elk and bear.

Newly planted and young trees are also susceptible to browse. Tree shelters are helpful in this regard, but chemical deer repellents can also be used. However, you must keep fresh repellent on the trees throughout the winter and early spring right up to leaf out. Bud caps, plastic mesh or paper tubes or cones, can be placed over terminal shoots to keep wildlife, particularly deer and rabbits, from the buds. The bud cups should be removed during the growing season. Paper cones or tubes can waterlog and cause weight problems; use plastic mesh to avoid these issues.

Photo courtesy: Jeff Stringer

Plastic mesh can be placed over terminal shoots to keep wildlife, from the buds.

Some of the more common methods of tree protection have been discussed, however many more are available. Online resources are common, but use only reputable sources such as material from the Cooperative Extension Service associated with land grant universities or the USDA, including the US Forest Service and the NRCS.

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