BALLED & BURLAPPED TREE PLANTING GUIDE

Planting balled and burlapped trees requires meticulous care from reception to installation. These steps ensure successful tree establishment and long-term growth.

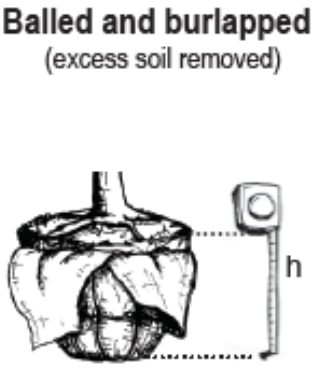

Figure 1: *Measure the spread and height of the root ball. This is exactly how deep you should dig the hole. Measure the approximate width of the root ball or root system. Multiply this by 2, or if your soil is hard (clay or compacted), by at least 3. This is how wide you should dig the hole. Source: US Forest Service Tree Owner's Manual.* www.treeownersmanual.info.

- <u>Step 1: Receiving Tree for Planting (at tree storage area):</u>
  - Upon delivery, keep trees in a cool, shaded place.
  - If storing overnight, soak the top and sides of the burlap with water.
  - To avoid moisture loss, do not leave trees in direct sunlight for more than 4 hours.
- <u>Step 2: Prepare Hole (at tree planting location):</u>
  - Measure the width and height of the root ball (Figure 1).
  - Remove grass within a circular area a minimum of 1.5 times as wide as the root ball.
  - Dig the hole to the depth of the height of the root ball (Figure 2).
  - In clay soils, use a shovel to loosen the glazed walls of the planting hole.

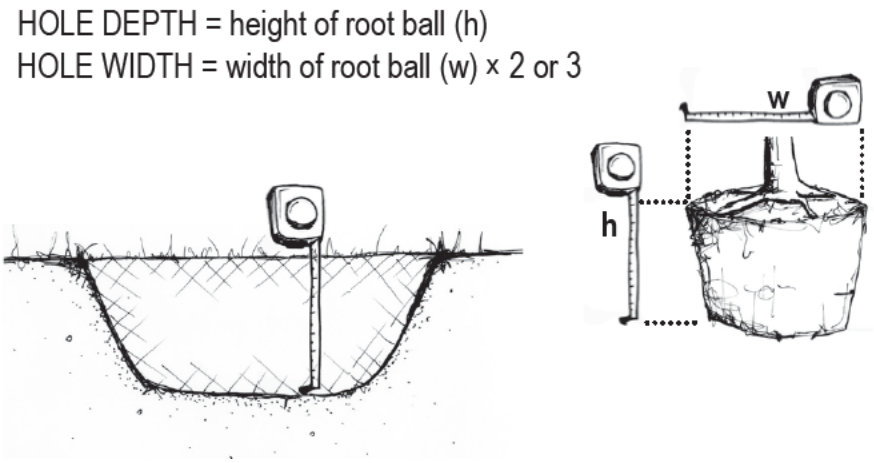

Figure 2: *Dig the hole. The dimensions of the hole are very important in determining the survival of your tree. Dig the hole ONLY as deep as the root system (NO deeper!). Source: US Forest Service Tree Owner's Manual.* www.treeownersmanual.info.

- <u>Step 3: Prepare Tree for Planting:</u>
  - Lay the tree on its side to:
    - Inspect the crown, prune any dead or damaged branches, and remove any tags, strings, or tape.

        - Remove the bottom side of the wire basket by cutting the vertical wires just below the lowest horizontal wires.
    - Stand the tree upright to:
        - Remove ties and nails/staples and pull back the burlap from the top of the root ball.
        - Locate the tree's trunk flare by removing soil from the top of the root ball until the highest non-fibrous root is uncovered (Figure 3).

Figure 3: *Remove the top of the root ball packaging. Cut any twine from around the trunk taking care not to nick the bark. Then bend the wire basket back off the top of the ball. Remove soil from the top of the root ball until the main root system is found. You may have to cut some of the wire. Leave the rest of the wire basket in place until the tree is put in the ground. Source: US Forest Service Tree Owner's Manual. www.treeownersmanual.info.*

- Step 4: Placing the Tree:
    - Measure the height of the root ball from the base to the located root flare.
    - Place a shovel handle across the top of the hole and measure the depth of the hole.
    - Add or remove soil to the hole to align the measurement so that the trunk flare is at or slightly above soil grade.
    - Place the tree in the center of the hole, maneuvering the tree by the root ball, avoiding pulling or pushing the stem of the tree (Figure 4).
    - Confirm that the trunk flare is at or slightly above soil grade and if not, add or remove soil from the base of the hole, maneuvering the tree by the root ball.
    - Look from all sides of the tree at the straightness of the tree in the hole and adjust the lean so the top of the tree is standing straight and up, not to one side.
    - Secure the tree in place by adding just enough backfill soil to the hole (about ⅓ full).
    - Cut away the remaining wire basket and as much of the burlap as possible without disturbing the tree's alignment.
    - Cut away circling roots around the trunk flare, fibrous roots above it, or roots that cannot be straightened.

Figure 4: *Without loosening the root ball, cut, peel back, and remove as much of the wire basket and burlap as possible (at least the top third). A root ball should remain a root ball. If it starts to fall apart as you take off the wire and burlap, backfill the hole with enough soil to stabilize it. Then carefully remove the wire and burlap and backfill as you go to keep the root ball intact. Source: US Forest Service Tree Owner's Manual. www.treeownersmanual.info.*

- Step 5: Fill Hole and Make Berm:
    - Do not add soil amendments such as peat or bark. Do not use fertilizer, potting soil, or chemicals on your new trees.
    - Biochar can be used to amend backfill soil during tree planting, following the label instructions.
    - About 6 inches at a time, add the remaining backfill soil around the root ball in layers, lightly but firmly tamp each layer. If the soil is dry, apply water after each layer is tamped (Figure 5).
    - Build a berm 3 inches high and wide with the remaining soil, circling the inside edge of where grass was removed.
- Step 6: Optional Tree Protection:
    - To discourage browsing of stem cambium by voles or mice or browsing of twigs and buds by deer, apply a repellent following labeled directions.

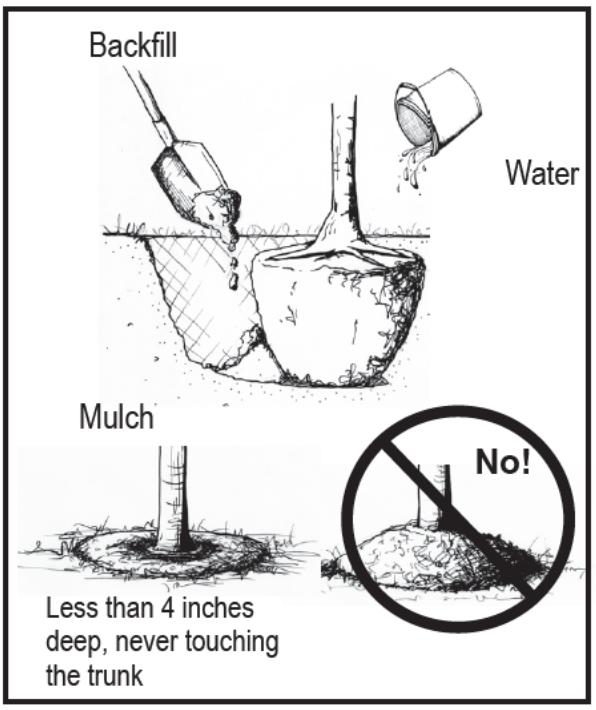

Figure 5: *Make sure the trunk is straight. Put the original soil back in the hole, breaking up large clods, and working it in with your hands or a shovel. Source: US Forest Service Tree Owner's Manual. www.treeownersmanual.info.*

    - Depending on the locality of the planting site, such as proximity to woodlands or a body of water, deer and beavers can pose a real threat to the survivability of newly installed trees.
        - Install loose-fitting 48-inch tall and minimum 4-inch diameter tree guards, made of wire or plastic mesh, around the tree trunk.
    - Consider staking if the site is windy, vandalism is a concern, or the root ball shifts in the hole after planting:
        - Stake the tree with two wooden stakes placed on opposite sides of the tree.
        - Attach nylon or fabric ties to the stakes and around the tree above the first branch.
        - Tie loops around the tree trunk should be made loose, approximately 3x the trunk diameter.
        - Ties from the tree to the stakes should be left with a slight sag to allow for slight tree and trunk movement.
- Step 7: Water at Installation:
    - Using low water pressure from a hose or bucket, apply water around the hole until the surrounding soil is thoroughly moist immediately following installation.
- Step 8: Mulch the Planting Hole:
    - Mulch materials may be natural wood chips or shredded bark, needles, or leaves free of any extraneous material such as soil, stones, and debris.
    - Apply mulch 2-4 inches deep over the filled hole and berm, leaving 3 inches around the trunk clear from mulch (Figure 6).

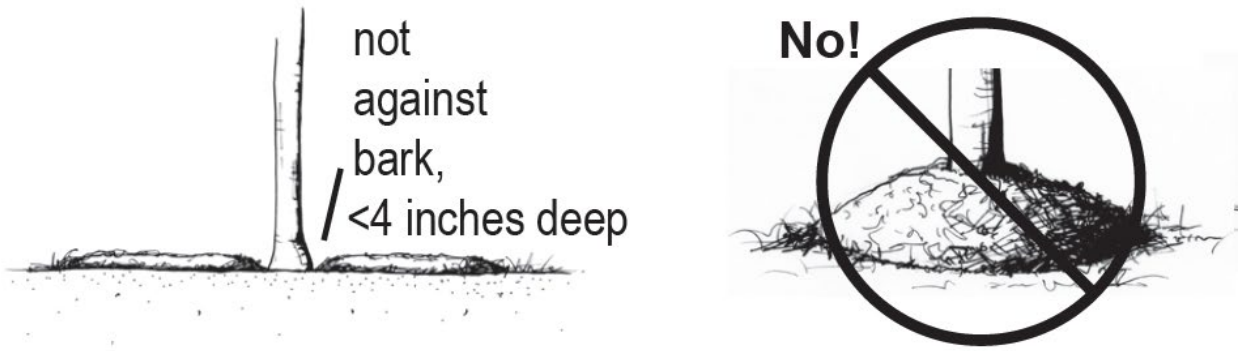

Figure 6: *There should never be more than 4 inches of mulch over the roots. Too much mulch or soil can prevent oxygen from reaching the roots. Source: US Forest Service Tree Owner's Manual. www.treeownersmanual.info.*