



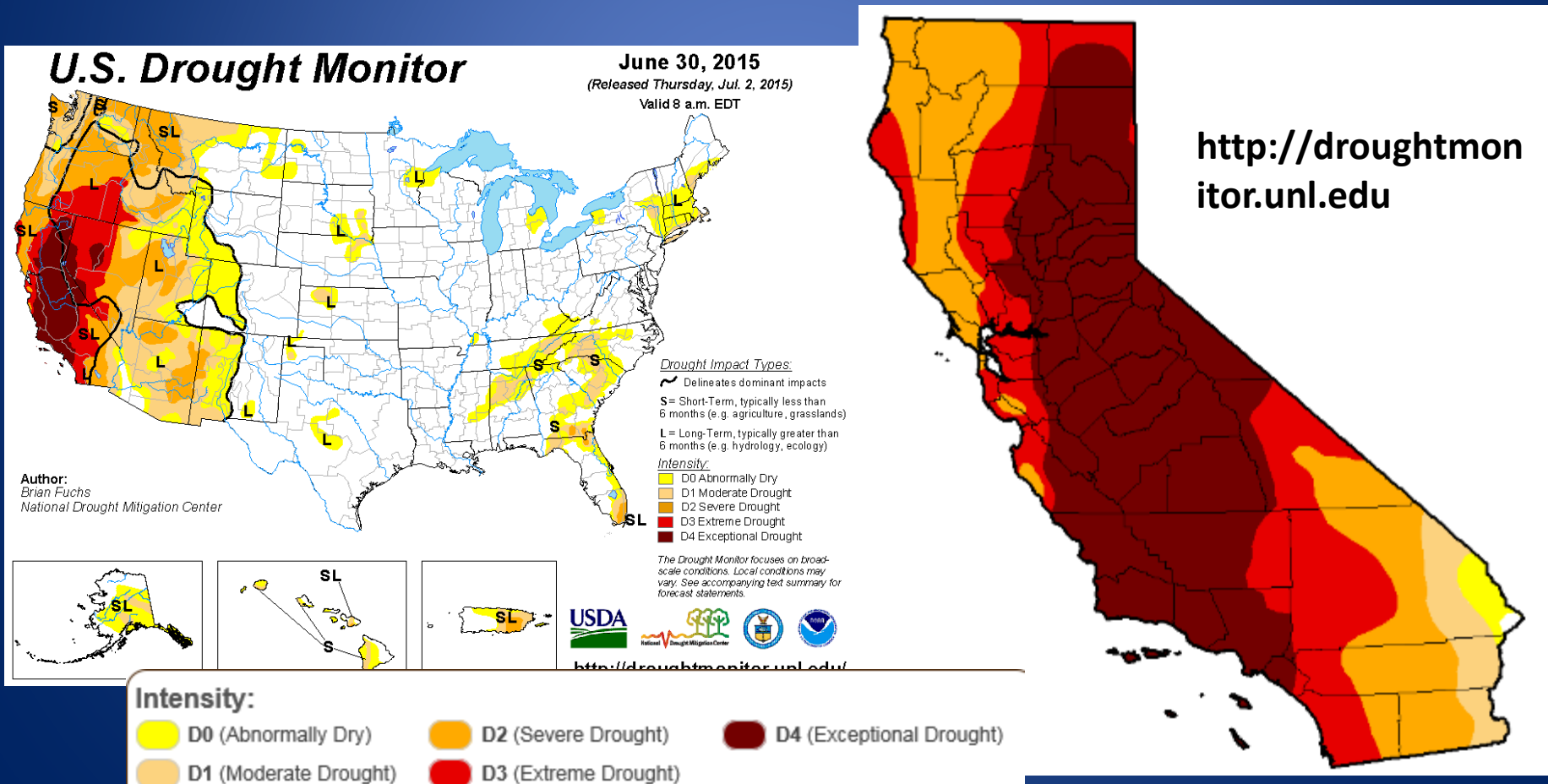
**The State of  
California's Urban  
Forest –  
Observations in the  
Midst of the  
Drought**

**Drought-Wise Green Infrastructure  
Tree Care & Management Workshop  
ABAG / CaUFC  
Oakland, CA – 09 July 2015**

**James Scheid  
CAL FIRE  
Urban & Community Forestry Program**

# Current Conditions

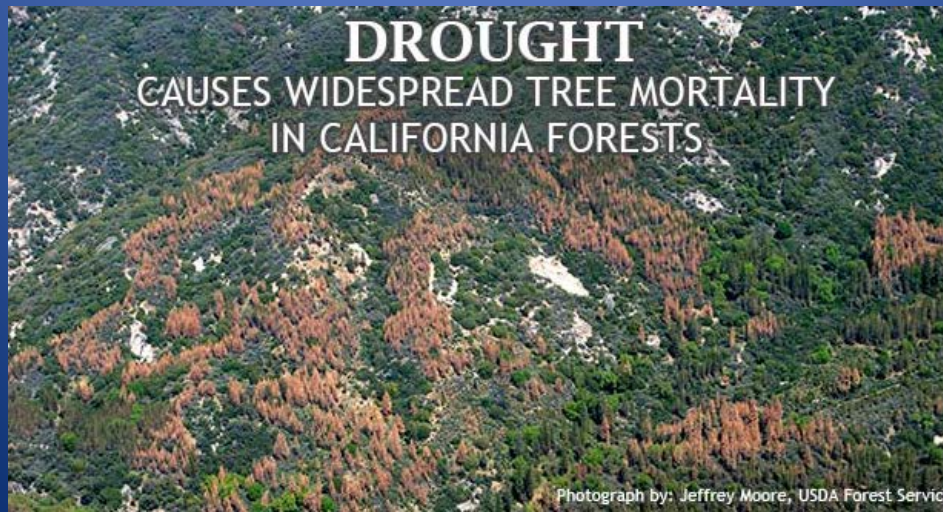
- California in 4<sup>th</sup> straight year of it's driest recorded history
- All-time low rainfall, river, reservoir and snowpack levels
- 71% of state in "Extreme Drought"; 47% in "Exceptional Drought"



# Current Conditions

- Record Low Fuel Moisture Contents / High Heat Outputs
- Est. 12 million trees dead in the So. Sierra Nevada & So. Cal.
- Bark beetles affecting predisposed ponderosa & gray pine trees
- 1,000 more wildfires this year than last
- Emergency bypass rule for dead & dying tree removal allowed by State BOF as of July 11
- USDA awarded another \$150 million for CA drought relief June 24, including \$130 million for forest thinning and other projects in the

woods and  
for struggling  
(fuels /  
watersheds /  
ranchers)



\$13.7 million  
ranchers.

<http://www.capitalpress.com/California/20150624/vilsack-announces-another-150-million-in-calif-drought-aid>

# Increased Fire Response

- State Responsibility Area (SRA) and contracted Local Responsibility Area Fire Data

Jan. 1 – Jul. 4, 2015 = 3,129 Fires

Jan. 1 – Jul. 4, 2014 = 2,313 Fires

5-Year Avg. (same interval) = 2,048 Fires



*Source:*

*[http://cdfdata.fire.ca.gov/incidents/incidents\\_stats](http://cdfdata.fire.ca.gov/incidents/incidents_stats)*

# CAL FIRE Firefighting Efforts

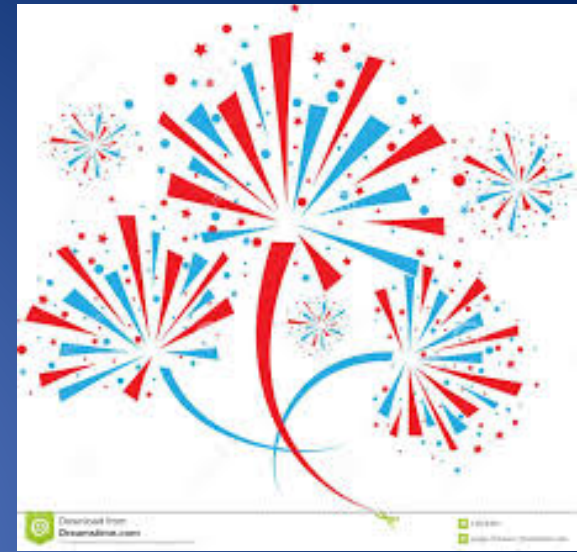
- 12 major reservoirs throughout the state only 37 percent full (as of June 10)
  - Loch Lomond (Santa Cruz), is at 83 percent capacity or 2.3 billion gallons.
- Firefighters w/extensive water maps, will draw from swimming pools or unorthodox sites.
- Fire trucks not being washed



- Hydrants not running during training or water redirected into engines
- Landscaping left dormant

# No Fireworks

- Cupertino – too much water used
- Cambria – danger to nearby pine forest
- Fairfield - closed open spaces during holiday weekend for wind/fire potential
- “Safe and Sane” fireworks only (by city) – up to \$2K fine for offenders
- 300 fires started last year due to fireworks in CA
- Residential burn ban in place for SRA/LRA



# Key Points from Governor Brown's Executive Order B-29-15 (04/01/2015)

- First-ever mandatory statewide water restrictions
- 25% reduction, from 2013 levels, in potable urban water usage by 2/28/16 imposed upon and monetarily-enforced by local water agencies
- DWR to replace 50 million Sq. ft. of lawns & ornamental turf with drought-tolerant landscapes
- CEC to implement appliance rebate program
- Only drip or microspray systems for potable water delivery (new construction excluded)
- Agricultural Water Management Plans to be created by ag. suppliers
- Monthly reporting by water agencies to Water Board
- CAL FIRE to educate public on actions to reduce wildfire
- 29% reduction met in usage since May 2013

Executive Department  
State of California

# *9%: The California Drought and Landscape Water Use (Hodel/Pittenger)*

Average percentages of developed water use in California during a non-drought year

*“...when faced with projections of 10 million more people in California by 2025, growth must be mitigated; yet, never have we seen controlling growth as one of the options to address water use in this unprecedented drought.”*



# Current Health Conditions

- Particle pollution has increased in 25 counties
- Unhealthy particle days tripled since last year
- With less rain, higher pollen rates and dust lead to a rise in asthma rates and respiratory issues
- 73% of residents live in county w/failing air quality grade



\* Source = <http://www.sacbee.com/news/local/health-and-medicine/article25719685.html> and the American Lung Association

# Local Observations

- People hesitant to plant or water
- Some trees being overwatered, rot introduced
- Declining Redwoods outside of natural range in Glendale and San Jose
- Pines (which comprise 1/4<sup>th</sup> of the urban forest) dying in Newport Beach
- No new plantings in areas without existing irrigation systems in Santa Clarita
- Water collection designs being installed in San Pedro, Pacoima, Compton



# Local Restrictions

- City of Eureka – 4% reduction required, outdoor watering on Tue, Thu, Sa, Su
- City of Sacramento – Outdoor watering only on Saturday



- City of San Francisco (SFPUC) – 10% overall reduction, 25% for outdoor
- City of San Jose – 30% reduction, outdoor watering before 10AM/after 8PM 2 days/week

## Residential Water Use \* gallons per capita daily

<http://graphics.latimes.com/drought-report-card/>

### East Bay Municipal Utilities District

California state average: **87.5**

65

LOWEST: [Westborough Water District](#) \*San Francisco

39

HIGHEST: [Myoma Dunes Mutual Water Company](#) \*Near Palm Desert

348

City of Sacramento

100

Los Angeles Department of Water and Power

72

City of San Diego

56

San Francisco Public Utilities Commission

41

# City of San Diego

<http://www.sandiego.gov/water/conservation/drought/prohibitions.shtml>

## FOLLOW NEW IRRIGATION RESTRICTIONS. NOW.

<p>WATER ONLY</p> <p><b>2</b></p> <p>DAYS A WEEK</p>	<p><b>WATER ONLY THESE DAYS</b></p> <table><tr><td><b>ODD</b> NUMBERED ADDRESSES</td><td><i>Water only</i> <b>Sunday &amp; Thursday</b></td></tr><tr><td><b>EVEN</b> NUMBERED ADDRESSES</td><td><i>Water only</i> <b>Saturday &amp; Wednesday</b></td></tr><tr><td><b>APARTMENTS, CONDOS, &amp; BUSINESSES</b></td><td><i>Water only</i> <b>Monday &amp; Friday</b></td></tr></table>	<b>ODD</b> NUMBERED ADDRESSES	<i>Water only</i> <b>Sunday &amp; Thursday</b>	<b>EVEN</b> NUMBERED ADDRESSES	<i>Water only</i> <b>Saturday &amp; Wednesday</b>	<b>APARTMENTS, CONDOS, &amp; BUSINESSES</b>	<i>Water only</i> <b>Monday &amp; Friday</b>	<p>WATER ONLY</p> <p><b>5</b></p> <p>MINUTES PER STATION</p>
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### Water at the Right Time of Day

Water only after 6 pm and before 10 am.

NOTE: This time-of-day schedule applies to ALL irrigation.

- No pavement washing or overfilling pools, leaking hoses to be rectified, recirculating pump systems, water for patrons and washed hotel towels upon request.

# “California drought leads to mass tree felling across Los Angeles”

\*Source = *International Business Times* and *Before It's News*

- 14,000 trees have died in L.A. in the last year
- Removing 56 trees in North Hollywood Park
- Concerns include: loss of wildlife habitat, pollination of flowers by animals (in turn), decreased mental health, increased heat island effect, potential tree failure





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## **Carlsbad Desalination Plant's Pipeline Now Complete**

- \$1 Billion Cost
- Set to open Fall 2015
- To serve SD County Water Authority
- To convert 50 million gallons per day
- Expected to serve 7-10% of customer base's needs  $\approx$  112,000 families
- Cost per household expected to raise \$5-\$7/mo.

# The California town with no water: even an 'angel' can't stop the wells going dry

East Porterville is the epicenter of suffering in drought-stricken California: with private wells dried up, people are leeching water from neighbors' hoses, reporting those who water their lawns, and relying on bottled water for basic living. "There's so many straws in the glass that sooner or later it's going empty"

<http://www.theguardian.com>

# Out Of Water

<http://touch.latimes.com>

## Master-planned community at risk of losing all water within days

Email Facebook 796 Twitter 206 +1 11

BY MATT STEVENS  
June 18, 2015, 3:00 a.m.

When the state last week took the rare step of curtailing the water rights of more than 100 irrigation districts and growers, it appeared that agricultural areas would be the hardest hit.

But now, an upscale master-planned community of 15,000 residents in San Joaquin County is facing the loss of all water supplies within days — prompting a frantic search for new sources.

Unlike the vast majority of communities in California, Mountain House purchases all its water from a single rural irrigation district. And that agency was covered by the state's order



ROBERT DURELL / LOS ANGELES TIMES

The master-planned community Mountain House is at risk of losing its water supply. About 160 local farmers are also affected by the curtailment order.

## Emergency Water Conservation Ordered in the Hoopa Valley

HANK SIMS / SATURDAY, JUNE 27 @ 3:23 P.M. /

Tweet

Like 492

EMERGENCIES

Press release from the Hoopa Valley Tribal Office of Emergency Services and the Hoopa Valley Public Utilities District:

Hoopa Valley residents are being asked to limit their water use to drinking and flushing toilets in an effort to refill five tanks that were completely depleted last night.

Residents on Community Services Road and in the Mill Creek area have little to no water as of Saturday morning, June 27, due to the water shortage. The Hoopa Shopping Center is also affected. All residents of Hoopa could be affected if conservation measures aren't adhered to immediately.

<http://.lostcoastoutpost.com>



# Easy to Overreact

- Cyclical weather events
  - Research into tree rings indicates that California experienced megadroughts from A.D. 850 to 1090 and 1140 to 1320
  - Driest years in Sierra are 1923-24 and 1976-1977
  - Other historical periods from 1929-34, and 1987-92
- Concern greatest during summer months
- Trees and woody vegetation gets a black eye - Over-pruning, removals, lack of watering
  - OR, improper watering practices
- **Best management practices** scrapped for short-sighted short-term *perceived* gain
- How do we tell the right story???

# But....Long-Lived *Properly-Managed* TREES provide Long-Term Benefits

- Understanding Tree Benefits
  - Sequestering Carbon
  - Cooling air temperatures
  - Capturing stormwater
  - Improving Soil Conditions
- Understanding Climate Change
  - Adjusting our Planting Palette
  - Effective, Efficient Irrigation and Care
- Understanding Patterns with Change



# Water Conservation Costs \$\$\$

- Raising rates by water agencies to make up revenue lost by customers
- Penalties and fines for agencies not meeting mandates
- Infrastructure costs for improved efficiency / retrofits, monitoring, desalination plants, etc.
- Ag. sector bases livelihood of water accessibility
- Lack of tree care/declining trees = loss of long-term value not easily replaced

# The Bigger Picture

- How sustainable are these efforts?
- Are they actually being enforced?
- Why is this the impetus for change?
- Can we be as mindful in better times?
- Outdoor landscape water use only 9% of the problem.



Are BMP's really the solution as population growth and reliance on resources outweighs natural ecosystem preservation?

# Resources Available



- [www.cadrought.com](http://www.cadrought.com)
- CaUFC Infographics [caufc.org](http://caufc.org)
  - “Help Your Trees Survive The Drought”
- Tree People Infographic [TreePeople.org](http://TreePeople.org)
  - “How To Keep Trees Alive in the Drought”
- LA’s “Save The Drop Campaign”  
[lamayor.org/savethedropla](http://lamayor.org/savethedropla)
- ACWA/CDWR’s Save Our Water  
[saveourwater.com](http://saveourwater.com)
  - Drought Facts, Tips, Water Agency Lookup
- NEW! CAL FIRE U&CF Program Fact Sheets



THANK YOU

DAVID MCNEW / GETTY

## Trees are latest victims of California's four-year drought

### Reader Comments:



Mr Oh

2 days ago

You built a city in the middle of a desert people. And you're in a drought, you say? What part of "desert" do you not understand?



Aaron Parr

2 days ago

This is a predictable outcome of misguided policies.

What this article fails to address is that the residential water restrictions are meaningless political theater. The real problem is the agricultural sector, and the state government has done nothing of significance to address this.

Ron McCune

2 days ago

..... California is on the beginning of the end of life in California. The ONLY way for California AND the rest of the world to survive is to shut down the deserts of the Earth. WE MUST immediately shade the deserts with some kind of covering like tinted film. Perhaps we can turn deserts into garbage dumps so to lower the heat from sand. Either way if we cut down on heat derived

- \*Source = <http://america.aljazeera.com/articles/2015/7/6/trees-are-latest-victims-of-californias-four-year-drought.html>



Nick Annas

2 days ago

California has enough water. It just has too many people.