

DRAFT

FALL DIGGING/TRANSPLANT HAZARD TREES

Courtesy of Bill Flemer III, Princeton Nurseries

some species of shade and flowering trees are easy to transplant in the fall, whereas others are extremely difficult or even impossible to get to survive. The difficult species are successful if they were dug the previous spring and held over the summer or if they were grown in containers during the previous summer

. Evergreen Foliage: Broadleaf evergreens in general are notoriously difficult to transplant in the fall because if they have not rooted fast into their new location they can rapidly desiccate during cold windy periods in the winter. The same problems apply to broadleaf evergreen trees, especially in the northerly portions of their hardiness zones. Examples are: *Ilex opaca*, *aquifolium*, *pendunculosa*, etc.; *Magnolia grandiflora*. 2. Thin Barked Trees with Abundant Twigs: These trees are especially prone to water loss in winter months, particularly when the ground is frozen and there are high winds.

The ideal time to dig and transplant trees of this type is just as they are breaking dormancy in the spring. At that point there is no large crown of foliage to support and the approaching flush of growth makes healing a much more rapid process than in the fall when the growth process are slowing down with the approach of dormancy

These plants require special attention for fall digging and planting. To learn more about Fall Transplant Hazards:

*Click Here to read an article by Michelle Sutton/Nina Bassuk of Cornell (<http://nysufc.org/transplanting-and-a-deeper-look-at-fallhazards/2015/10/13/>) *Click here to read an article by Bill Flemer III, formerly of Princeton Nurseries (<https://wendplants.com/fall-hazard-trees/>). *Click here to see the list from NJDEP Division of Parks & Forestry (<https://wendplants.com/wp-content/uploads/2016/06/FallHazard.pdf>)

Abies concolor – Concolor Fir *Acer rubrum* – Red Maple *Acer japonica* – Full Moon Maple *Acer saccharinum* – Silver Maple *Acer freemanii* – Freeman Maple *Betula* (all) – Birch *Carpinus* (all) – American Hornbeam, Ironwood *Cedrus deodara* – Blue Atlas Cedar *Celtis* (all) – Hackberry *Cercis canadensis* – Redbud *Cornus* (all) – Dogwood *Crataegus* (all) – Hawthorn *Cupressocyparis leylandii* – Leyland Cypress *Fagus* (all) – Beech *Ilex x Fosterii* – Foster Holly *Ilex Nellie Stevens* – Nellies Stevens Holly *Ilex opaca* Greenleaf – American Holly *Juniperus virginiana* – Eastern Red Cedar *Liquidambar styraciflua* – Sweetgum *Liriodendron tulipifera* – Tulip Tree *Malus* – Crabapple (Move as late as possible) *Nyssa sylvatica* – Tupelo, Black Gum, Sour Gum *Ostrya virginiana* – Ironwood, Hophornbeam *Pinus nigra* – Austrian Pine *Platanus* (all) – Planetree *Pyrus* (all) – Pear *Quercus* (all) – Oak *Taxodium* – Baldcypress *Taxus b. Repandens* – English Yew *Tilia tomentosa* – Silver Linden *Zelkova* (all)

Some trees are simply more difficult to transplant than others. Furthermore, when trees are harvested and/or stored improperly, the likelihood of tree mortality increases.

reluctance among the nursery and landscape industry to dig certain species of trees in the fall, but this “fall hazard list” varies among nurserymen.

B&B tree harvesting is in itself a miraculous feat. Research suggests that as little as two to eight percent of roots actually accompany a tree once it has been harvested in the root ball.

Trees with a more fibrous root architecture regenerate more rapidly than trees with a more prominent tap root. Additionally, research has suggested that most root growth slows significantly once soil temperatures reach 50 degrees F (10° C) and winter dormancy approaches.

absolutely critical to ensure that trees are harvested in a dormant state.

Some trees that have been labeled fall hazards have coarse root systems that regenerate more slowly.

Also, if a tree with coarse roots is harvested in the fall and a harsh winter comes along, freezing the soil early and consistently, the tree becomes more easily desiccated due to an inability to replenish water.

Deciduous trees desiccate during dormancy due to cold, wind, or sun, especially when the ground is frozen. This problem is compounded in trees that have thinner bark because there is more cambial activity on sunny days for thin-barked trees. Desiccation is also more likely on trees with abundant twigs because there is an increased surface area exposed to potential inclement conditions.

Ensure that vulnerable tree types get harvested in the right size root ball or one size larger in an effort to retain as large a root mass as possible. A larger root mass translates to a larger amount of available moisture contained within a tree. Additionally, trees with thin bark and abundant twigs should be watered during the winter season when there are extreme cold, windy, or sunny conditions.

After harvesting, trees need a constant source of water, especially when they are stored above ground. The outer layer of burlap around the root ball will wick water out of the encased soil during dry, windy, or sunny days. Make sure that trees are well watered until they are planted in the ground. Letting the root ball dry significantly even one time can cause tree mortality or make it virtually impossible to restore moisture to the core of the root mass.

Species Presumed to be Fall Hazards	Common Fall Hazard Traits			
	Minimize Moisture Loss	Thin Barked Trees	Harvest Time	Trees with Coarse Roots
<i>Acer rubrum</i>	X	X		
<i>Betula</i> sp.	X	X	X	
<i>Carpinus</i> sp.	X	X	X	X
<i>Celtis</i> sp.	X	X		
<i>Cercis</i> sp.	X	X		X
<i>Cercidiphyllum</i>	X	X		
<i>Cornus</i> sp.	X	X		
<i>Crataegus</i> sp.	X		X	
<i>Fagus</i> sp.	X	X		
<i>Halesia</i> sp.	X		X	
<i>Liquidambar styraciflua</i>	X		X	
<i>Liriodendron tulipifera</i>	X	X		
<i>Malus</i> sp.	X	X	X	
<i>Nyssa sylvatica</i>	X			X
<i>Ostrya virginiana</i>	X	X	X	X
<i>Platanus</i> sp.	X	X		
<i>Pyrus</i> sp.	X		X	
<i>Quercus</i> sp.	X	X	X	X
<i>Taxodium distichum</i>	X		X	
<i>Tilia tomentosa</i>	X	X		
<i>Zelkova serrata</i>	X	X		

These are plants that we have found to have poor survival rates when dug for transplanting in the Fall. When possible, secure Spring dug material when planting these varieties.

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| Acer rubrum and cultivars | Red Maple |
| Betula species | Birch |
| Carpinus species | Hornbeam |
| Celtis species | Hackberry |
| Cercidiphyllum species | Katsura |
| Cercis species | Redbud |

Cornus florida and cultivars	Flowering Dogwood
Cornus kousa and cultivars	Kousa Dogwood
Crataegus species	Hawthorn
Fagus species	Beech
Gleditsia species	Honeylocust
Halesia species	Silverbell
Koelreuteria paniculata	Goldenraintree
Liquidambar species	Sweetgum
Liriodendron species	Tuliptree
Magnolia species	Magnolia
Nyssa sylvatica	Blackgum
Ostrya species	American Hophornbeam, Ironwood
Platanus species	Sycamore
Prunus species	Cherry, Plum
Pyrus species	Pear
Quercus species	Oak
Salix species	Willow
Sorbus species	Mountainash
Tilia tomentosa and cultivars	Silver Linden
Ulmus species	Elm
Zelkova species	Japanese Zelkova