


Trees and Climate Action

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Does your City have a climate action plan?

Do you participate in a climate advocacy or science group?

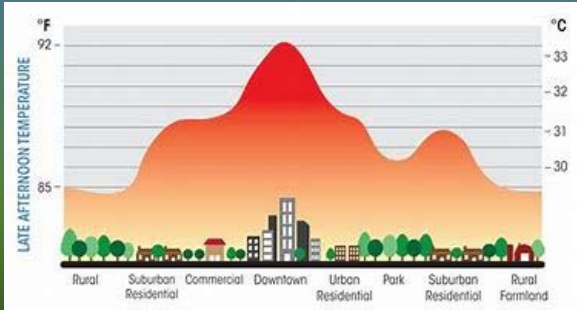
Trees and Climate Action

Key messages

- Trees influence and are affected by *climate impacts*.
- Trees are already positioned for *climate adaptation*.
- *Climate Action Plans* need to include trees, and their implementation can drive urban forestry budgets.
- Urban foresters need to engage and align with climate scientists, advocates, and other professionals to *advocate for trees*.

and ... Climate Impacts

Urban Heat Islands





Urban Form	Approximate Temperature (°F)
Rural	85
Suburban Residential	88
Commercial	90
Downtown	92
Urban Residential	90
Park	88
Suburban Residential	88
Rural Farmland	85

and ... Climate Impacts

Urban Heat Index

- Southern California, Los Angeles area and “Inland Empire”

and Climate Impacts

Sources of climate impact data

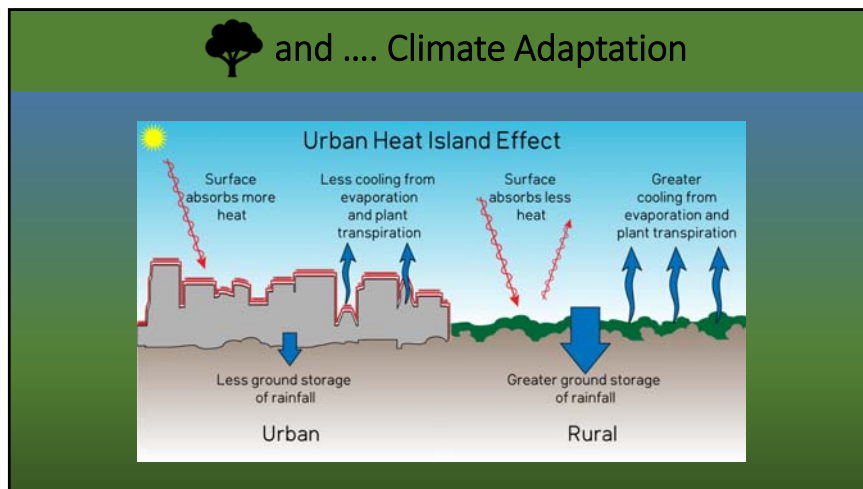
- Intergovernmental Panel on Climate Change (IPCC)
- U.S. National Climate Assessment, 2013
- U.S. Forest Service report, 2012
- Fourth Climate Assessment, California

and Climate Impacts

- Seek local climate science
- Assess local impacts of climate change on trees
 - Drought
 - Temperature
 - Wildfires
 - Storms
 - Pests

Has your City had 1 or 2 months of very high summer temperatures in past 3 years?

..... one or two extreme storms in the past decade?




and Climate Mitigation

Urban trees for climate mitigation

- Carbon sequestration
 - \$4.8 billion annual value (Nowak and Greenfield 2018)
 - Still very small compared with GHG emissions produced
- Cap-and-trade programs
 - Protocols are challenging
 - Risk of not attaining survival or growth commitments
- Urban wood reutilization
- First “take care of what we have,” then plant new trees

and ... Climate Adaptation

- Cities need trees!
- Health benefits
 - Shade, cooling
 - Active living
 - Most people live in cities
- Ecosystem services
 - Stormwater retention
 - Groundwater recharge
- Risk reduction
 - Ooops, also tree storm losses



and ... Climate Adaptation

Have you looked at iTree results for your city?

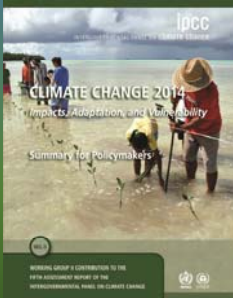
Have you compared "green" with "grey" infrastructure for stormwater mitigation?

Have you met with public health officials about trees for urban cooling?

and ... Climate Adaptation

What will it take? Factors affecting adaptation (from IPCC 2014)

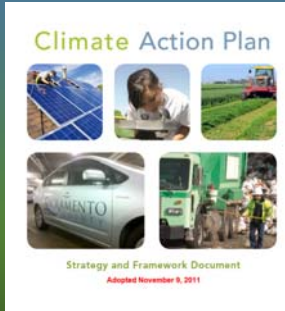
- Progress on planning, and little on IMPLEMENTATION
- Global and national principles, but need LOCAL details
- Growing reliance on natural ecosystems
- EQUITY of adaptation resources, and impacts
 - Cal Enviro Screen
- Need multi-organizational alignment and action



and ... Climate Action Plans

What's in a Climate Action Plan?

- Projected impacts by location, sector, equity
- Greenhouse Gas emissions
 - Current emissions
 - GHG reduction targets
 - Actions to reduce GHG emissions
- Adaptation to reduce impacts
 - Actions and priorities
- Public involvement
- Implementation and evaluation




and ... Climate Action Plans

- Actions and performance metrics
 - Tie to annual urban forestry budgets!

Table 3-9 Strategy 7: Carbon Sequestration		
Goal 7.1: Increase Urban Tree Cover		
City Action: CS-1 Develop and Implement an Urban Tree Planting Program		
Starting in 2018, develop and implement an Urban Tree Planting Program, including standards to right-size trees and minimize pruning and irrigation needs, to promote increased carbon sequestration by trees within the community.		
Target Year	Performance Metric	GHG Reduction Potential (MTCO _{2e})
2020	150 net new trees planted.	5
2030	650 net new trees planted, increasing the tree canopy coverage from 22 to 22.16 percent, an increase in overall tree canopy of 0.16 percent.	23

and ... Climate Action Plans

- Progress reports from cities



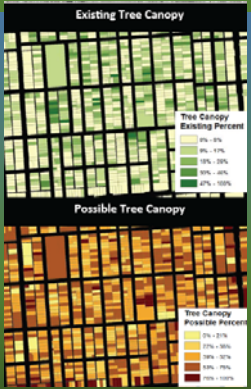
- “Report cards” from advocacy groups



and ... Climate Action Plans

Tree canopy assessment

- LiDAR-based remote sensing data (\$\$\$\$)
- Transform data to land cover types

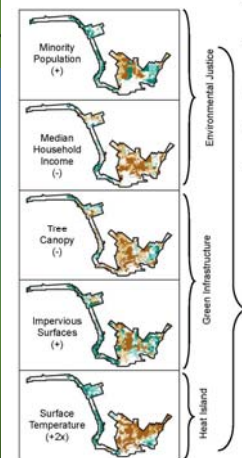
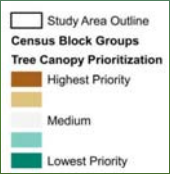


- Existing tree canopy
 - By land use (schools, parking lots)
 - By neighborhood (equity)
- Possible tree canopy

and ... Plans

Tree canopy priorities

- Environmental justice
- Green infrastructure
- Heat island

🌳 and Climate Adaptation

Translating plans into implementation and funding

- Tree inventory
- Urban forest management plan
- First, “take care of what we have”
 - Maintain health of large, mature trees
 - Protect from construction, pests and other losses
 - Enforce codes for tree protection, planting and replacement
- Second, plant (small) and care for trees
 - Educate property owners and managers
 - Engage citizens and youth



🌳 and Climate Action Plans

Does your City have an approved Climate Action Plan?

Is your City working on a draft Climate Action Plan?

Are trees included?

Does your City have an urban forest management plan?

🌳 and Climate Advocacy

Make climate action a priority!

- Align with climate scientists and advocates
- Engage other professionals
 - Plan, install and maintain trees
- Embed climate into professional activities
 - San Diego Regional Urban Forests Council
 - Why? What can we do? Resource links?


www.sdrufc.com/trees-climate (including this presentation)



🌳 and Climate Advocacy

Emerging issues and trends

- Do youth and future generations have standing?
- What if negative feedback loops are faster than predicted?
- Is there equity in tree actions and benefits?
- Are your trees positioned for nature-based adaptation?



and ... Climate Advocacy

Do you participate in a climate advocacy or science group?

Do you talk about climate change with local residents?

Do you incorporate climate action into budget requests?

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Take-home messages!

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Questions? Contact Anne Fege, afege@aol.com

Trees and Climate Action

Take-home actions!

- What are the first two actions you could take with your City, to position trees for climate adaptation?

Take one minute to write two actions that will increase funding for trees in your City, based on climate adaptation.

First person describes one action, and explains why that would result in more resources for tree management.

Pair up.

Switch to second person describing their action.