7-5-2004

Planting Landscape Trees

Larry A. Sagers
Utah State University

Planting Landscape Trees

Larry A. Sagers
Extension Horticulture Specialist
Utah State University
Thanksgiving Point Office

Trees and Shrubs Provide

- Beauty
- Wind protection
- Shade
- Wildlife habitat
- Visual Screening

Topics of the Day

- Buying Trees
- Digging Holes
- Planting Trees
- Post Planting Care

Purchasing Trees and Shrubs

- Buy quality stock from reputable nurseries, garden centers, landscape contractors, or mail-order companies

Find Good Nurseries

Selection Criteria

- Select trees that are
- Well-cared for
- Show healthy trunks
- Have a healthy root system
- Not root-bound
- Have adequate guarantees

Buying Trees

- Avoid purchasing trees with broken branches or poor architecture

Buying Trees

- Avoid purchasing trees with:
  - Multiple leaders
  - Distorted branches
  - Water sprouts

Buying Trees

- Never buy trees with insect or disease problems

Buying Trees

- Never buy poorly maintained, under or over watered trees

Buying Trees

- Never buy trees that are poorly acclimated to our conditions

Bare Root Plants

- Limited to spring planting in Utah
- Less expensive
- Limited to deciduous diameter < 3” at base
- Limited to evergreens < 2’ tall
- Have no soil around the roots

Types of Stock

- Bare Root

Bare root

- PRO:
  - Lightweight
  - Easy to ship
  - Easy to find root flare
  - Assess root system health

Bare root

- CON:
  - Tree must be dormant
  - Reduced planting time
  - Limited selection
  - Potential for root problems

Types of Stock

- Container Stock

Container Plants

- More expensive than bare-root plants but less than balled and burlapped
- Heavier than bare-root plants but less than balled and burlapped
- Can have circling roots that need cutting before planting

Containerized

- PRO:
  - Wide selection

- Cheaper
- Large planting window

Containerized
- CON:
- Circling roots
- Difficult to find root flare

All Roots are Included
Careful Attention to Pot Shifting
Check Roots Carefully
Beware the J Root
These Start at the First Transplant

Balled and Burlapped Plants
- Root ball tightly wrapped with burlap, plastic, twine or wire baskets
- More expensive
- Heavier than bare-root plants
- Higher rate of survival
- Preferred for large evergreens

Types of Stock
Ball and Burlap
Ball & Burlapped
- PRO:
- Wide selection
- Large trees
- Large window to plant

Ball & Burlapped
- CON:
- HEAVY
- Expensive
- Difficult to find root flare

Types of Stock
Direct Transplants

Planting
- Trunk & Shoots
- Above ground, has bark for protection
- Need oxygen for respiration
- Need light for photosynthesis

Planting

- Roots
  - Below ground, negative geotropism (grow down)
  - Absorb water & nutrients
  - Need oxygen for respiration

Deep Planting
- Option #1: Die from suffocation

Deep Planting

- Option #2: Adapt.
  - Roots try to grow up to top
  - This is not natural

Deep Planting
- How can you tell if existing trees are planted too deep?
  - Trunks enter the ground ‘flush’
  - Thinning canopies
  - Early fall coloration
  - ‘Decline’

Deep Planting
- Trunks enter the ground ‘flush’

Tree have a Natural Flare
Deep Planting
- Thinning canopies

Deep Planting
- Early fall coloration

Deep Planting
- Decline

Deep Planting
- No good remedy other than **prevention**

Deep Planting
Roots try unsuccessfully to grow up

Planting Trees Correctly

- The *root flare* is even or higher than the natural soil grade of planting site.

Planting Trees Correctly

- Roots grow away from trunk in top 6-8” of soil

Root Flare

- ‘Set’ at germination
- Oldest part of tree

Root Flare

- Support

Root Flare‘

- Storage

Root Flare

- Area of transition from root tissue to trunk tissue

Types of Planting Materials

- Bare root
- Ball & Burlapped (B&B)
- Containerized / Container grown

- Must find the root flare in each

Bare root

B&B

Containerized

Make a cut down each side of the root ball deep enough to sever encircling roots

Cut Containerized Root Balls

How to dig a hole

- Dig hole 3-5x bigger than root system
- Dig hole deep enough to put root flare at the natural soil grade or 1-2” higher
- Slope & roughen sides of planting hole
- Leave bottom of hole undisturbed

The Wrong Way to Plant

Do Not Make Natural Flower Pots That Do Not Drain

Planting-Placement

- Place plant in the center of the hole
- Check vertical trunk alignment

- Root collar should be at or slightly above ground level

Hit The Hole!!!

Planting-Planting

- Remove packing materials and burlap from top of root ball
- Remove damaged or circling roots
- Wire baskets are to protect the root balls; remove the top portion only if it will not damage the ball
- Carefully remove as much of the paper maché as possible

Planting-Backfilling

- Use the same soil taken out to fill in unless soil is extremely poor
- Use up to 25% coarse organic amendment mixed with native soil

Planting-Backfilling

- Break up large clods
- Pack lightly with feet or hands but do not over-pack
- Water and add soil as necessary

Call Blue Stakes!

How to <u>fill</u> a hole

- Backfill ONLY with soil native to the site
  - Amendments can cause moisture problems
  - Promote roots to expand into surroundings

How to <u>fill</u> a hole

- Do not tamp / compact soil
  - Get dirty! Crumble soil and fill crevices carefully by hands
  - Use water to eliminate large air pockets

Post Planting Care

- Water
  - Trees need 1-2” of water per week for first growing season after they leaf out
  - Drip, hose, sprinkler…
  - Do not overwater!

Post Planting Care

- Stake only when Needed
  - Especially important for bare root
  - Secure tree loosely
  - Drive stakes outside root system
  - Use wide straps
  - <u>Remove after one growing season</u>

The Last Tree Roundup

When Did the Last Tree Run Away?

Post Planting Care

- Mulching
  - Add 2-4” of bark chips
  - Avoid volcanoes!

Post Planting Care

- Mulching
  - Holds moisture in soil
  - Improves soil structure

Post Planting Care

- Mulching
  - Insulates roots from temperature extremes

Post Planting Care

- Keep mowers away!

Post Planting Care
Remove grass and skip the flowers

Post Planting Care

- Tree Wrap
  - Used to protect trees during transportation
  - Sometimes useful to protect against animal damage
  - REMOVE!

Post Planting Care

- Pruning
  - Only remove damaged branches at time of planting
  - Designate ‘temporary branches’ for eventual removal
- Fertilization
  - Not necessary

Tree Planting Summary

- Find root flare of tree
- Dig hole 3-5x wider than roots, no deeper than flare
- Align tree in hole as desired
- Backfill with native soil, no tamping
- Stake if necessary for 1 season
- Water as needed

- Prune only broken, diseased branches

Follow-up Maintenance-Pruning

- Prune only to remove dead wood and damage for first 3-4 years
- Do not prune more than necessary for at least 1 year

Follow-up Maintenance-Water

- Water thoroughly at planting
- Water enough to soak root ball at each watering.
- Avoid over-watering, particularly in heavy clay soils

Follow-up Maintenance-Fertilizer

- Do not fertilize at planting
- Fertilize after trees are established and have recovered from transplanting
- Tree transplant-recovery is usually 2 to 3 years

Follow-up Maintenance-Mulch

- Use wood chips 3-6” thick at base of tree
- Wide mulch at least 2’ out from trunk

Follow-up Maintenance-Staking

- Use only in
- High wind areas
- Vandal-Prone areas
- Place canvas strapping on wires
- Use soft material that will not rub bark while allowing tree movement