



Bare-root Tree Planting Preparations



- Contacted nurseries in October about bare root stock availability for 2007 planting season
- Contacted communities in November 2006 to get tree list
- Ordered planting stock in December 2006
- Coordinated tree pick up with nurseries January 2007
- Trees picked up from nursery February 2007

This is the chronology of events taken before bare-root trees were planted in February. Because of relatively warm weather throughout December and early-January, some tree species had not “hardened off” adequately to be lifted. Frequent calls to the nursery were necessary to determine the best time to pick up trees.



Trees were picked up from Angel Creek Nursery (Bishop, GA) and Moon's Tree Farm (Snellville, GA) on February 6, 2007.



Trees were heeled in at the nursery and ready for us to take. Originally, we wanted to be present when trees were being lifted so we could dip roots in hydrogel right out of the ground, but that was not feasible due to nursery production conflicts. It was not cost efficient to send a crew out for a few trees here and there. Some trees were heeled in for as long as a month before we were able to get to them.



Trees were carefully packed to protect the roots from drying out during the 40 mile drive to Covington. We used wet straw or mulch to pack around the roots then covered them tightly with plastic. Care should also be taken not to break stems and terminal buds while handling the trees.



As additional precaution, we covered trailer with tarp to reduce wind over the trees.



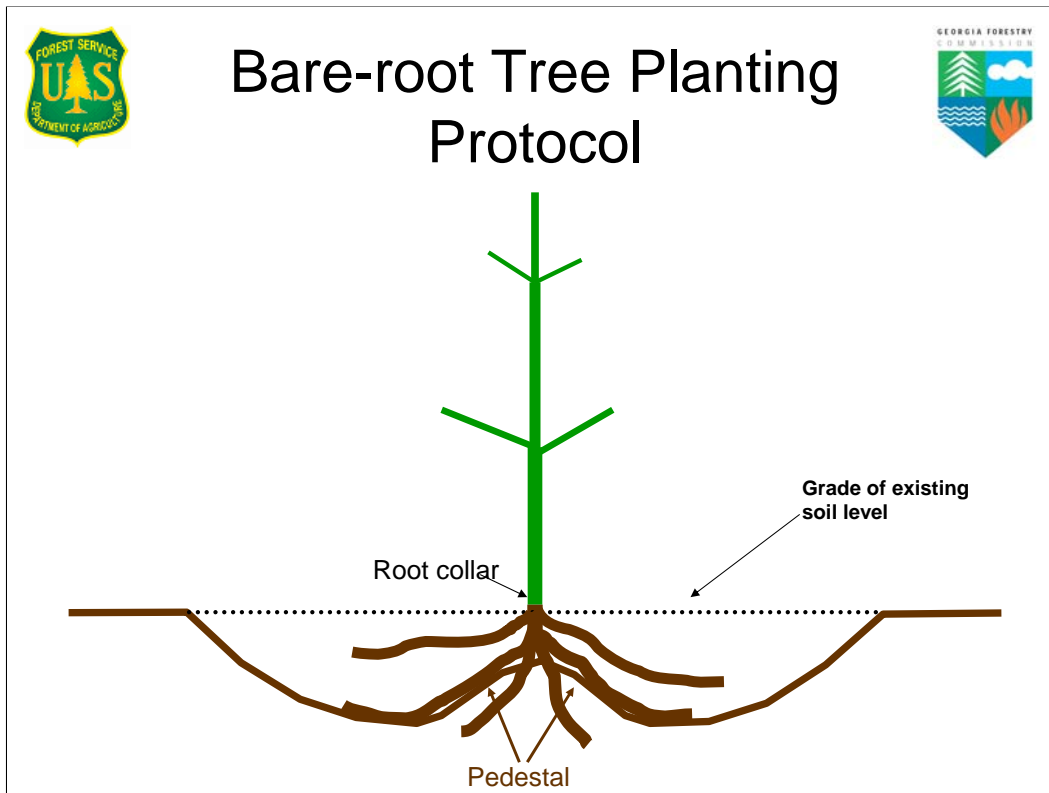
Trees were taken to Covington and temporarily heeled in until we could dip the roots and bag the trees individually.



Before trees were out-planted, the roots were dipped in a hydrogel solution to help reduce root desiccation before, during, and after planting. If hydrogel is used, be careful not to mix too thick as shown here. This could prevent oxygen exchange with the roots.



The dipped roots were then placed in a heavy-duty plastic bag and tightly sealed until they were ready to be put in the ground.



Ultimately, this is what we were aiming for in our planting protocol. We wanted to hand-dig a shallow, bowl-shaped hole retaining a central pedestal on which the root collar would rest allowing the root collar to set at or above soil grade while roots could be placed deep in the profile for added anchoring and have access to soil moisture. The pedestal should be undisturbed soil as is the bottom of the planting hole.



First, vegetation was scraped from planting site and removed. Soil was fractured extensively in planting hole before being removed.



Some sites had to be worked harder than others because of soil compaction and construction debris.



Here is an example of the pedestal and how roots are positioned in the planting hole. This pedestal could stand to be a little smaller and more conical.



The sides of the planting hole are scored to prevent glazing then back-filled with the extensively fractured or friable soil. Exposure of the roots to drying conditions should be minimized to prevent root desiccation.



After back-filling holes with soil, water saturation was used to help remove macropores in rooting zone. Additional soil was used in holes when evidence of settling was observed.



2-4" of freshly ground wood chips and plant debris were used around each tree. The edges furthest from the stem were built up significantly to help discourage lawnmower damage to the tree.



All trees were lightly staked and low-profile water bags were placed around each.



This is the final product.



Bare-root Tree Planting Pros and Cons

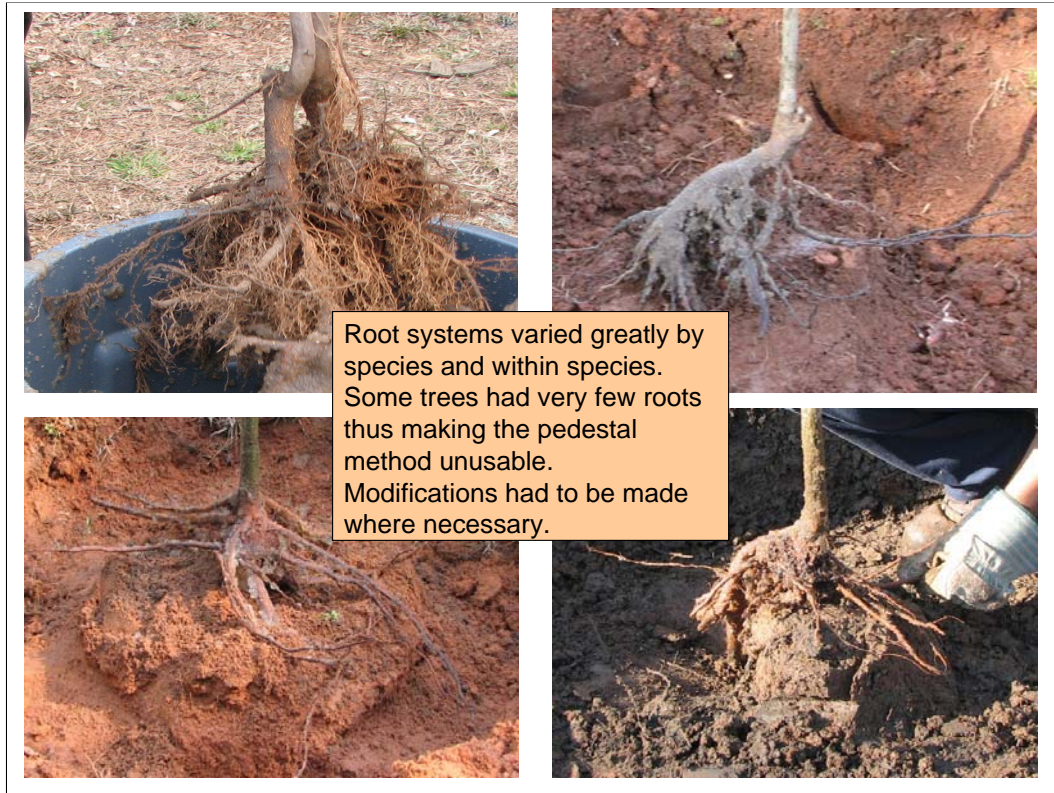


Pros

- Inexpensive
 - Can get more trees planted for less money
 - Reduced labor costs
 - Reduced equipment costs
 - Volunteers can be used
- Light-weight trees
- Large amount of roots remain with tree
- Can minimize root problems before they start
- Can be sure tree is not planted too deeply

Cons

- Small planting window in the South
 - January-February usually
- Requires careful handling
 - Ensure roots remain moist
- Requires coordination with nursery
- Planting stock may not be uniform
 - Height variability
 - Roots may be removed
 - At lifting
 - At planting
- Ordered trees may suddenly become unavailable



Some problems we experienced were root uniformity issues. Some trees had very few roots



Taller trees tended to be less straight at planting and had a hard time standing upright in the wind. Shorter trees appeared to be more sturdy in the wind and had straighter stems. In grading, perhaps using a height criteria rather than a caliper criteria would be better.