

# PARTNERS IN COMMUNITY FORESTRY

## 2024 CONFERENCE



# Empowering Urban Forestry Nationally with New Federal Investments in Tools and Data



PRESENTED BY:

**David Sivyer, National Program Manager**

***USDA Forest Service***

**Paul Cooper, Chief Operating Officer**

***Arbor Day Foundation***

**Ian Hanou, Founder and CEO**

***PlanIT Geo***



# URBAN AND COMMUNITY FORESTRY GRANTS

USDA is an equal opportunity  
provider, employer, and lender.

## \$1.5 Billion to Expand Tree Canopy and Access to Nature

100% of Benefits Will Flow to Communities in Greatest Need

Urban and Community Forestry Grants, authorized under the Inflation Reduction Act, provide funding to community-based organizations, Tribes, State and local agencies, public colleges and universities, and non-profits working to provide equitable access to trees and nature and the benefits that trees provide to urban communities.

**\$1.4B  
Awarded!**



**1**  
Investing in a Healthier  
Future for America

**2**  
Expanding Tree Canopy  
in our Communities

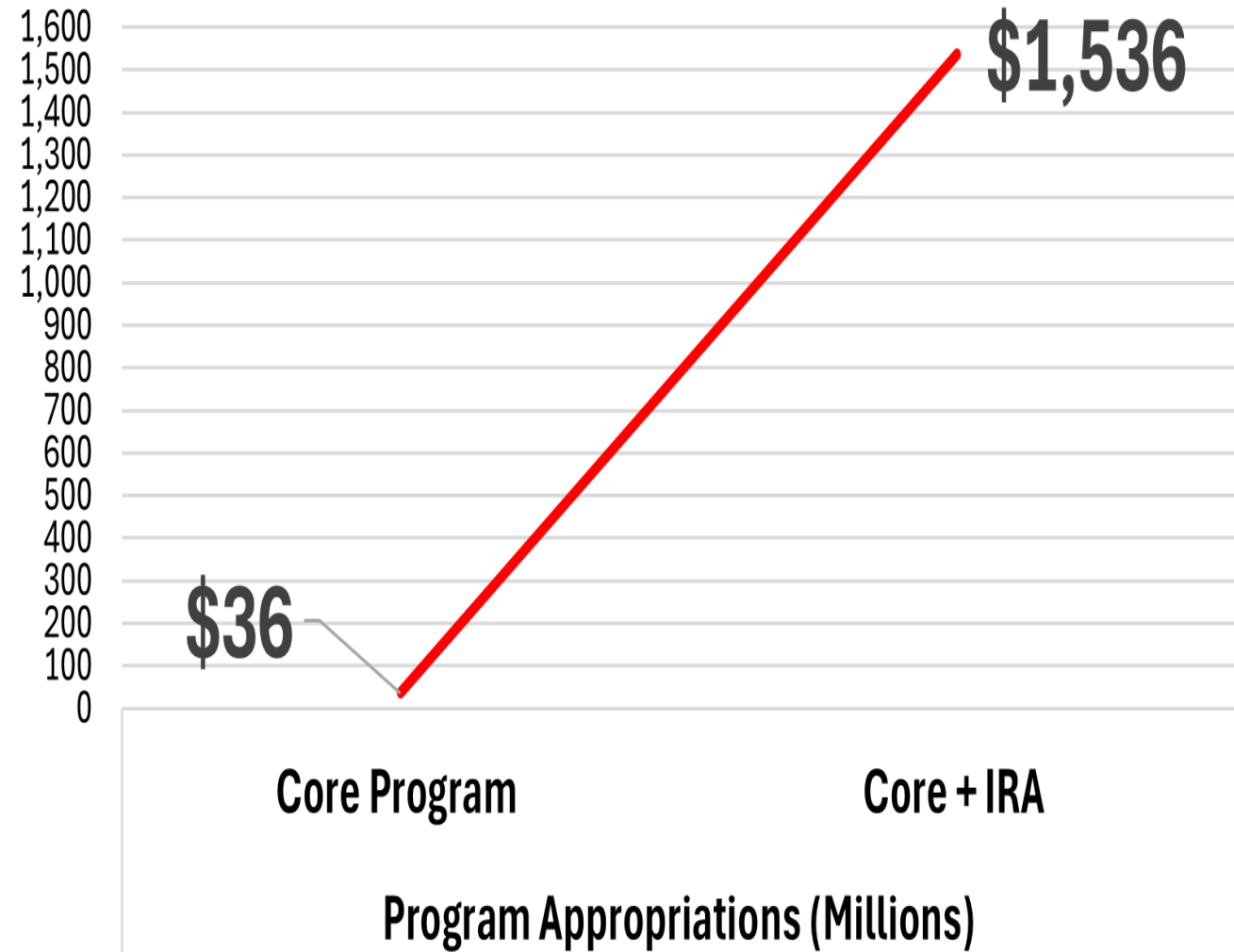
**3**  
The Benefits of Trees  
in our Communities

**4**  
Confronting the Growing Threat of  
Extreme Heat and Climate Change

# IRA Changed Everything!

- Program Funding
- Program Focus & Delivery
- Program Partnerships
- Stakeholder Engagement
- Outcome Reporting

## UCF Program Funding





# Community-Defined Priorities

- Tree Planting & Maintenance
- Restoration & Resilience
- Workforce Development
- **Extreme Heat**
- Community Engagement & Planning



# Strategic Program Shift

Traditional	IRA
State Forestry Assisted Delivery	State & Non-profit Partner Assisted Delivery
State/Nat'l Priorities	Community Priorities
State/Local UCF Program Outcomes	Quantitative/Qualitative Community Outcomes
State/Local UCF Program Investments	Strategic National Investments

USDA Forest Service U.S. DEPARTMENT OF AGRICULTURE UCF IRA Accomplishment Reporting Tool

English-US

### Activity Information

Please identify the Reporting Timeline that you are submitting this form for, and select the Activity Type. After you select the Activity Type, you will be prompted to identify the location(s) where this work occurred and to provide additional details regarding the completed work.

**Reporting Period**  
This report should only pertain to activities that occurred within one of these reporting periods.

Jan 1, 2024 - June 30, 2024
  July 1, 2024 - Dec 31, 2024

**Activity Type\***

Planting
  Pruning
  Removal

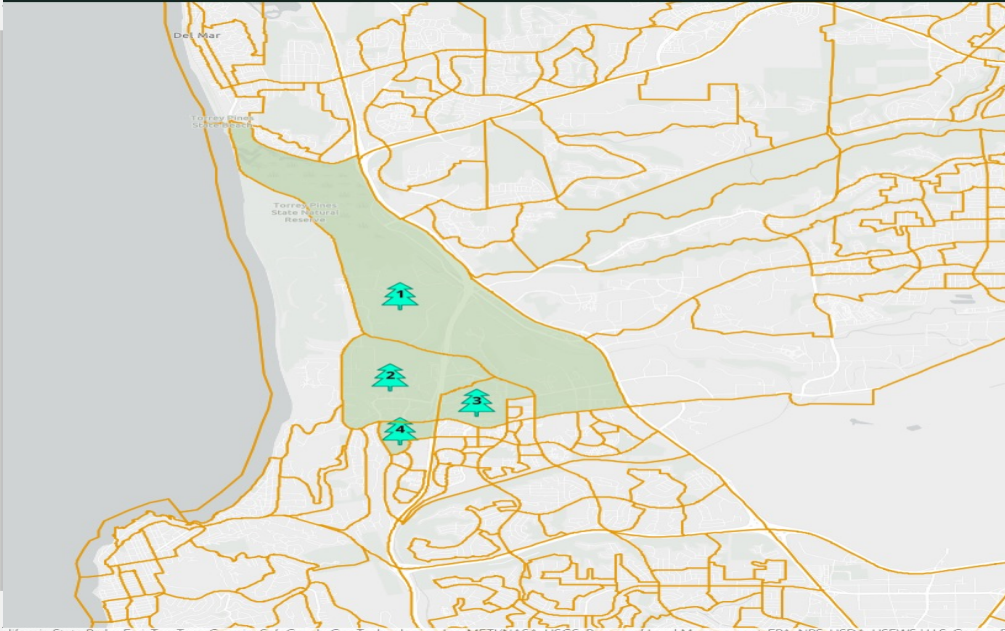
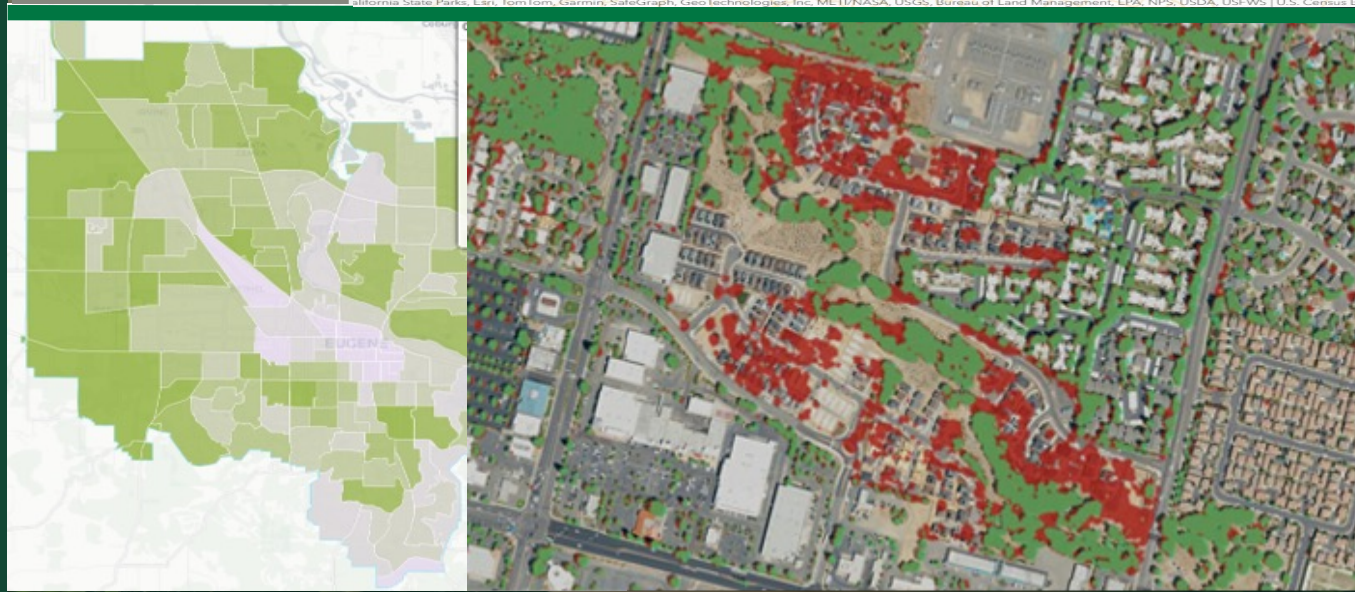
Treatment
  Distribution /Giveaway
  Inventory

Canopy Assessment
  Planning and Policies
  Career Pathway Training

Earned Credentials

Back Next

Page 3 of 5

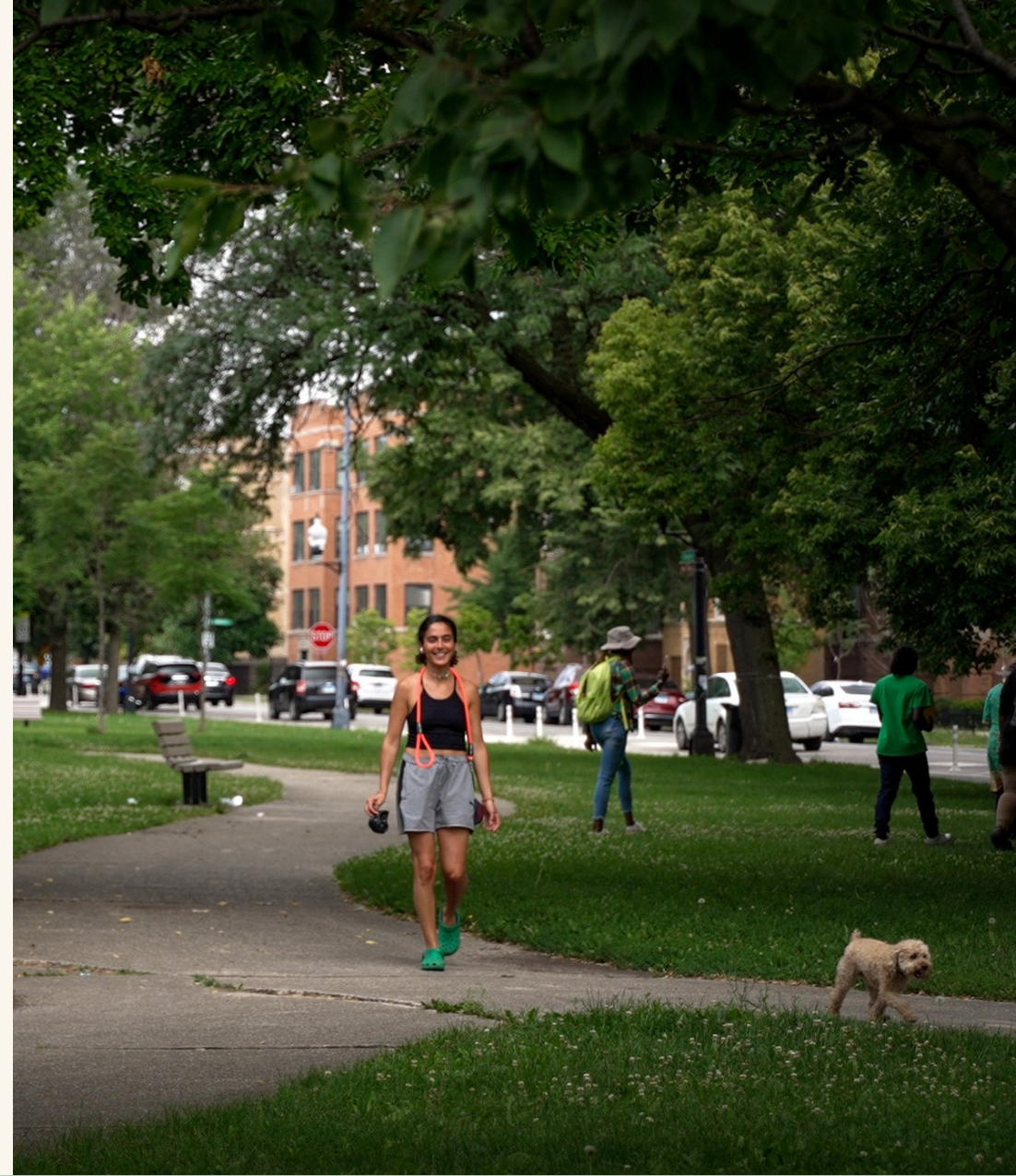





Empowering Urban Forestry

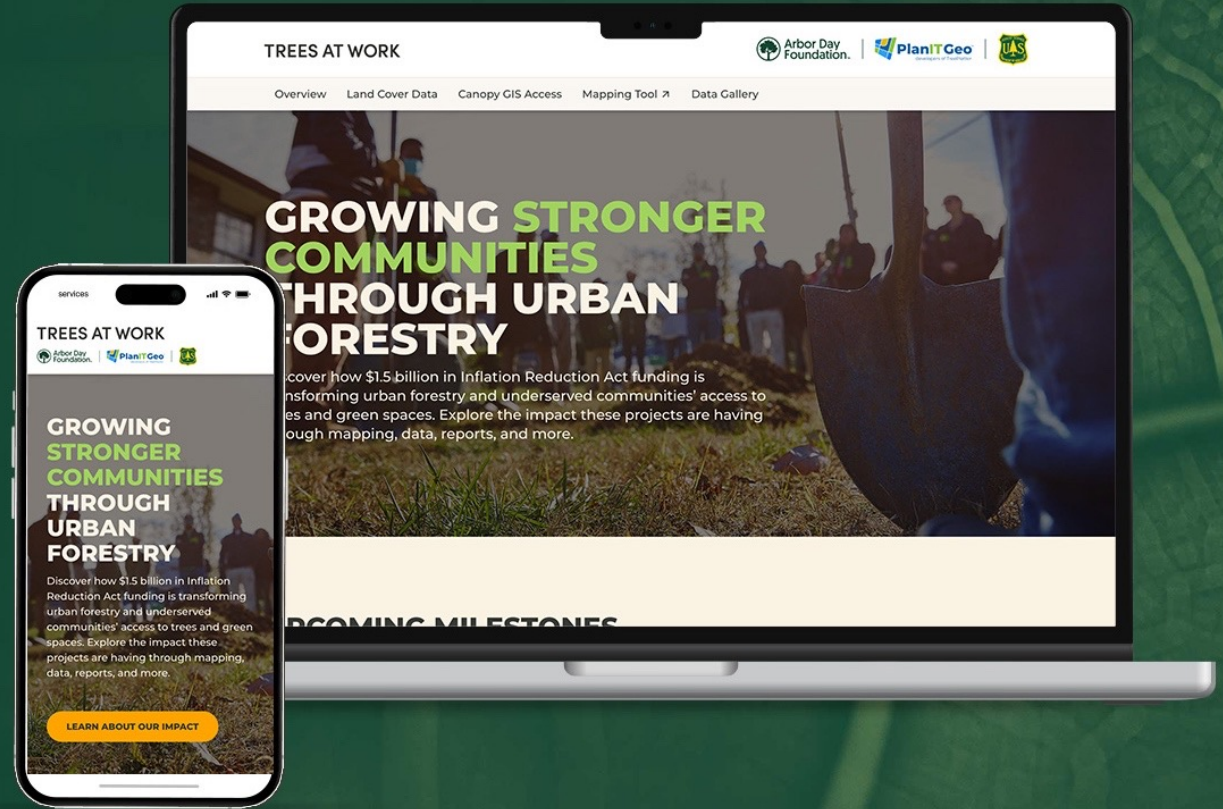
# Partnering on trees at work

- 48 years of partnership
- Connect and convene
- The power of stories





INTRODUCING...  
**treesatwork.org**



Empowering Urban Forestry

# treesatwork.org

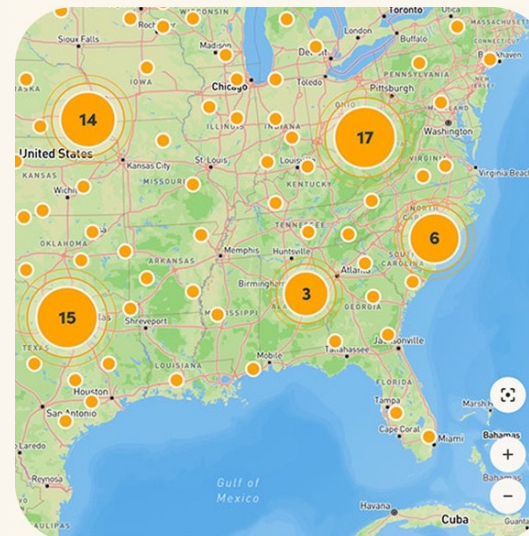
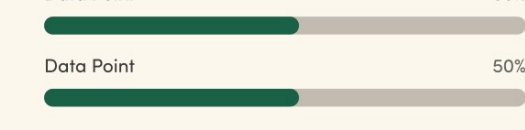
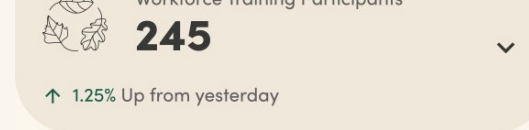
1. Accomplishment reporting dashboard
2. Impact stories
3. National Urban Tree Canopy assessment
4. Data hub





# Accomplishment Reporting

- Quantitative activity data
- i-Tree environmental benefits
- Contextual layers



## IMPACT

**10K**  
Trees Planted



Data Point 123 trees

Data Point 123 trees

Data Point 123 trees

Data Point 123 trees



**2K +**  
Trees planting events



# National Urban Tree Canopy Assessment

The first high-resolution  
spatial analysis of the  
nation's urban forests  
when viewed from above.



# National Canopy Assessment: Project Overview

- Remote sensing analysis: urban land cover classification and mapping
- Assessment of the tree canopy, canopy change, and land cover data summarized for various geographic scales and incorporate CEJST data
- Data delivery: download at TAW website
- A national UTC report and story map
- A national, web-based canopy software application

# Brief Tribute

Jarlath O'Neil-Dunne (1975-2024)

- University of Vermont, Spatial Analysis Lab
- A leader in urban tree canopy assessments and drones
- A father, husband, son, brother
- A larger-than-life mentor, friend, and all-weather bike commuter
- And he served tours in the United States Marine Corps





# National Canopy Assessment:

## Extent of the Analysis

- The mapping and data are available for all census urban areas (~5k pop.) in all 50 states plus U.S. territories and protectorates.
- USFS and ADF are exploring options to extend the mapping and data to reach smaller towns, additional IRA recipients, and more tribal lands.



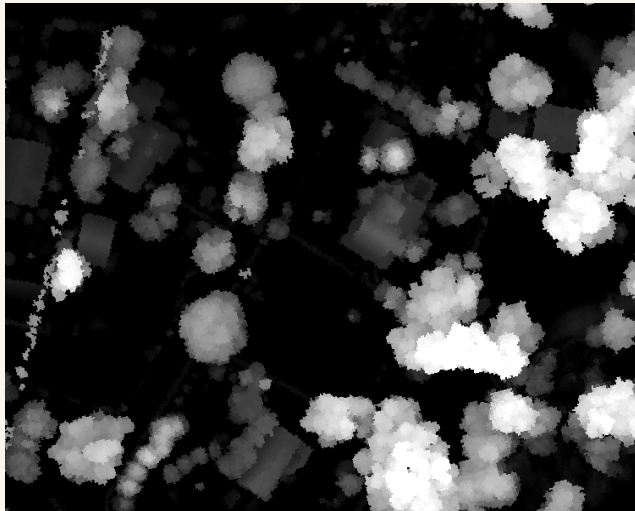
# National Canopy Assessment:

## Imagery and Methods

Aerial Imagery (60cm)



LiDAR (Surface Model)



- We continuously analyze USDA National Agricultural Imagery Program (NAIP)
- 60cm aerial images from 2022 or 2023 (Utah was 2021) and 50cm satellite imagery in Alaska and the Pacific Islands.
- We use AI, Machine Learning, and LiDAR to train a classifier to map tree canopy and other land cover with very high accuracy and consistency.
- We used historical NAIP imagery to map changes in tree canopy over time (5-7 years prior, depending on the state).





# National Canopy Assessment:

## Land Cover Classes

- Tree Canopy (current and historical)
- Shrub
- Impervious Surfaces
- Water
- Bare soil / dry vegetation
- Herbaceous / grass / open space



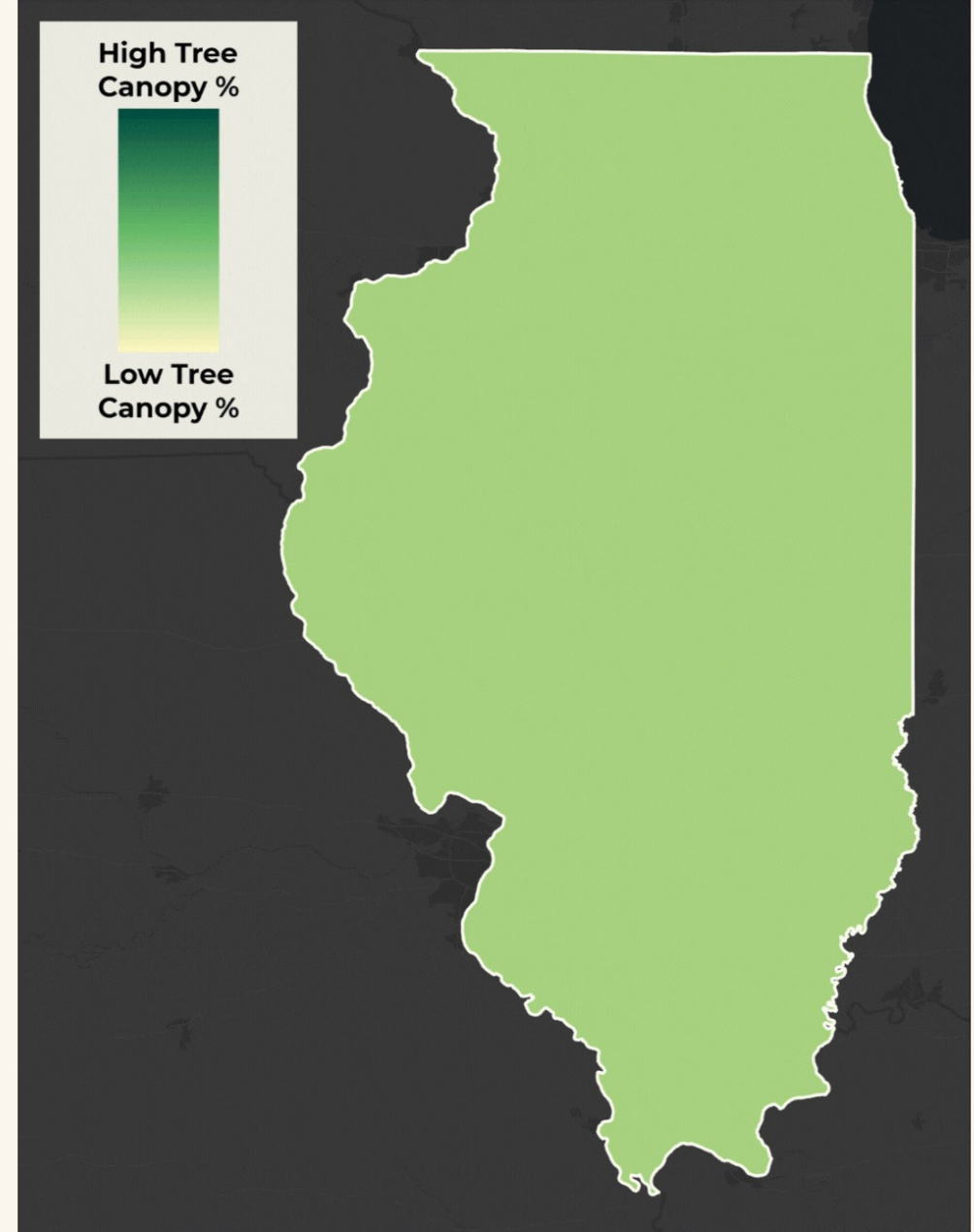


# National Canopy Assessment:

## Geographic Scales:

Urban Land Cover and Historical Tree Canopy was summarized by:

- State-level
- Congressional Districts
- Census urban areas
- Census tracts (2020)
- Census block groups (2020)

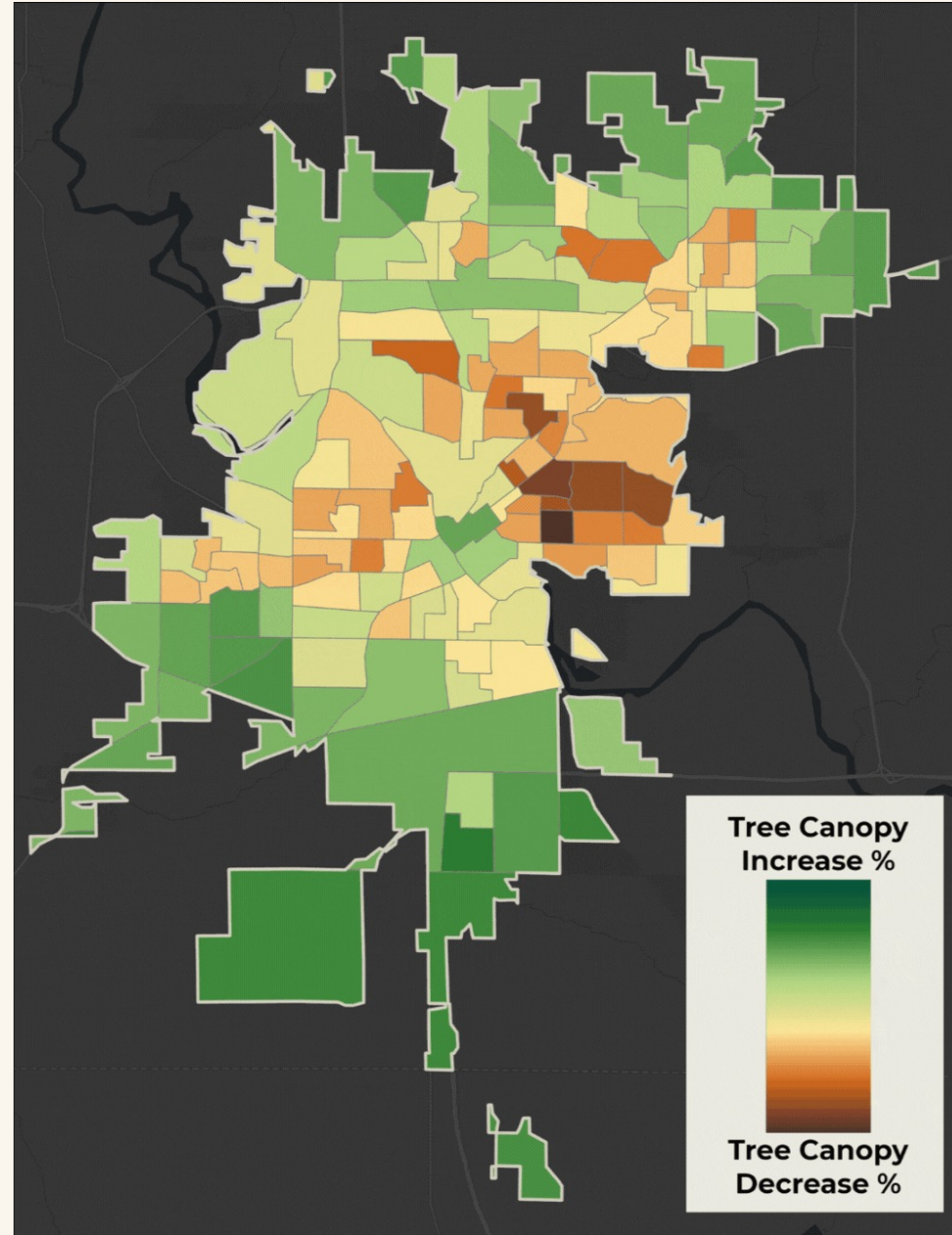


# National Canopy Assessment:

## 2020 Derecho, Cedar Rapids, Iowa

Urban Land Cover and Historical Tree Canopy was summarized for:

- From 25% canopy (2017) to 16% canopy (2023)
- 8,911 acres of canopy lost
  - -9% (absolute net basis)
  - -36% (relative basis)







## Precision of Canopy Gains vs. Losses

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# National Canopy Assessment: How can you use this?

## Reports & Fact Sheets

**LOUDBOUN COUNTY, VIRGINIA**

**AN ASSESSMENT OF EXISTING AND POTENTIAL TREE CANOPY**

45% TREE CANOPY (2023)  
39% PERMEABLE SURFACES  
11% IMPERVIOUS SURFACES  
+3.1% CHANGE IN TC (2012-2023)

**Overview**

Trees are vital components of our ecosystem, providing numerous benefits to both the environment and our communities. In Loudoun County, trees play a crucial role in carbon storage, air purification, and stormwater management. Additionally, trees help reduce energy costs, increase property values, and enhance overall quality of life.

A comprehensive tree canopy assessment was conducted for Loudoun County using 2023 aerial imagery. The assessment revealed that tree canopy covers nearly half of Loudoun County (45%), with the remaining land divided between permeable surfaces such as grass and soil (44%) and impervious surfaces like roads and buildings (11%).

**Change in Tree Canopy**

This assessment also analyzed tree canopy changes in Loudoun County from 2012 to 2023. Over the 11-year period, the county's tree canopy expanded by 3.1%, a significant increase within the current county boundaries. Most of the growth occurred in the rural policy area, adding 2,033 acres (24% contribution), while other areas saw an increase of 2,266 acres (64% contribution). The overall increase in tree canopy was primarily due to maturing trees in older subdivisions and the development of new residential and multi-use areas where new forested land was reforested with newly planted trees.

**Future Actions**

This assessment provides a tool for targeting future planting activities by identifying plantable spaces in key locations, such as corridors and greenways with disadvantaged populations, regions that have experienced tree loss, and areas with above-average surface temperatures. One focus will be tree equity, as tree cover is often inequitably distributed in disadvantaged areas. Another focus will be environmental impact, for example, trees overhanging impervious surfaces provide unique ecological benefits, such as localized cooling through shading and improved stormwater management.

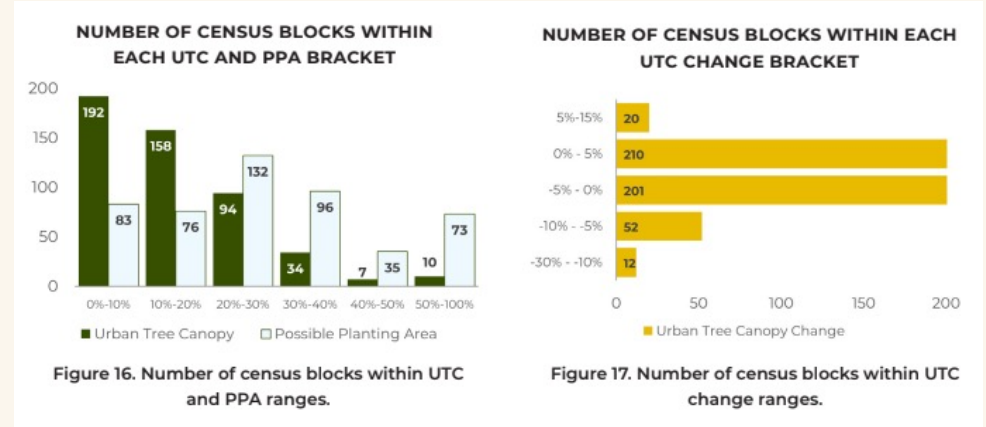
More detailed information about tree distribution, including socioeconomic factors, can be found on the Loudoun County website at [loudoun.gov/2366363](https://loudoun.gov/2366363).

The project used aerial imagery from the USDA's National Agriculture Imagery Program (NAIP) and a digital surface model (DSM) to identify plantable spaces. The "tree canopy" category in the NAIP imagery was used to determine the current tree canopy cover. The DSM was used to identify areas where trees are likely to be planted based on slope and elevation. Additional land cover categories can be found on the website at [loudoun.gov/2366363](https://loudoun.gov/2366363).

**Loudoun County**  
2023

PlanIT Geo | earthrefine

## Analysis & Interpretation



## Plans & Policies



## RECOMMENDED TREE LIST & SISTER CLIMATE CITY ASSESSMENT

In support of the City of Camas, Washington's 2024 PARKS & OPEN SPACE MANAGEMENT PLAN

Last updated: January 2024



## Online Mapping & Software Tools

**TREEPLOTTER INVENTORY**

LOG IN

No Filters Applied

**LEGEND**

**Gainesville**

Layer: Disadvantaged Areas

Display by: CEJST Thresholds Exceeded

Showing 13 of 13 cejst disadvantaged census tracts.

Toggle All

- 2 (3)
- 3 (5)
- 4 (2)
- 5
- 6
- 12

**Charts**

**Layers**

- Census Blocks
- Trees
- Trees Inspections
- LCTE AOI
- Disadvantaged Areas

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**URBAN TREE CANOPY ASSESSMENT**

NASHVILLE, TENNESSEE  
DECEMBER | 2023

PlanIT Geo | earthrefine





# National Tree Canopy Tool

- View, explore, and filter data to plan planting projects and assess high impact opportunities
- Create maps for reports and presentations

**TreePlotter TREECANOPY.US**

ABOUT THIS PROJECT

**VIEW PLAN**

Use the slider bars to target and prioritize areas that are most suitable for tree canopy growth based on demographic, socioeconomic, and environmental criteria. The plan tool allows a user to visualize the areas of their city that would receive the most benefits from increased tree canopy based on selected criteria. Each selected criteria can be weighted high, medium, or low based on the user's needs.

Map and Layer Settings

**FILTER BY PRIORITY**

**Tree Canopy**

None

**Vulnerable Populations**

**Planting Opportunity**

None

**Legend**

Score

0 0.5 1



**TreePlotter TREECANOPY.US**

ABOUT THIS PROJECT

**VIEW PLAN**

Use the slider bars to filter what is shown in the map by selecting certain percentage ranges. This will remove any areas where tree canopy metrics do not fall within the specified range from the map.

Map and Layer Settings

Display by: **Impervious**

UCF-IRA Disadvantaged Communities

Display Only Disadvantaged Communities

Filter by Tree Canopy: **Canopy Change**

Filter by Land Cover: **Tree Canopy**

**Legend**

Impervious

0% 50% 100%

**Legend**

Score

0 0.5 1

**Census Tract ID: 8001015000**

State: **CO**

Total Assessed Area: **3,770 Acres**

Urban Tree Canopy: **4.7%**

UTC Change: **-1.7% (from 2017 to 2023)**

UCF-IRA Disadvantaged Community: **Yes**

Land Cover Classification

**Legend**

Tree Canopy: 4.3%

Shrub: 0.2%

Water: 6.9%



# National Canopy Assessment: What's Coming Next?

- Report and Story Map
- [treesatwork.org](https://treesatwork.org) launch
- Training Webinar
- Possible expansion to smaller towns and city-level summaries
- Use the data while it's current!
  - IRA projects
  - Management plans, goal setting, and to inform policies
  - Advocacy, fact sheet, infographics
  - Research and analysis
  - And much more...







Arbor Day  
Foundation™

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PlanIT Geo™  
developers of TreePlotter

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# Thank you.

David Sivyer, National Program Manager, USFS  
[david.sivyer@usda.gov](mailto:david.sivyer@usda.gov)

Paul Cooper, COO, Arbor Day Foundation  
[pcooper@arborday.org](mailto:pcooper@arborday.org)

Ian Hanou, CEO, PlanIT Geo  
[ianhanou@planitgeo.com](mailto:ianhanou@planitgeo.com)