



Southeast Alaska - Transplanting the Air Spade Way

Monique Anderson, Alaska Community Forest Council member



Step 1

The Alaska Division of Forestry has been working with the community of Sitka to take stock of as many as 1,000 trees on city land. Besides assessing tree value and benefits, the focus has been on tree maintenance and urban forest management. Local Alaska Community Forest Council member Lisa Moore and Monique Anderson, landscape architect at Anderson Land Planning, arranged for a demonstration of air spade transplanting on a city project when the consulting arborist Jim Flott was last in town.

This transplanting method is a fairly new technique that uses compressed air to remove soil material around tree roots. The specific tool is called an 'air spade' and has long been used for fiber optic utility excavations.

A quick event sequence is demonstrated in the photos. The excavated tree is a 3" Dolgo crabapple. Total time estimate for the entire process is 3 hours for a crew of 2 people, including re-planting if the new site is already prepared.

Step 1 - Remove sod (if any) up to the tree dripline or larger area. You may be concerned about the disturbance of masses of fine absorbing roots but these roots are ephemeral and continuously regenerating.

Step 2 - Trench at the limit of the transplant area. This should at least be at the dripline of the tree. Can be done by hand or by equipment.



Step 2



Step 3 - Set-up safety barriers and possible plywood barriers to help retain loosened soil.

Step 4 - Air spade. Working from the tree trunk follow each structural and/or lateral root outward loosening the soil away from the roots. Roots 1" diameter and greater are the focus.

Step 5 - Tie roots into 'pigtailed'. Trim any ragged root ends with a pruning saw. Continue using the air spade to get the full depth of root material.

Step 6 - Move final rootball (easiest with a small piece of equipment).

Step 7 - Replant into the newly prepared location. Or as alternative, place in a mulched holding area for up to a year.

Among the benefits of this method are that a large majority of roots are retained and these roots can be examined/corrected (girdling roots). The rootflare is also exposed so the tree can be re-planted at the proper depth, a common urban tree problem. The City of Sitka is doing an informal experiment to assess the success of this method by comparing 2 crabapples from the same planting generation: 1 tree remains undisturbed from the original planting and 1 tree transplanted with the air spade.

The air spade method of transplanting is an alternative to consider for other projects around the state, especially if utility conflicts are present. A tree at the University of Alaska Anchorage Campus was also transplanted by an air spade last September as part of the "Urban Forest of Tomorrow" conference.



Step 4



Step 5

Step 6

