

An aerial photograph of a dense, lush green forest. A winding road with a yellow center line and blue outer lines curves through the trees. The text "BTA Planting Material Guidelines" is overlaid in large, bold, white letters.

BTA Planting Material Guidelines

Item checklist for planting project:

- **Trees**– different stock types will suit different project needs
- **Water**– consistent watering regime will be key in successful tree establishment
- **Stakes and Arbor Ties**– these can help trees establish in high wind locations
- **Soil amendments**– healthy and suitable soils are key for tree longevity
- **Fencing**– this will protect young trees from browsing and mowers/weed whackers
- **Tools**– clean and sharp tools can protect trees from damage and disease

Trees

Trees can come in nursery pots, balled and burlap (B&B), and bare root

Nursery potted trees– these are typically smaller and less expensive than other options

Smaller trees can have an easier time establishing since they experience the least amount of root disturbance

These should typically be fenced off while they are young to avoid rabbit or deer browsing

Extra caution should be taken to remove girdling roots that have grown due to circular nature of the pots

NOTE: Avoid buying potted trees with buried root collars

Balled and burlap (B&B)– these are typically larger trees with native soil surrounding cut roots surrounded with burlap and metal cages

B&B trees are a good option for installing larger trees

They can be extremely heavy due to the presence of soil around the roots and typically need heavy machinery to transport

Caution is still needed to spot any girdling roots as well as an exposed root flair

Bare root trees– these are typically the same size or slightly smaller than B&B trees

Bare root trees come with no soil around the root system, making it easy to avoid girdling roots or buried root collars

Bare root trees have the advantage of being lighter in weight, making this a more accessible option

Extra caution should be taken while planting bare root trees to not leave any open pockets under the tree that may cause it to settle below grade

Water the trees incrementally as soil is being filled in to remove air pockets and ensure thorough watering

Bare root



Balled & burlapped (B&B)



Container grown



Water

Newly established trees require frequent and consistent watering during first 1-3 years of establishment

Watering should be done twice a week at a rate of 5 gallons per inch of diameter at breast height (DBH)

Water with the weather- heavy rainstorms will reduce watering needs while hot, sunny drought weather will increase watering needs

This should be done slowly over a longer period rather than quickly which may cause runoff and erosion

There are multiple ways to water newly planted trees with varying costs and labor intensity

Hand watering- this is the simplest method, but requires hose access and an understanding of the rate of gallons per minute

Be careful to not blast water at root zone, a gentler stream of water is better

Soaker hoses can also be used for more passive option

Gator bags- these are water holding bags that zipper around the base of the tree and have small percolating holes that slowly drip water to the root zone

Gator bags will need refilling and monitoring as they can increase moisture levels around the trunk of the tree- this may cause rot or fungal issues if left unchecked

Note: Gator bags can also be placed around stakes to avoid moisture issues

5-gallon buckets- similar to the gator bag method, multiple 5-gallon buckets with pinpoint holes drilled into the bottom can be placed around the root zone

These do not pose the same moisture risks to tree trunks as gator bags

Irrigation- this usually involves buried water lines that lead to drip tubes or sprinkler heads

Sprinkler heads are not a good option for watering in new trees as they tend to spray trunks and leaves which can lead to rot or other fungal issues

Drip irrigation tubes must be set to an acceptable rate for new trees, otherwise supplemental watering must be done directly around the root zone

Stakes and Arbor Ties

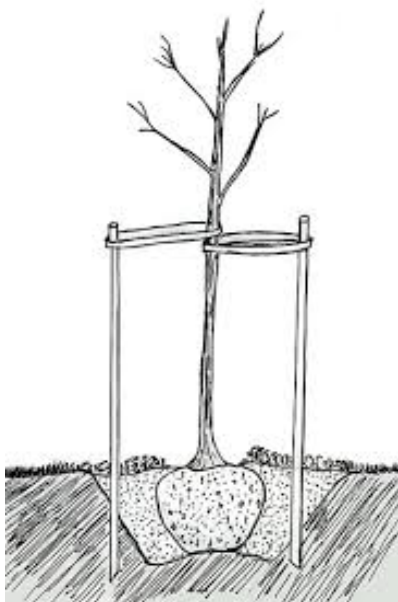
Stakes and arbor ties should be added to new trees that are planted in heavy wind locations

In high wind areas, place two wooden stakes that are two inches in diameter and eight feet tall on either side of the tree and securely malleted in the ground so the stakes do not wobble

Tie two pieces arbor tie (do not substitute with string or other non-tree grade materials) to stakes connecting to **loosely** trunk

Staking should be removed one year after installation and should be monitored and adjusted frequently to avoid strangling tree's expanding cambium layer

Trees that are planted in areas where heavy winds are not a threat should not be staked as some wind movement can strengthen root zone development



Soil Amendments

Soil amendments are not always necessary, but can aid root growth in areas with poor soil quality

Soil testing is necessary to determine major nutrient deficiencies in soil

Fertilizer should only be added in situations where the site has defined nutrient deficiencies

Mycorrhizal inoculant can be added to root zone when planting to increase tree's chances of establishing and creating root system network with neighboring trees

Biochar is a useful tool to increase soil aeration and nutrient holding capacity

Biochar should be mixed with compost as it simply serves as a structure for holding beneficial microorganisms capable of converting nutrients and doesn't contain any nutrients on its own

If planting site is severely compacted, vertical mulching with biochar is a great option for reducing compaction stress on developing root system

In certain cases, soil can be added to sites to increase potential root zone capacity- This can be done in the form of raised beds, planters, an any other situation where soil can be added and properly contained to prevent erosion

Fencing

Fencing is typically recommended for all new trees

Fencing can be made with chicken wire or other similar materials

Height of fence should be higher in areas where deer pressure is a major issue

Fencing should fully wrap around the tree on all sides and should be secured to the ground to keep rabbits from entering underneath

Tree guards that wrap around the trunk can be used to protect trunks and should be adjusted annually as trees age towards maturity



Tools

Using clean and sharp tools can greatly reduce chance of damaging trees and spreading disease

Shovels should be sharp and clear of soil from previous use as soil can contain harmful microbes that can damage roots

Rakes can help smooth out mulch rings and remove excess plant material post-planting

Pruners should be sharp and free of soil

All proper pruning techniques should be used if any cuts need to be made at time of planting

Anyone pruning should be trained in best practices

All pruning should be done in accordance with best time of year- this will change depending on species and overall goals for the tree

When tree is first planted, only dire (dead, diseased, dying, or broken) cuts should be made otherwise pruning should wait until the tree has been in the ground for at least one year

*Remember to reject low quality stock

For more information, reach out to bostontreealliance@massaudubon.org