Everybody say "TREES!"
Las Cruces Utilities Lush and Lean Workshop Series

Marisa Thompson, Ph.D.
Extension Horticulture Specialist
NMSU Cooperative Extension Programs

- Land Grant Universities
- County Extension Programs in NM
- 12 Ag Science Centers
- Extension Agents and Specialists
- Extension Horticulture Program
Zotheca tranquila: Cool Name for a Cute Caterpillar

- May 05, 2018
Benefits of trees

- Social/historic
- Community
- Environmental
- Economic

“For every $1.00 invested in the planting and care of public trees, the city and citizens received an average of $4.00 in services and benefits.” - ISA
What’s Killing Your Trees?

Types of Stressors

- **Biotic**
  - Animals
  - Plants
  - Pathogens
  - HUMANS

- **Abiotic**
  - Climate
  - Wind
  - Water
  - Nutrients
  - Age
The Tree of One Hundred Horses (Sicily)
2,000 and 4,000 years old
190 feet in circumference
RECORD EVENT REPORT
NATIONAL WEATHER SERVICE EL PASO, TX
529 PM MDT THU MAY 17 2018

RECORD HIGH TEMPERATURE SET AT EL PASO...

A record high temperature of 99°F was set at El Paso today. This ties the old record of 99°F set in 2003 and 1974.

#txwx #HiTemp
U.S. Drought Monitor

May 15, 2018
(Released Thursday, May 17, 2018)
Valid 8 a.m. EDT

Drought Impact Types:

~~ Delineates dominant impacts
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- **D0 Abnormally Dry**
- **D1 Moderate Drought**
- **D2 Severe Drought**
- **D3 Extreme Drought**
- **D4 Exceptional Drought**

Author:
Eric Luebehusen
U.S. Department of Agriculture

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu/
U.S. Drought Monitor

Southwest

May 15, 2018
(Released Thursday, May 17, 2018)
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Drought Conditions (Percent Area)

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<th></th>
<th>None</th>
<th>D0-D4</th>
<th>D1-D4</th>
<th>D2-D4</th>
<th>D3-D4</th>
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<tr>
<td>Current</td>
<td>12.54</td>
<td>87.46</td>
<td>68.36</td>
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<td>30.21</td>
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<td>Last Week</td>
<td>13.02</td>
<td>86.98</td>
<td>68.42</td>
<td>48.14</td>
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<td>3 Months Ago</td>
<td>5.46</td>
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<td>68.34</td>
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<td>Start of Calendar Year</td>
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<td>73.01</td>
<td>40.50</td>
<td>9.04</td>
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<td>Start of Water Year</td>
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<td>27.82</td>
<td>5.15</td>
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<td>One Year Ago</td>
<td>77.61</td>
<td>22.39</td>
<td>7.67</td>
<td>0.28</td>
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</tbody>
</table>

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Water Year Percent of normal precipitation

Percent of Normal Precipitation (%)
10/1/2017 – 5/22/2018
Average Annual Precipitation
Western United States
Period: 1961-1990    Units: inches

Legend (inches per year):
- Less than 5
- 5 to 10
- 10 to 15
- 15 to 20
- 20 to 30
- 30 to 40
- 40 to 50
- 50 to 60
- 60 to 80
- 80 to 100
- More than 100

NATIONAL DROUGHT MITIGATION CENTER
Temperatures contributing as well
Rule of Thumb

- A 1°F increase in temperature, increases evapotranspiration by 1%
- That means:
  - If City of Albuquerque has 1,843 irrigated acres in parks & golf courses
  - Use 42”/acre/year
  - 1°F increase will increase water use by 1% (0.42”)
  - Increase evapotranspiration of 11,405 gallons/acre/year
  - Increase of 21 million gallons/year
  - And that’s only city-maintained parks and golf courses!
Water Use Will Increase

• What happens if I don’t want to or can’t increase my water budget by 1%?
  – Decreased plant quality
  – Decrease green area
  – Accept more plant disease
  – Accept more plant mortality

Quality of life
Warm to hot so far this spring across the Borderland. We've already seen two triple-digit days in #ElPaso, TX. Place your guess for how many we'll see by summer's end. #nmwx #txwx
USDA Plant Hardiness Zones

Based on Average Annual Extreme Low Temperatures

Zone 4 -30° to -20° F
Zone 5 -20° to -10° F
Zone 6 -10° to 0° F
Zone 7 0° to 10° F
Zone 8 10° to 20° F
Zone 9 20° to 30° F

http://www.plantmaps.com
The What, Why, Where and How of Planting a Tree
Site Selection

“RIGHT TREE, RIGHT PLACE”

- Soil conditions
- Exposure to sun and wind
- Function
- Space constraints
- Hardiness zone
Utility Constraints

- Look up, look down
Hardiness Zone – Cold Temperatures
Hardiness Zone – Hot Temperatures
Tree Species Selection

- Function
- Size and shape
- Aesthetics
- Maintenance
- Susceptibility to insects and disease
Native Versus Non-Native
Container-grown and containerized nursery stock
Bare root stock
Plant trees properly
Wider, not deeper
Locate the trunk flare
Measure twice, dig once
Deep Planting

TOO DEEP!!!
It’s not too late to correct if you have planted deep. You can always carefully excavate the soil and expose the root collar.
Remove remaining burlap and twine
Carefully backfill soil
Improper stabilization
Improper Staking Kills!
What’s Killing Your Trees
The Cable Guy!

J. Mexal
• Stake the tree, if necessary.
• If the tree is grown and dug properly at the nursery, staking for support will not be necessary in most home landscape situations. Studies have shown that trees establish more quickly and develop stronger trunk and root systems if they are not staked at the time of planting.
• However, protective staking may be required on sites where lawn mower damage, vandalism, or windy conditions are concerns.
• If staking is necessary for support, there are three methods to choose among: staking, guying, and ball stabilizing.
• Staking: THREE stakes used in conjunction with a wide, flexible tie material will hold the tree upright, provide flexibility, and minimize injury to the trunk.
• Remove staking & ties ASAP (within the first year of growth).
Keep mulch away from trunk
Volcano Mulching
Watering is key to transplanting success
Question

True or false: Plant roots are able to seek out water sources.
Roots

• Roots do not “grow to water”, they grow in moist soil

• Small hair roots do the absorption of water and nutrients

• Roots need 2 things:
  1) Oxygen
  2) Water

  Compacted soils lack air and resist water infiltration
Roots: Where are they?

Root systems are shallow and extensive.

- 90% in upper 3' of soil
- 75% in upper 1 foot
- Extends 2-4 times the tree’s height
Spray Heads for Trees

New tree toward
Mature tree care

• Watering
• Mulching
• Fertilizing
• Pruning
Maintenance for all trees

- Insect and disease treatments
- Avoid mechanical/mower damage
Woody Stem Anatomy

- Heartwood - nonfunctional xylem
- Sapwood - functional xylem
- Outer Bark
- Inner Bark (phloem)
- Vascular Cambium
Outer Bark & Inner Bark (Phloem)

Cambium

Xylem

Heartwood
“#1 cause of preventable tree damage and death in Albuquerque parks is String trimmers”
(aka weed whackers)

Joran Viers
ABQ Urban Forester
Mower & String Trimmer Damage.
Thank You!

Content and Inspiration from:
- International Society of America
- Linda Chalker-Scott
- James Clark
- John Mexal
- Tracy Neal
- Al Shigo
- Curtis Smith
- Richard Thompson
- Joran Viers
- Jimmy Zabriskie

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