



# *California's Crown Jewels Under Attack*

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*Science that makes a difference*

California ReLeaf's The Power of Trees Conference  
Los Angeles, CA, August 11, 2016



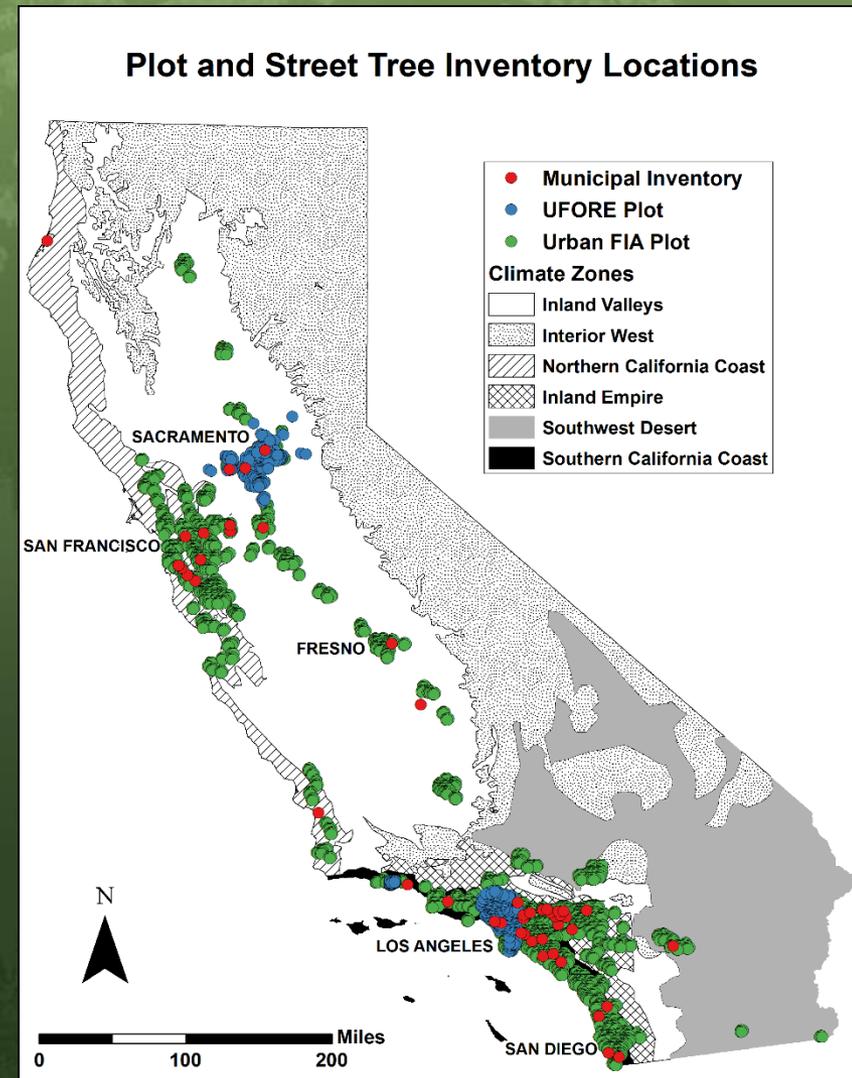
# Today

- State of California's Urban Forests
- Problem
  - High value
  - Low investment
- Solutions
- Lessons Learned



# Assessment Methods

- Plot data: FIA & UFORE  
49 street tree inventories
- 2012 UTC: 1-m NAIP
- Land use map: 6 classes
- Climate zones: 6 in CA
- Transfer functions
  - kWh/UTC ha (CZ & LU)
  - Street length & density



# Street Tree Results

- Numbers up: 5.9 to 9.1 million
- Density down: 105 to 75/mile
- Stocking: 36.3% (16 million vacant sites)



# Street Tree Results

## 'Street Value' of California Trees Is \$1 Billion



Posted on Jun 25, 2016

By **Tim Radford** / **Climate News Network**



*The tree-lined splendor of California Boulevard in Pasadena. (Kevin Nelson via Flickr)*

*This piece first appeared at **Climate News Network**.*

LONDON—California foresters have demonstrated once again that money does grow on trees—and they are not talking about commercial orchards.

New research estimates that the pines, eucalypts, planes, palms, sequoias and magnolias that line the boulevards of the Golden State's cities and suburbs are **worth at least \$1 billion a year to California taxpayers.**

# Urban Tree Canopy (15%)

- 108 sq yds/capita (US avg 451 s.y.)
- California 50<sup>th</sup> in U.S.
- Uneven distribution



# Structure Results

- 173.2 million trees, 5/capita
- Diversity: Oak (22%), Cherry (6.6%)
  - Many vulnerable to pests and drought
- Youthful age structure



# Function & Value Results

- \$181 billion asset value
- \$8.3 billion/yr services (\$48/tree)
  - \$7.2 billion property values (3.6%)
  - \$548 million energy (AC 179k houses)
  - 103 MMT CO<sub>2</sub> stored, 8.5 MMT removed/yr (remove 1.8 M cars)
  - \$56.2 million/yr pollutant uptake (low \$ due to BVOCs)
  - \$324.6 million/yr interception (424k houses)
- \$2.20 returned per \$1 spent

# Good Trends in California's Urban Forest

- Increased \$ for planting
  - 1999 = \$1 M
  - 2015-16 = \$15-30 M
- Increased number of California ReLeaf
  - 63 (1999) to 90
- Increased number of Tree City awards
  - 103 to 149
  - \$9 to \$11/capita

## The State of Urban and Community Forestry in California

*Status in 2003  
and  
Trends since 1988*



*by*

**Richard P. Thompson**

Urban Forest Ecosystems Institute  
California Polytechnic State University  
San Luis Obispo

*Funded by*

California Department of Forestry  
and Fire Protection  
Urban & Community Forestry Program

Technical Report No. 13  
July 2006

# Disturbing Trends

- Declining tree budgets
  - \$3 to 2/capita (1988-2003)
- Removing more trees than plant (18-22%)
- Planting more small, short-lived trees
- Declining tree diversity
- Los Angeles (2005-09)
  - Losing 667 ac/yr
- PSHB/FD Complex
  - 26.8 million susceptible
  - \$36.2 billion remove/replace

Energy and Environment

## Trees are very, very good for our health. But in many cities, they're struggling

By Chris Mooney June 17



Georgetown Waterfront Park. In Washington. (John Botsford/The Washington Post)

It's a huge paradox.

# Problems

- Disconnect: High value of trees and underinvestment in their management
  - Trees are cost center
  - Managers are always fighting fires
  - Every community forest is different

# Solutions

- Increase revenues
- Connect with GI & resilience planning
- Manage for What? Define what resilient urban forests look like

# Increase Revenues

- How spend \$ smarter?
  - Technology to leverage social capital
- Sell certified carbon credits in voluntary market
  - Protocol
  - Registry
- Bundle co-benefits (Charismatic credits)
  - Storm water
  - BVOCs
  - Shade trees and energy savings

# Connect With GI & Resilience Planning

- Need time to think strategically
  - Urban areas most at-risk
  - Heat waves, air pollution, extreme weather events (flooding, winds, etc.)
- Urban forests are GI that builds resilience
  - Process not just product
  - Community cohesion
  - Youth education, jobs, crime reduction



# What Do Resilient Urban Forests Look Like?

- What are we managing for?
  - Are we creating a legacy of value or headaches?
  - How do we do it better?
  - How much do we save by doing it better?
- We need:
  - BMPs for resilient urban forests that embrace diversity of place, consensus approach
  - Metrics for assessing progress

# Three Traits of Resilient Urban Forests

- Resilient Resource
  - Delivering high level of services
- Mindful Management
  - Applying science and best practices in support of a resilient resource
- Civic Connections
  - Embedding tree literacy and activism in all aspects of civic life

# Resilient Resource

- Abundance
  - UTC targets sustained
  - Fully stocked streets & parks
- Species Composition & Age Structure
  - Diverse mix of climate-ready species
  - Juvenile and maturing trees dominate
- Health
  - Excellent and good health dominate
  - Monitoring in-place
  - Capable of rapid response to threats



**A Resilient Resource  
Doesn't Happen by Chance**

**Continued Commitment**

# Mindful Management

- UTC Campaigns
  - Integrate with policy
  - Ordinances to protect & expand
  - Funding
- Master Plans
  - Prioritize
  - Protect veteran trees
  - Planting
  - Young tree care
  - Removal and reuse
  - Optimize benefits, minimize costs





**Mindful Management  
Doesn't Happen by Chance**

**Continued Commitment**

# Civic Connections

- Informed and active citizenry
  - NGOs and advocacy groups
- Youth education
- Skilled workforce and quality products
  - Landscape professionals
  - Jobs and career opportunities

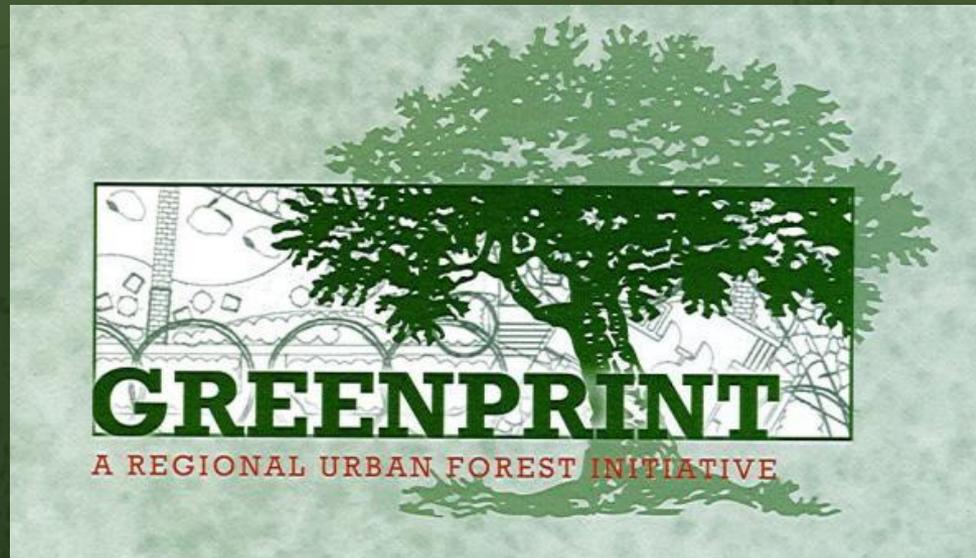


**Civic Connections Don't  
Happen by Chance**

**Continued Commitment**

# Lessons Learned

- Tree Planting Initiatives
  - 9 of 12 largest US cities
  - 20 million trees
- Sacramento Greenprint
  - National Greenprint Workshop



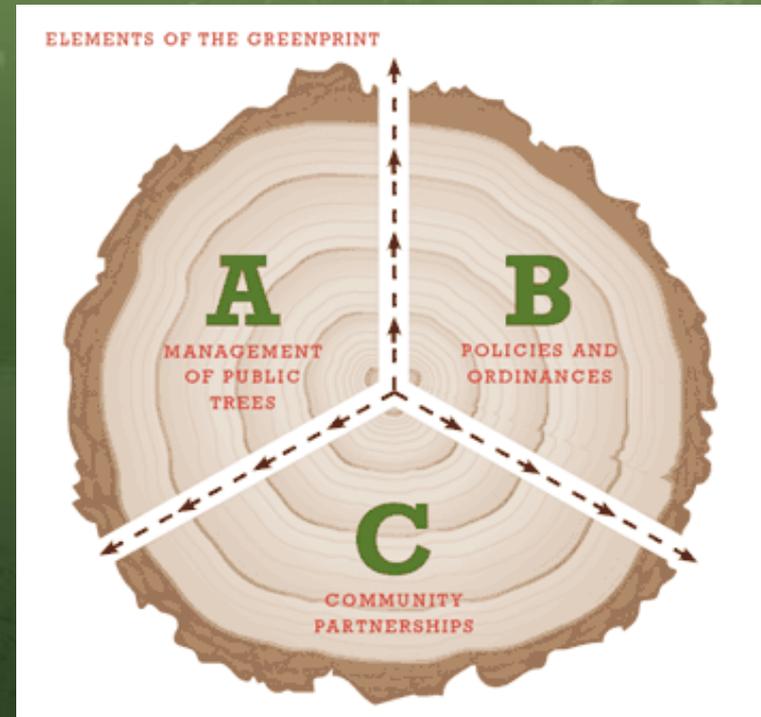
# Greenprint Lessons Learned

- Engage public officials
  - Credibility: Proven partnerships & science
  - Steering committee – meet regularly
- Use your Board of Directors
  - Build bridges to key groups
- Celebrate your volunteers



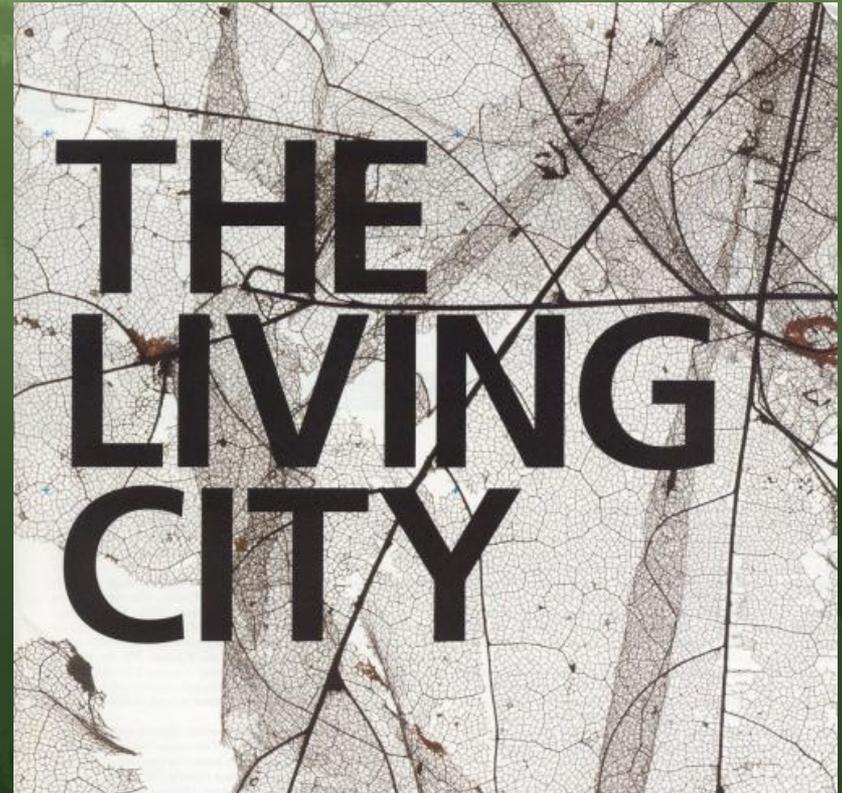
# Greenprint Lessons Learned

- Be leaders
  - Take risks, benefits will come
- Be visible
  - Tell your story
  - Use symbols to inspire action & report progress
- Be patient
  - Perseverance pays off



# TPIs: Initial Conclusions

- Beautification or GI?
  - Presence of overarching goals
  - Collaborative constituencies
- Effective planning?
  - Some approaches work
  - Science-based planning
- TPIs mainstreamed?



# BMPs

## Executive Management

- Set realistic goals
- Champion TPI with public & politicians
- Demand interdepartmental coordination
- Lead fund-raising effort



# BMPs

## Management Team

- Create early successes
- Establish strategic partnerships
  - planting/stewardship
  - public relations
  - funding
- Develop a plan
- Report TPI accomplishments





# **Regional Greenprints Don't Happen by Chance**

## **Continued Commitment**

# Summary



A photograph of a wooden treehouse built high up in a dense forest of tall trees. The treehouse has a balcony and is surrounded by thick tree trunks and lush green foliage. The scene is brightly lit, suggesting a sunny day.

# Summary

- Trees are **PRICELESS**
- Our Urban Forests are Sparse, Fragile and Threatened
- They Don't Happen by Chance: See the Future, Be the Future
- Lessons Learned: Continued Commitment is Required
- More Treehouses: Tell the Stories

The tree in front of my home is a **word**



The trees on my street are  
a **sentence**



The trees in my neighborhood  
are a **paragraph**



All the trees in my community  
are a **story**



This story tells us  
about our  
relationship to  
nature past and  
present. The next  
chapter is ours to  
write. Our challenge  
is to reveal the  
connections between  
**my trees** and **my  
forest.**

