

Considerations When Transplanting Trees

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Homeowners periodically need to transplant trees within the yard. Often a tree that requires transplanting was originally planted with too little thought given to its mature size. Projecting that a tiny spruce seedling will one day have branches sweeping the ground 4 meters in all directions from the trunk can be very difficult. Unfortunately, we often don't recognize that a tree is destined to out-grow its space until it has become too large to successfully transplant.

Size is a critical factor in transplanting. The larger a tree, the more difficult it is to transplant. Evergreens taller than 1 to 1.5 m, and deciduous trees taller than 2 m can present a serious challenge if they are to be hand-dug. Substantially larger trees can be moved using a truck-mounted tree spade, but they must be fully accessible to a large truck, with no fences, sidewalks, buildings, above or below ground utility lines to interfere with the machinery. If you have a small tree growing near your house, driveway, or patio, visualize it at full size and decide now if it must one day be moved. The longer you ignore it, the less likely you will be able to save the tree.

If the need to move a tree is recognized well in advance, root pruning can be done to greatly increase the chances of successful transplanting. By simply digging a deep furrow one third of the way around a tree, slightly closer to trunk than you will eventually be digging when the tree is moved, long unbranched roots will be broken. This prompts re-growth of new roots near the main trunk. It takes two to three seasons to fully root prune a tree, but in the end, a compact well-branched root system will greatly increase the tree's chances of survival once it is moved. Unfortunately, the need to root prune is seldom realized far enough in advance, so most trees are simply transplanted.

Season is a second critical consideration. While it is well known that roots supply all of a plant's water, it is less well known that 95 - 99% of a plant's water is rapidly lost as evaporation from the leaves. Since almost all of a tree's water is lost through the leaves, the obvious time to move a deciduous tree is when the leaves are gone. On the Prairies, early spring is the best time to transplant. As soon as the frost is out of the ground, well before the leaves appear, the plant's demand for moisture will be low. Spring also offers high soil moisture levels, and cool humid air. Air temperature and humidity make a difference to trees in much the same way they do to laundry on a clothesline. Dry windy August afternoons remove moisture far more quickly than cool April breezes.

Although evergreens don't lose their leaves, spring is also the best time to transplant them. The worst time to move evergreens is right after the season's flush of new growth has begun. This growth is very "thin skinned," leading to rapid water loss, and almost certain dieback. Fall transplanting is often recommended in areas of mild climate like Vancouver. In such areas it is almost impossible for a tree to dry out during winter. On the Prairies, where winter brings intense cold with extremely dry winds, fall-transplanted trees stand a much greater risk of being seriously damaged by the combined moisture stresses of transplanting and winter drying.

Exposure of roots to air while transplanting can be minimized if the new hole is prepared before the tree is dug. The hole should be large enough to accommodate the full spread of the roots, while keeping the tree at the original soil depth. Topsoil and subsoil should be kept separate so that topsoil can be mixed with generous amounts of peat moss, well rotted manure or compost, and used to fill around the roots of the tree. Subsoil is useful for refilling the original hole from which the tree came.

Extreme care must be taken to maintain an intact soil ball at the base of the tree. With evergreens, it is especially important that the soil ball remain unbroken. Only rarely will an evergreen survive if the soil of the root ball has fallen completely away. Once transplanted, amended topsoil should be packed firmly around the roots by gentle tamping. Good root-soil contact is vital, as any roots trapped in air pockets die. Once the soil is firmly packed, a soil catch basin or depression should be formed to hold water near the tree. Water the tree to soak both the root ball and soil below as soon as it is transplanted. If you are transplanting several trees, water each one as soon it is moved. Transplanted trees should be kept well watered for the entire growing season, and should not be fertilized.

Newly transplanted trees should be firmly staked, because even slight rocking in the wind will inhibit new roots from growing into the soil beyond the planting hole. Heavy wire should be used to tie the tree, but should not be permitted to directly contact the tree. To prevent wires from cutting into the bark, they should be run through an old piece of garden hose. This will prevent them from cutting into the bark. Supports should be left in place for one to two seasons and checked regularly to assure they are not restricting growth. When supports are removed, they must be cut fully away. Even a tiny wire left around a tree will eventually girdle it, killing all growth above the constriction.

The final step after staking a tree is to prune out about one third of the tree's branches. This helps maintain a balance between branches and roots. Only small interior branches should be removed with this pruning so that the height and width of the tree are not reduced, and the natural shape is maintained.