USDA Forest Service

Urban Forest Connections

Second Wednesdays | 1:00 – 2:00 pm ET
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Urban Forest Connections Webinar Series

Join us for our monthly webinar series!
Second Wednesdays | 1:00 – 2:00 pm ET

The Forest Service’s Urban Forest Connections webinar series brings experts together to discuss the latest science, practice, and policy on urban forestry and the environment. These webinars are open to all. Archived webinar presentations and recordings will be available at this site.

This seminar series is presented by the Forest Service’s National Urban Forest Technology & Science Delivery Team.
WHAT CALIFORNIA CLIMATE POLICY MEANS FOR URBAN FORESTS

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Grants Program Manager
California ReLeaf

John Melvin
State Urban Forester
California Department of Forestry and Fire Protection (CALFIRE)

Greg McPherson
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USDA Forest Service
Branching Out for State Success in Urban Forestry
Advocacy Objective

- Secure Significant Cap-and-trade auction revenues for allocation to the Department of Forestry and Fire Protection for local assistance grants through the Urban and Community Forestry Program
Start with the local voice
Message integration in other sectors

- Each cause alone may not be strong enough to get attention, but together a stronger voice is created.
Message delivery by non-traditional voices

Our message is shared and we reciprocate.
Grab the low hanging fruit

Some of our best partners are our most logical partners.
Use your traditional partners to build nontraditional partnerships
Carpe Diem
4.5 MMTCO2e Sequestered

4.5 MMTCO2e Emitted
$17.8 million in Cap-and-trade auction revenues for allocation to the Department of Forestry and Fire Protection for local assistance grants through the Urban and Community Forestry Program for Fiscal Year 2014-15.

The largest one-year single-state allocation for urban forestry in U.S. History!
Building relationships opens doors to new partnerships

Relationships built become stepping stones to long-term alliances
TOGETHER, WE ARE POWERFUL!
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Urban and Community Forestry Program

We Finally Made It!
How’d that happen?
Uhhhhhh, Now What?
Overview of the Urban and Community Forestry Program

- Established by the California Urban Forestry Act of 1978.
- Technical assistance and advice – 6 Regional Urban Foresters, 1 Program Manager (State Urban Forester), 2 analysts.
- Public and professional education
- Encouraging research and technical transfer of information.
- Public events – Tree City USA
- Regional & local advocacy
- Fostering partnerships
- Connecting people
- Grants to further urban forestry efforts.
- $17.8 Million from Greenhouse Gas Reduction Fund in 2014/2015
- $1.28 Million from USDA Forest Service for 2014.
First, Some Background

- A solid five year plan created by an advisory body

CALIFORNIA PUBLIC RESOURCES CODE
SECTION 4799.06-4799.12

4799.06. This chapter shall be known and may be cited as the California Urban Forestry Act of 1978.

4799.07. The Legislature finds and declares that:

(a) Trees are a vital resource in the urban environment and as an important psychological link with nature for the urban dweller.
(b) Trees are a valuable economic asset in our cities. They help maintain or increase property values and attract business and new residents in urban areas.
(c) Trees play an important role in energy conservation by modifying temperature extremes with shade and humidity, and by influencing wind direction and velocity. This role is particularly important in reducing the amount of energy consumed in heating and cooling buildings and homes, and potentially in producing a local fuel and energy source.
(d) Trees directly reduce air pollution by removing airborne particulates from the atmosphere and helping to purify the air.
(e) Trees also help reduce noise, provide habitat for songbirds and other wildlife, reduce surface runoff and protect urban water resources, and enhance the aesthetic quality of life in urban communities.
(f) Trees planted in urban settings play a significant role in meeting the state’s greenhouse gas emission reduction targets by sequestering carbon as well as reducing energy consumption.
(g) Maximizing the benefits of trees through multiple-objective projects that provide environmental services can provide cost-effective solutions to the needs of urban communities and local agencies, including, but not limited to, increased water supply, clean air and water, reduced energy use, flood and stormwater management, recreation, and urban revitalization.

4799.08. The purpose of this chapter is to:

(a) Promote the use of urban forest resources for purposes of increasing integrated projects with multiple benefits in urban communities.
(b) Arrest the decline of our urban forest resources, facilitate the planting of trees in urban communities, and improve the quality of the environment in urban areas through the establishment and improved management of urban forest resources.
(c) Facilitate the creation of permanent jobs in tree maintenance and related urban forestry activities in neighborhood, local, and regional urban areas.
(d) Optimize the potential of tree and vegetative cover in reducing energy consumption and producing fuel and other products.
(e) Encourage the coordination of state and local agency activities in urban forestry and related programs and encourage maximum citizen participation in their development and implementation.
(f) Prevent the introduction and spread within this state of known and potentially damaging or devastating pests and diseases, including, but not limited to, Dutch elm disease, pine pitch canker, sudden oak death disease, the Asian long-horned beetle, and mistletoe.
(g) Reduce or eliminate tree loss resulting from these diseases and others that are identified.

4799.09. As used in this chapter the following terms have the following meanings:

(a) “Disadvantaged community” means a community with a median household income less than 80 percent of the statewide average.
Urban Forestry Defined

PRC 4799.09 (Urban Forestry Act Definition)

"Urban forestry" means the cultivation and management of trees and associated vegetation in urban areas for their present and potential contribution to the physiological, sociological, and economic well-being of urban society.
Cross Cutting Policy Work

• Strategic Growth Council
• Office of Planning and Research
• Air Resources Board
• Department of Public Health
• Natural Resources Agency
• Cal Trans
• Department of Housing and Community Development

Finding Common Policy Ground

• Reviewing others’ grants
• Finding ways to help them achieve their goals
• Standing up for the best management practices
• Being the “go to” subject matter experts
• Raising the profile through outreach and education
Implementation Plan for Recommendation I.C1, Support urban greening and access to green spaces.

Health in All Policies Task Force Implementation Plan
Support Urban and Community Greening and Access to Green Spaces
Endorsed by the SGC on November 2, 2011

I. The Health in All Policies Task Force
The Health in All Policies (HiAP) Task Force is a multi-agency effort to improve state

California Environmental Protection Agency
AIR RESOURCES BOARD

Compliance Offset Protocol
Urban Forest Projects

Forestry and Climate Change Adaptation

Preparing California for Extreme Heat:
Guidance and Recommendations
A Few Notes

• You must show them the value of what you do. For THEM.
• Be willing to compromise.
• Insist on equal partnership.
• Be willing to invest the time in things that are important to them.
• Don’t focus too narrowly on your issues.
• Be willing to institutionalize their issues.
• Take the long view.
Overview of AB 32 and SB 535

  - Requires California to reduce its GHG emissions to 1990 levels by 2020.
  - Will help mitigate risks associated with climate change, while improving energy efficiency, expanding the use of renewable energy resources, cleaner transportation, and reducing waste.
  - Regulatory and market-based programs aimed at reducing GHG emissions.
  - California Air Resources Board is the lead agency. They have a “Scoping Plan”, and an “Investment Plan” to achieve the goals set under AB 32.
  - [http://www.arb.ca.gov/cc/ab32/ab32.htm](http://www.arb.ca.gov/cc/ab32/ab32.htm) - for more information.

- SB 535 - 2012
  - Sets aside a portion of money collected from cap and trade revenue into a trust fund which will dedicate the money to programs and projects that reduce greenhouse gas emissions and mitigate the direct health effects of climate change for the most impacted and disadvantaged communities.
  - Cal EPA will choose a methodology for using CalEnviroScreen 2.0 to identify disadvantaged communities by the end of September.
  - [http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm](http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm) for more information. Look under “Background and Resources” and “ARB Guidance”.

- Note that the UF Act specifically refers to AB 32.
The Greenhouse Gas Reduction Fund (GGRF)

- Cap-and-trade is a market based regulation that is designed to reduce greenhouse gases (GHGs) from multiple sources. Cap-and-trade sets a firm limit or “cap” on GHGs and minimizes the compliance costs of achieving AB 32 goals.
- Under the cap-and-trade system, companies must hold enough emission allowances to cover their emissions, and are free to buy and sell allowances on the open market.
- Permits sold at quarterly auctions and reserve sales.
- The proceeds of the sales go into a fund (GGRF).
- The Legislature and Governor appropriate the funds in the GGRF for projects that meet the goals of AB 32.
- U&CF is not the most attractive for GHG alone, but when co-benefits are included, we shine! (Just ask the governor’s office.)
Grants

• Have a solid, impartial internal and external series of processes
• Create your processes with flexibility to accommodate multiple funding sources.
• Make it user friendly and simple-ish to administer

CAL FIRE U&CF Grant Project Types

- Green Trees For The Golden State (Tree Planting)
- Green Innovations (Green Infrastructure)
- Woods In The Neighborhood (Purchase and improve underused parcels)
- Urban Forest Management Activities (Inventories, Management Plans, Mapping and Analysis)
- Urban Wood and Biomass Utilization

Two stage application process

Challenges (opportunities!)

- Greenhouse gas quantification and tracking (Science! – thanks Greg!)
- Disadvantaged communities (areas that need the help most)
Disadvantaged Communities

- Huge need for assistance
- Strong desire to improve the community
- Opportunity to help solve other problems (jobs, community pride, health, etc.)
- Not coincidentally, have the least tree canopy cover, parks, and open space for the most part.
- We will do whatever it takes to meaningfully engage these communities.
- For now: workshops, webinars, website, partners.
- Future: one-on-one assistance with us and our partners.
Overcome objections
Reduce or eliminate matching if necessary
Make establishment care fully eligible for reimbursement
Maintenance endowments
Allow for advancement of funds when justified
Give strong scoring preference for disadvantaged communities
Give strong preference for job creation and other disadvantaged community needs
Do not dictate what they need. Listen to what they need.
Help them find partners.
We are using USFS grant funds to support early action and outreach by us and partners.
GHG Reductions

• Rely on the existing science (Thanks USFS!).
• Continue to push development of new science and tools.
• Allow for some flexibility in methods and tools.
• Make costs reimbursable during the project period.
• Be sure to review applications for a strong methodology and strong GHG reduction
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California’s Urban Forests
Top Down & Bottom Up

Greg McPherson
USDA Forest Service, PSW Research Station, Davis, CA

- Statewide Inventory of Urban Forest Carbon Stocks
- CAR Urban Forest Protocol Revision
- Testing “Climate-Ready” tree species
Statewide Urban Forest Carbon Inventory

• **Goals**
  – Map Urban Tree Canopy & Potential Tree Planting Sites
  – Inventory & Map Urban Forest Carbon
    • UFORE/FIA Plots
    • 41 municipal forest inventories

• UC Davis ICE & LAWR
• CAL FIRE FRAP
Street Trees

- 10.7 million trees
- 1 tree per 3 people
- 83 trees/street mile
- 39.3% full stocking
- Asset Value (4.125%)
  - $37 billion
  - $3,441/tree
  - $1,036/capita

Importance Values for Top Species

**Northern California Coast**

<table>
<thead>
<tr>
<th>Species</th>
<th>%Tot IV</th>
</tr>
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<tbody>
<tr>
<td>Platanus hybrida</td>
<td>23.1%</td>
</tr>
<tr>
<td>Liquidambar styraciflua</td>
<td>14.4%</td>
</tr>
<tr>
<td>Magnolia grandiflora</td>
<td>10.2%</td>
</tr>
<tr>
<td>Fraxinus velutina</td>
<td>9.0%</td>
</tr>
<tr>
<td>Pyrus calleryana</td>
<td>5.5%</td>
</tr>
<tr>
<td>Quercus agrifolia</td>
<td>5.0%</td>
</tr>
<tr>
<td>Eucalyptus globulus</td>
<td>4.6%</td>
</tr>
<tr>
<td>Pistacia chinensis</td>
<td>4.0%</td>
</tr>
<tr>
<td>Cinnamomum camphora</td>
<td>3.3%</td>
</tr>
<tr>
<td>Lagerstroemia indica</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

**Southern California Coast**

<table>
<thead>
<tr>
<th>Species</th>
<th>%Tot IV</th>
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</thead>
<tbody>
<tr>
<td>Platanus racemosa</td>
<td>11.4%</td>
</tr>
<tr>
<td>Ficus rubiginosa</td>
<td>9.8%</td>
</tr>
<tr>
<td>Pinus canariensis</td>
<td>7.9%</td>
</tr>
<tr>
<td>Lagerstroemia indica</td>
<td>7.0%</td>
</tr>
<tr>
<td>Magnolia grandiflora</td>
<td>5.9%</td>
</tr>
<tr>
<td>Cupaniopsis anacardioides</td>
<td>5.6%</td>
</tr>
<tr>
<td>Liquidambar styraciflua</td>
<td>4.8%</td>
</tr>
<tr>
<td>Pinus halepensis</td>
<td>3.0%</td>
</tr>
<tr>
<td>Prunus armeniaca</td>
<td>2.8%</td>
</tr>
<tr>
<td>Ulmus parvifolia</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
Value of Annual Benefits

- $1.18 Billion
- $109.52/tree
- $32.99/capita
Value of Annual Benefits per Tree
Remote Sensing Urban Tree Canopy (UTC)

- 2012 NAIP (EarthDefine)
  - Map UTC by land use
  - Map vacant tree sites
  - Estimate existing benefits
  - Establish UTC targets
  - Monetize increased benefits
Field Plots & Transfer Functions (TF)

• Integrating UFORE & FIA plot data
  • Calculate TF: t CO$_2$/ha UTC
Field Plot – Three Trees

75 ft
### Scale-Up

<table>
<thead>
<tr>
<th>Transfer Function</th>
<th>CO₂ Stored t/ha UTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential TF</td>
<td>50.0</td>
</tr>
<tr>
<td>0.25 ha UTC (27,000 sq ft)</td>
<td>12.5</td>
</tr>
</tbody>
</table>
CAR Urban Forest Protocol Revision

• Issues with existing protocol
• Streamline planting projects
• New urban forest management projects
  – Includes existing trees
  – UTC based with field plots
• http://www.climateactionreserve.org/how/protocols/urban-forest/
Status

• American Forests website
  – http://www.americanforests.org/our-programs/urbanforests/urban-forests-tools-resources/

• Revision: CAR approved this summer
How Will Our Urban Forests Adapt?

• Exposure – extent?
  – Temperature
  – Precipitation
  – Wind
• Sensitivity – how react?
• Adaptive Capacity – potential to adapt?
• Time and Spatial Scales
  – 50+ years
  – Local scale
Climate-Ready Trees

- Score Existing Species
  - Risk Factors
  - Planting Recommendations
- Score Promising Species
- Cultivar Evaluation
  - UCCE Field Plots (Side-by-Side)
  - City Parks Testing
- Outreach
Vulnerability Assessment

Risk Factors

- Habitat Specificity
  - Sunlight exposure
  - Soil texture & pH
  - Soil moisture

- Physiology
  - Heat & drought tol.
  - Salt tol.
  - Wind tol.

- Biological Interactions
  - Pest vulnerability
  - Invasiveness
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.
Thank You!

http://www.fs.fed.us/psw/programs/uesd/uep/
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November 12, 2014 | 1:00-2:00 pm ET

Tree Risk Assessment for Municipal Officials
Paul Ries Oregon Department of Forestry
Jerry Mason Mason and Stricklin, LLC

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