



## **Session 2.2**

**No Country for Old Men: Planning,  
designing and managing urban forests to  
make them more accessible and inclusive**

**Chair: Phil Rodbell**



**World Forum on  
Urban Forests**



# 2nd World Forum on Urban Forests

Washington DC, 2023

## New concepts for inclusive and meaningful urban forestry

Groves, Streetwoods,  
and Doorstep Trees

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**Presented by**

Cecil Konijnendijk

Nature Based Solutions Institute



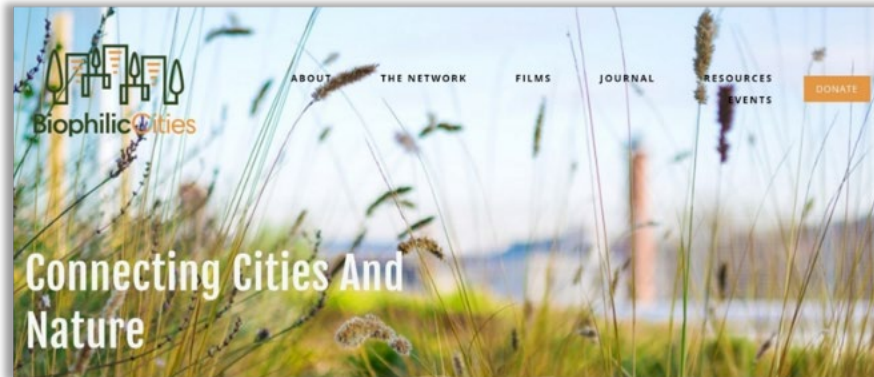
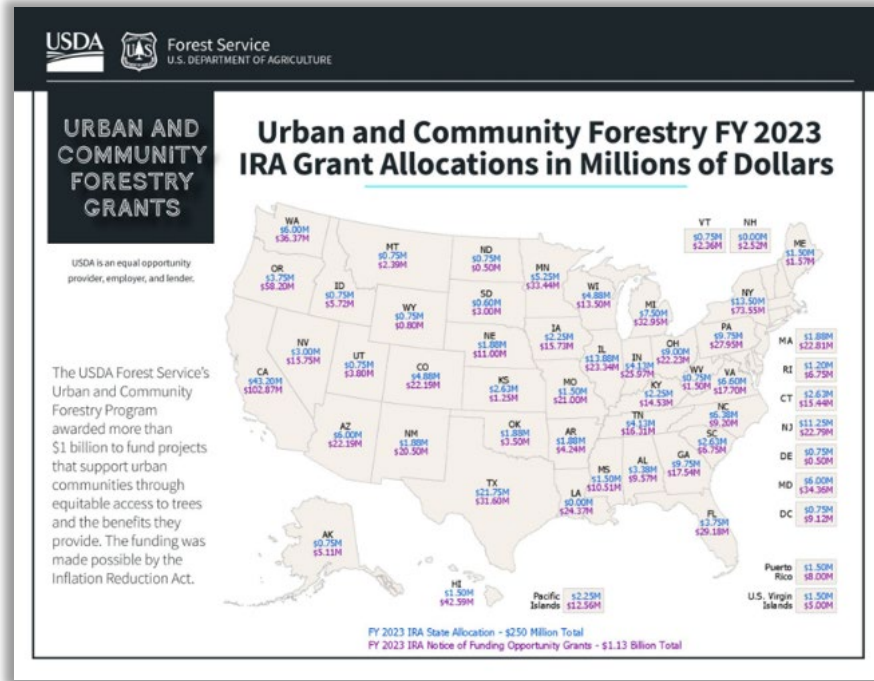


# 2nd World Forum on Urban Forests

Washington DC, 2023



It's time for Tree Equity.



# Principles for Urban Forest Planning

- **Proximity (and visibility)**
- **Connectivity**
- **Diversity**
- **Equity**

 Nordic Council  
of Ministers

Policy Brief

**Nordic Cities:  
Green, Resilient, Healthy**

Fostering national policies and  
initiatives for urban green space





## 2nd World Forum on Urban Forests

Washington DC, 2023

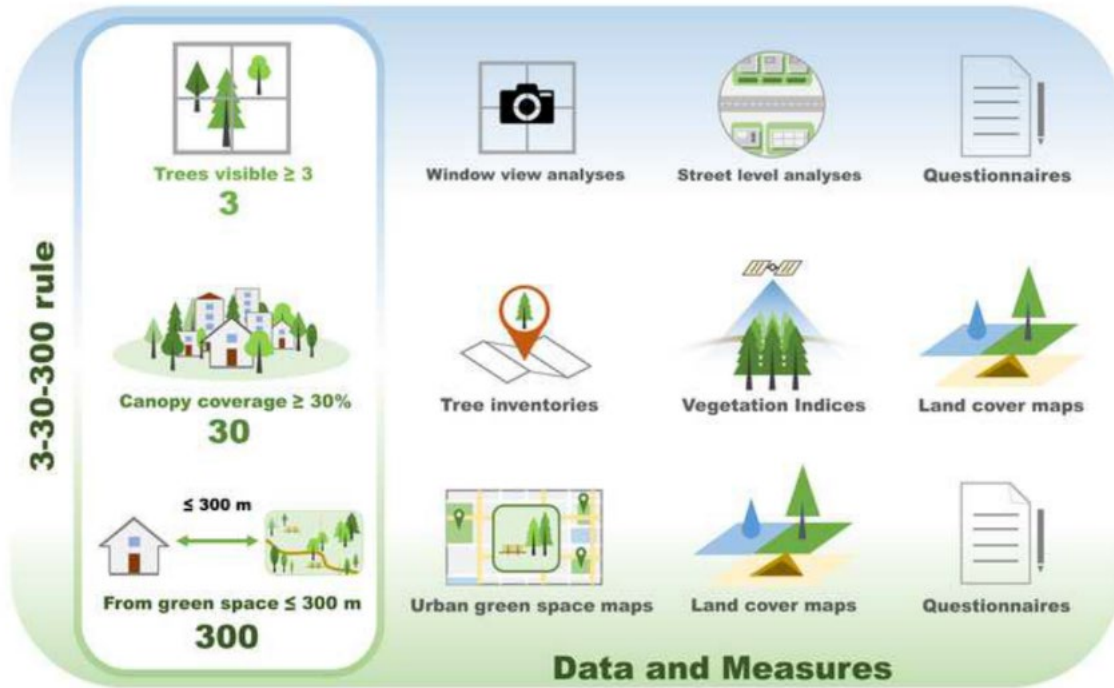
UBC Alumni Magazine, 2022



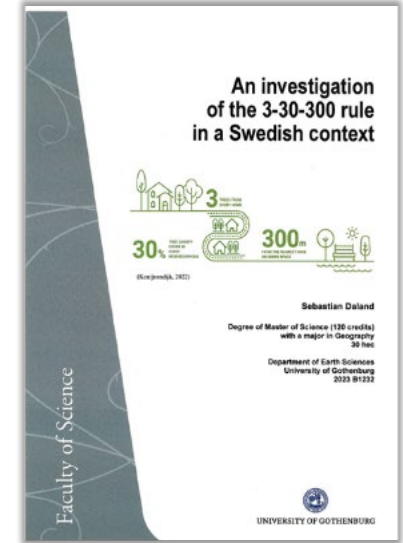
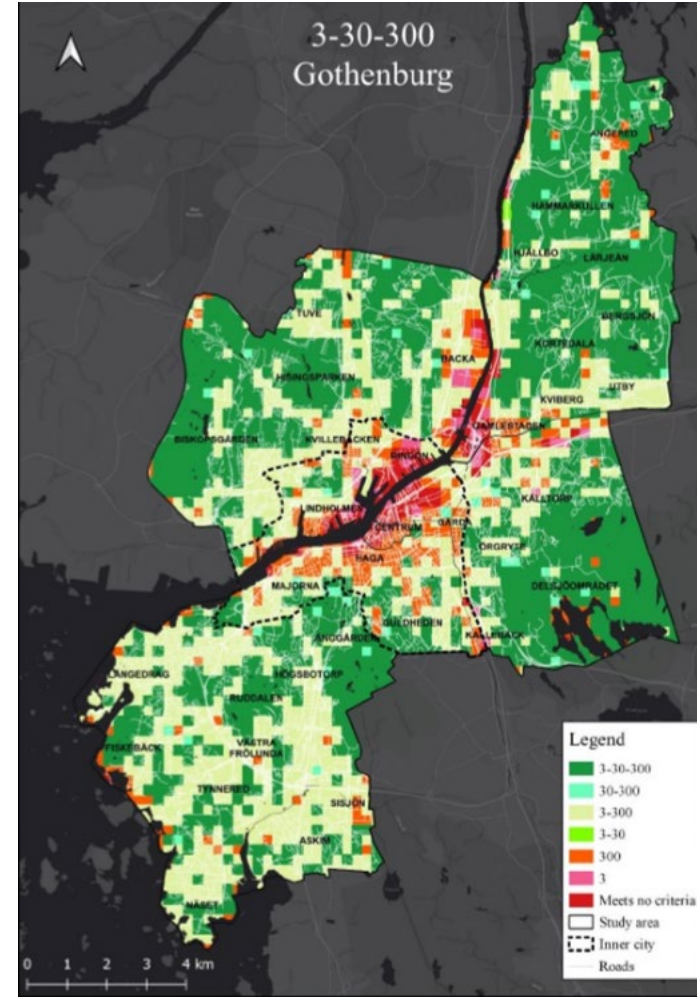


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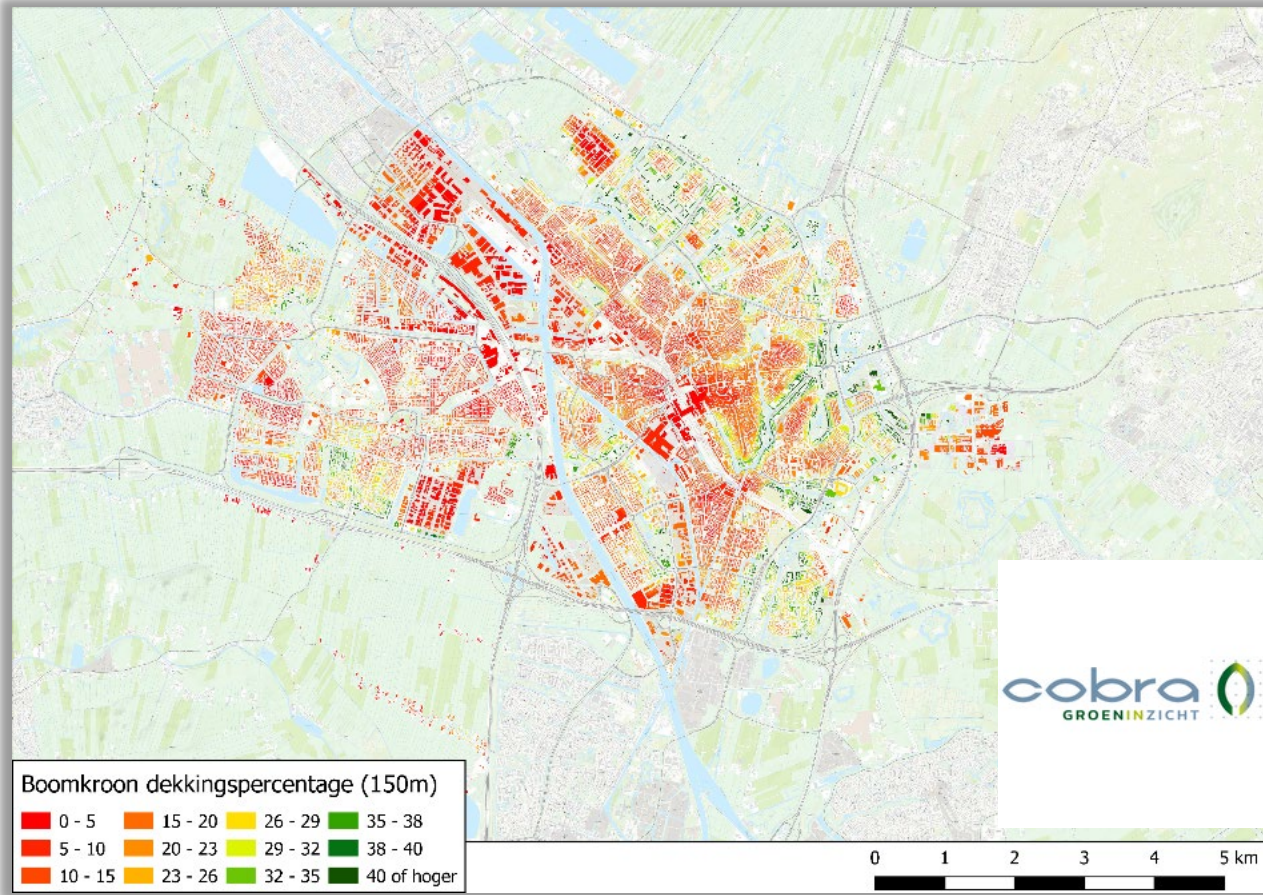
Browning et al. (in review)





# 2nd World Forum on Urban Forests

Washington DC, 2023



f t i o a v

Inscription Connexion Je m'abonne

# COSMOPOLITAN

Mode Beauté Culture Lifestyle People Spécial Glow ...

Cosmopolitan > Psycho > Actu psycho

## Une étude explique la règle imparable des 3-30-300 pour avoir plus de chances d'être heureux 24 heures sur 24

PAR SARAH CARNIER MIS À JOUR LE 13/01/2023 À 17:12





## 2nd World Forum on Urban Forests

Washington DC, 2023

The Guardian

The study also found that more tree and grass cover in a neighbourhood was associated with less demand for GP and hospital visits. This was especially true of cities and accords with [wider evidence](#) on green space in urban areas.

The World Health Organization already recommends that we have access to [0.5 hectares \(1.2 acres\) of public green space](#), about [two-thirds the size of a football pitch](#), within 300 metres of our homes.

The urban forester [Cecil Konijnendijk](#) recently suggested a [3-30-300 rule of thumb](#) for urban forestry and urban greening - every citizen should be able to see at least three trees (of a decent size) from their home, have 30% tree-canopy cover in their neighbourhood and not live more than 300 metres from a park or green space.

Pollutionwatch  
Air pollution

### Why a Belgian insurer studies the impact of air pollution on health

Mutualités Libres says improving air quality ensures sustainability of the social security system

Gary Fuller

@drgaryfuller

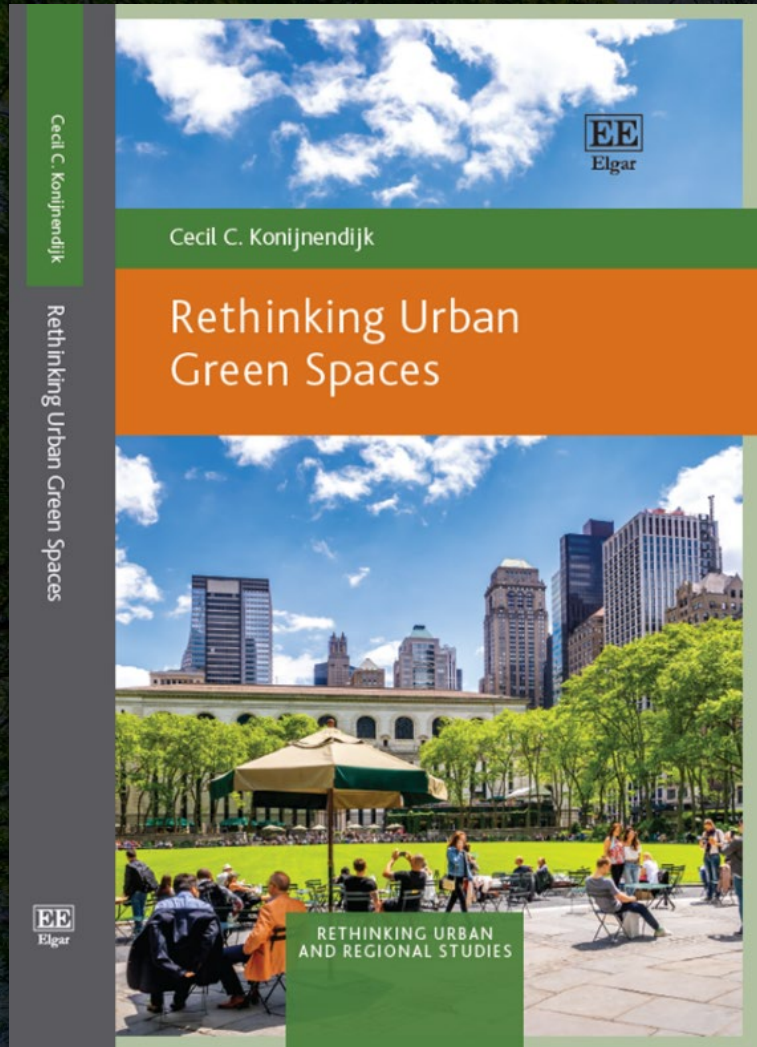
Fri 22 Sep 2023 07:00 CEST



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## Table of contents

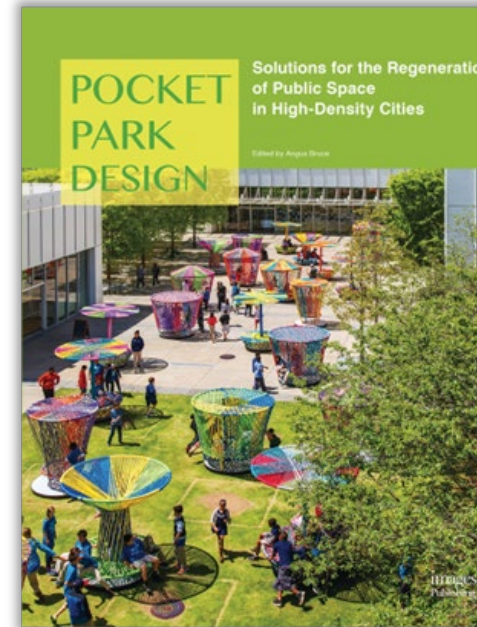
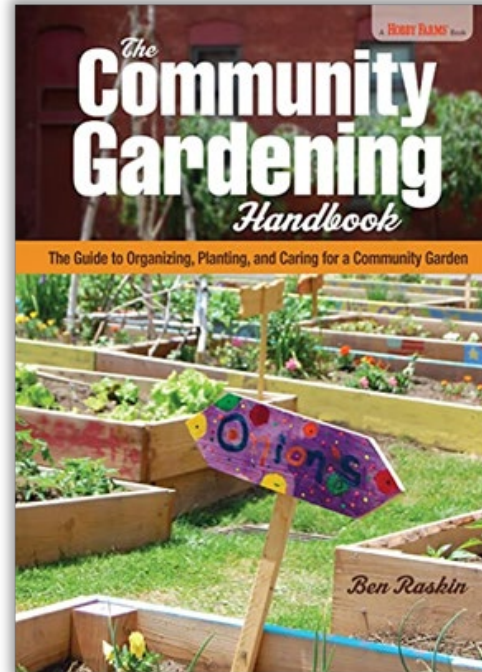
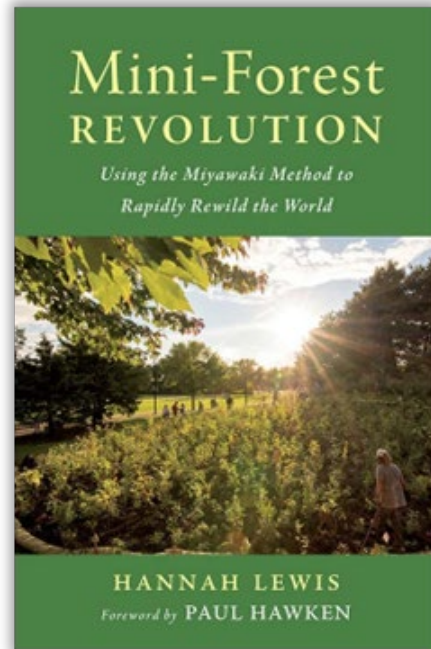
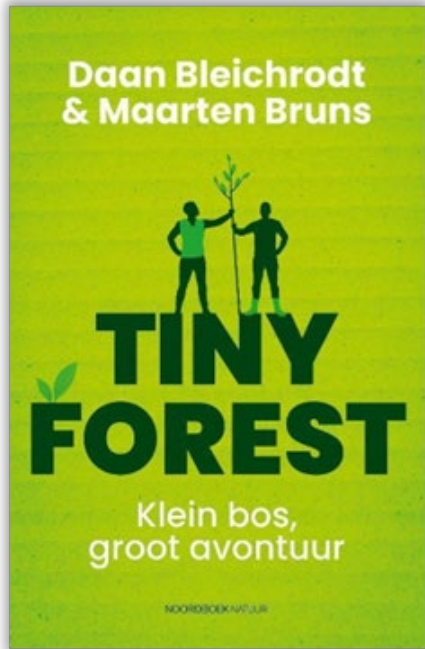
Preface

1. Urban Green Space: Why Rethinking is Needed
2. Urban Green Spaces Until Today
3. Urban Green Space Use in Transition
4. Design and Transformation of Green Spaces
5. Green Space Management for Today and Tomorrow
6. Changing Governance of Green Spaces
7. Planning and Integration of Urban Green Spaces
8. Securing and Diversifying Funding for Green Spaces
9. Shifts in Urban Green Space Narratives
10. Perspective: Streetwoods, Urban Groves and More Rethinking of Urban Green Spaces



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# BOSK



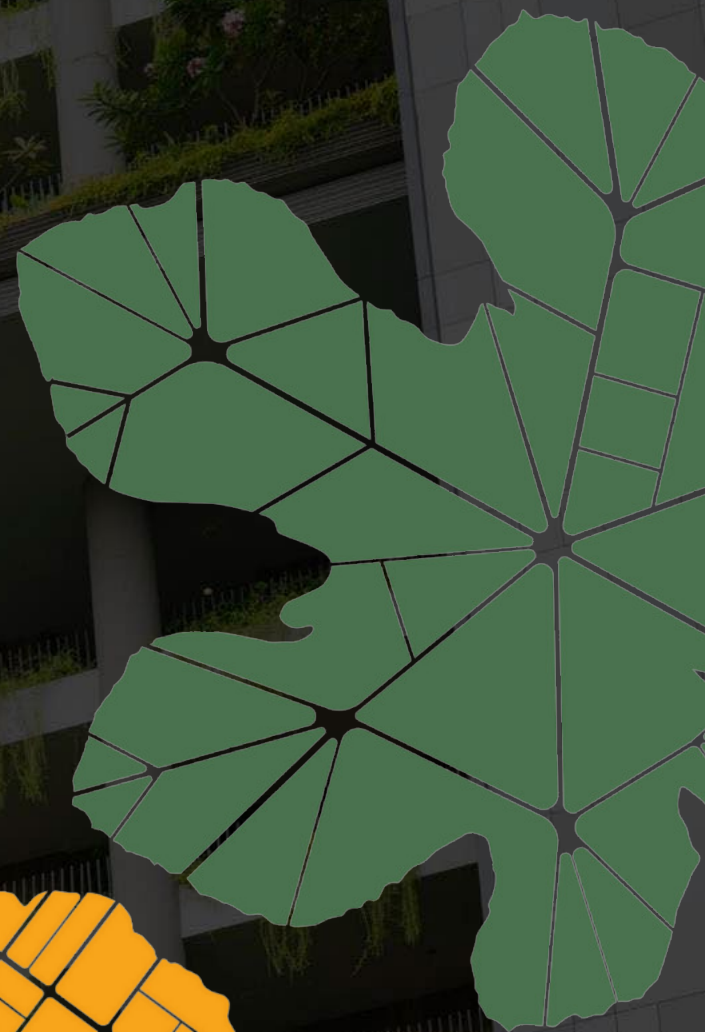
<https://lc.nl/friesland/leeuwarden/Het-stationsplein-in-Leeuwarden-kleurt-groen.-Bekijk-hier-het-wandelende-bos-Bosk-vanuit-de-lucht-27665133.html>



# Three Concepts for Building Connections and Stewardship

Neighbourhood – Street – Home

Community – Neighbours – Family





# Urban Groves

- Inspired by the sacred and academic groves of the past
- Urban woods with meaning
- Special wooded places, community connection
- Spirituality and learning
- Community, commemoration, celebration
- Neighbourhood and community focus
- Link to the '300' (and the '30') component





## Streetwoods

- Your street can be a forest
- Public and private trees
- Fading boundaries
- Community stewardship and pride
- Municipal and not-for-profit support
- Element of friendly competition ('streets in leaf' rather than 'communities in bloom')
- Street, block and neighbour focus
- Link to the '30' (and the '3') component





# Doorstep Trees

- It starts with a tree – at our doorstep, in our garden, along our street
- We do a bit more for our tree
- We follow our tree and its visitors throughout the year
- The tree becomes part of our family
- Individual home and family focus
- Link to the '3' (and the '30') component

Illustration credit: Ann Van Herzele

**A TREE ON YOUR DOORSTEP,  
A FOREST IN YOUR MIND**





## Re-entanglement with Trees

- From city and neighbourhood to individual homes, we need to bring trees back into our lives.
- Planning principles and guidelines such as 3:30:300 can help, also across scales.
- For building connection and stewardship, we need to create meaningful tree places
- *Urban Groves, Streetwoods, and Doorstep Trees* can help in re-entanglement between people and trees



Photo: Johan Östberg





# Thank you

**Cecil Konijnendijk**  
***Nature Based Solutions Institute***

 **cecil@nbsi.eu**



Food and Agriculture  
Organization of the  
United Nations



Arbor Day  
Foundation





# **2nd** **World** **Forum on** **Urban** **Forests**

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# 2nd World Forum on Urban Forests

Washington DC, 2023

Session 2.2: Planning, designing and managing urban forests to make them more accessible and inclusive

## Why civic stewardship matters: Insights from 15 years of studying local environmental care and action



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### Presented by

Erika S. Svendsen (presenter), Lindsay K. Campbell and Michelle L. Johnson  
USDA Forest Service, Northern Research Station





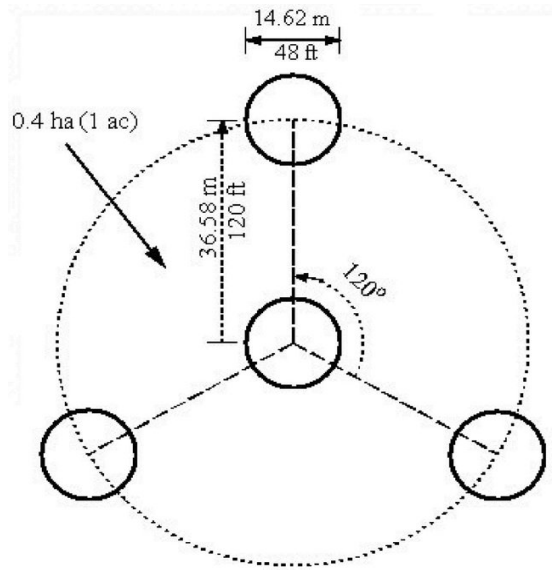
Do you have a “go to” resource to identify partners who are working across your region?





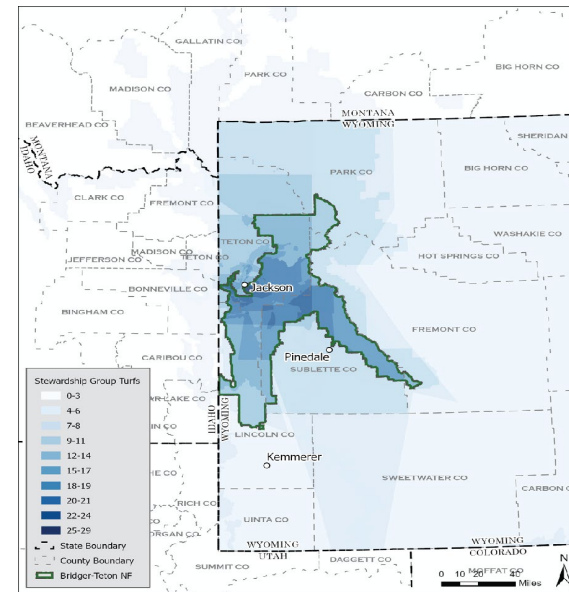
# Making partnerships visible with the same care & precision that we monitor and care for our natural resources

Forest Inventory and Analysis



(Standard FIA plot design)

Stewardship Mapping and  
Assessment Project



(Bridger-Teton National Forest STEW-MAP 2021)



# What can you learn from tracking partners and activities?

- Who is participating?
- How are they participating?
- Where are they participating?
- What is their effect on the environment and communities?
- Where are there gaps in the landscape?





# Stewardship Data At Your Fingertips



## Hawai'i STEW-MAP Phase II (O'ahu) Visualizing mālama 'āina

### How To Navigate This Dashboard

Aloha! Click here to see an overview of the [Stewardship Mapping and Assessment Project](#). For an in-depth exploration, see the full interactive [STEW-MAP](#). (You can also view the [Hawai'i Island Dashboard](#).)

Expand any window for full view

**Map:**  
Click on the map to see the groups working in...

### Stewardship Groups (in alphabetical order)

Contact Email and Website where available

#### 808 Cleanups

Honolulu HI  
Contact: [808cleanups@gmail.com](mailto:808cleanups@gmail.com)  
Website: <https://www.808cleanups.org>

#### AARP

Honolulu HI  
Contact: [jwooley@aarp.org](mailto:jwooley@aarp.org)  
Website: <https://www.AARP.org>

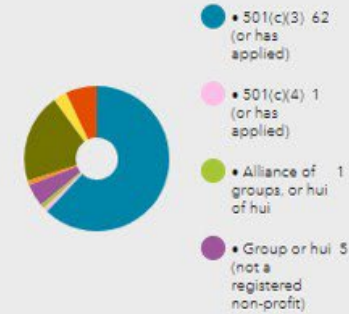
#### 'Ahahui Mālama i ka Lōkahi

Kailua HI  
Contact: [lehuakona1@gmail.com](mailto:lehuakona1@gmail.com)  
Website: <https://www.ahahui.net>



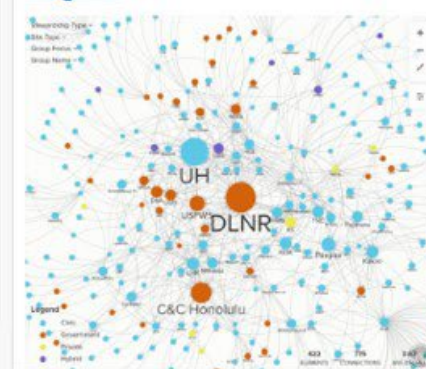
Earthstar Geographics | Dacks, R., H. McMillen, K. Kahaleua. (2021). STEW-MAP O'ahu: Survey Results of the St... Powered by Esri

### Types of Groups



### O'ahu Collaboration Networks

[Explore the Interactive Network Diagram](#)



### Primary Site Types



Stewardship Types

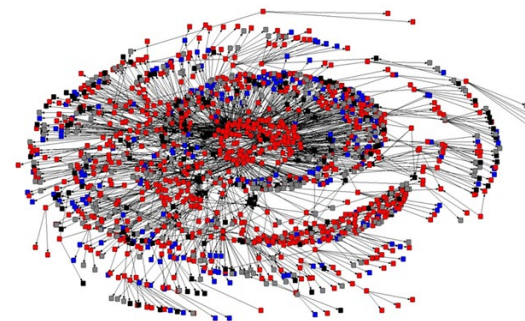
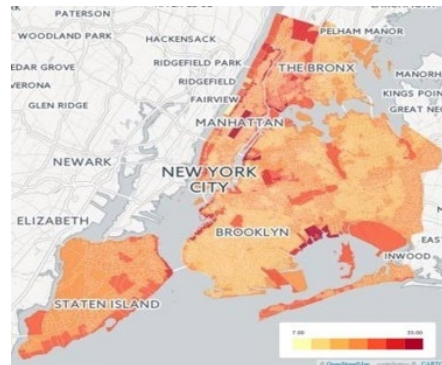
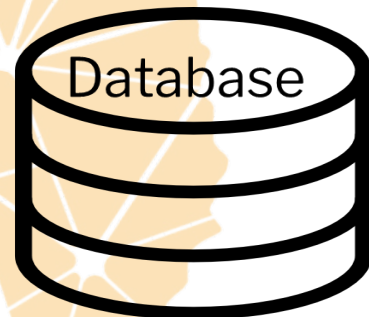
Sites Stewarded

Services Provided



## The STEW-MAP Approach

- Survey and interview-based methodology
- Measures how, where, and why civic groups and partners care for local ecosystems
- Began in New York City in 2007 – now in more than 15 locations





# Lessons Learned from Many Parts of the World





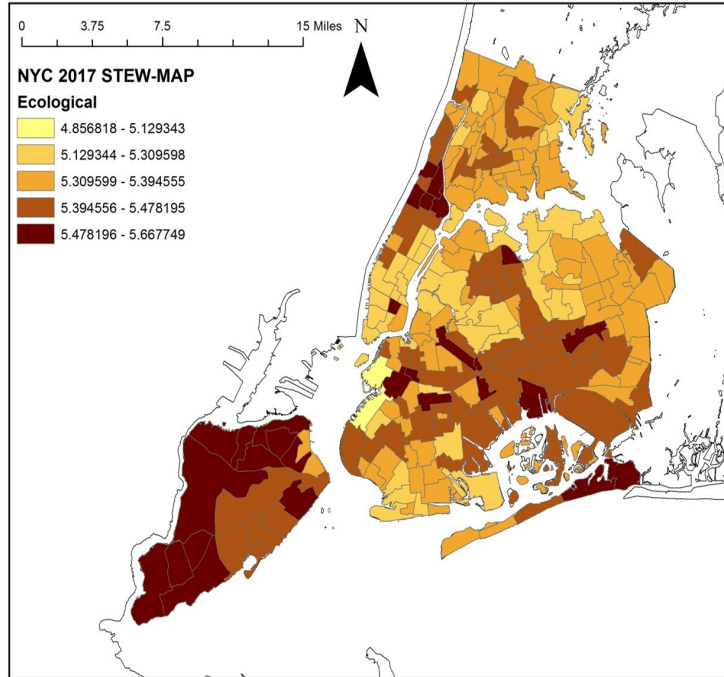


# Stewardship capacity exists across the spectrum from grassroots to professionalized groups

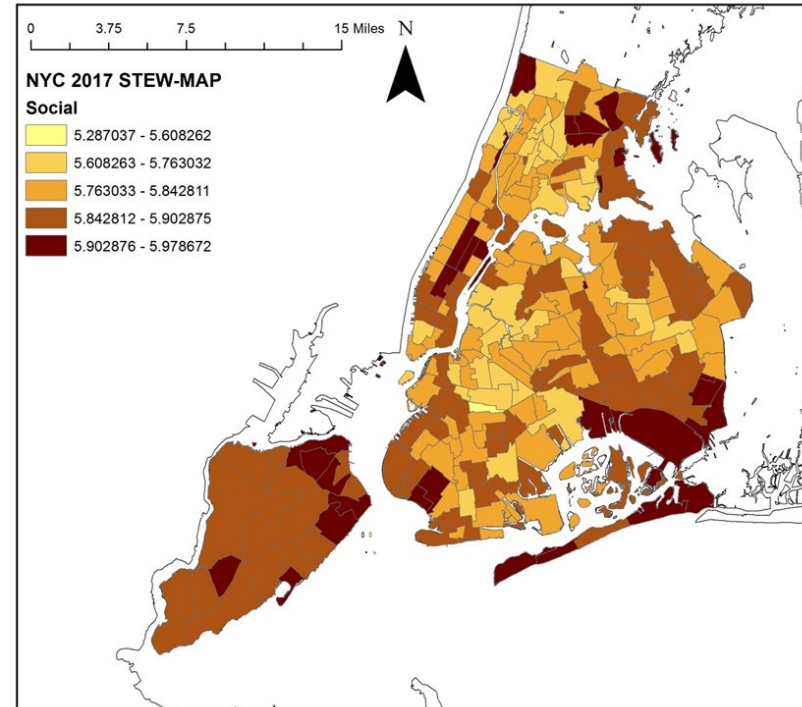




# Stewards are agents of change, socially and ecologically

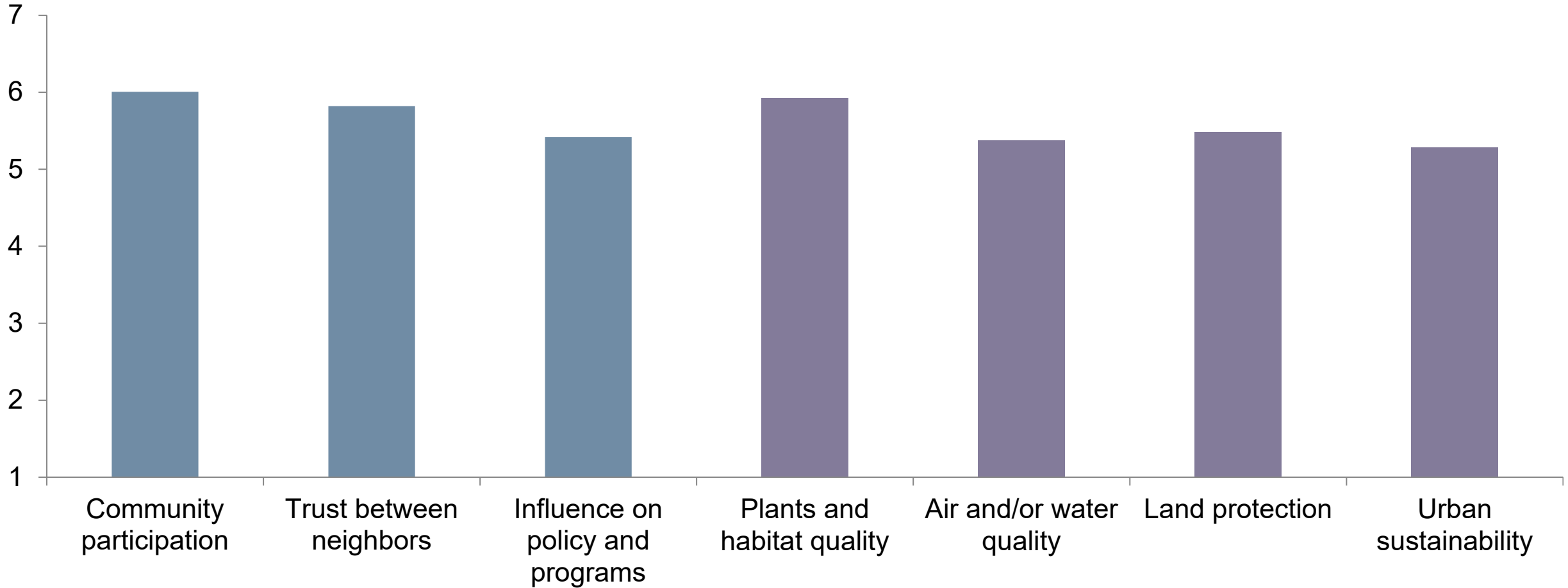


Ecological Outcomes



Social Outcomes

# Perceived Outcomes



**Social**

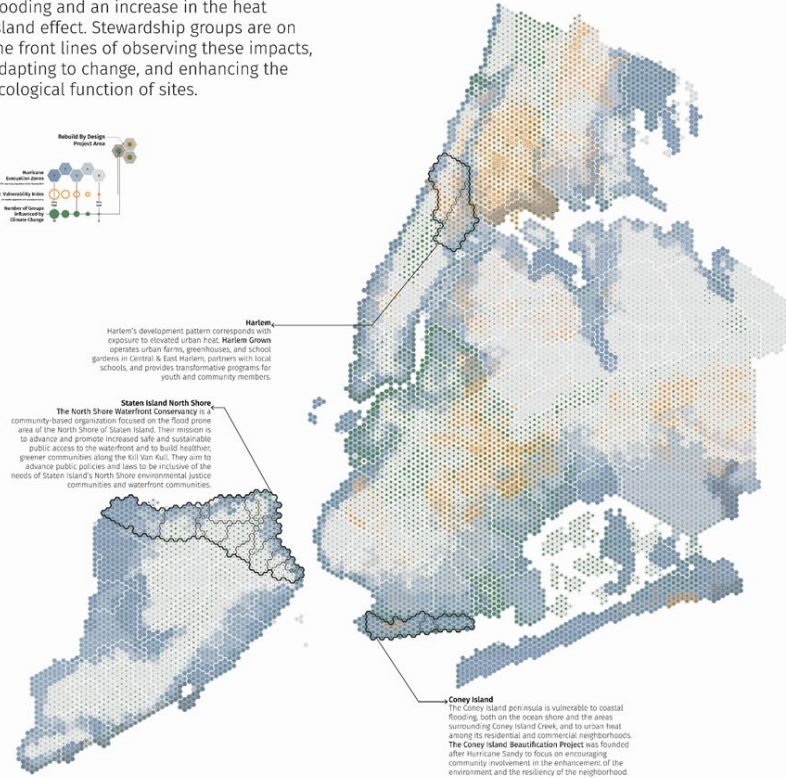
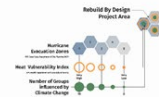
**Environmental**



# Stewards respond to disturbance and foster social-ecological resilience.

## CLIMATE CHANGE

Our changing climate has multiple impacts, including more intense coastal flooding and an increase in the heat island effect. Stewardship groups are on the front lines of observing these impacts, adapting to change, and enhancing the ecological function of sites.



**Harlem**  
Harlem's development pattern corresponds with exposure to elevated urban heat. Harlem Green operates urban farms, greenhouses, and school gardens in Central & East Harlem, partners with local schools, and provides transformative programs for youth and community members.

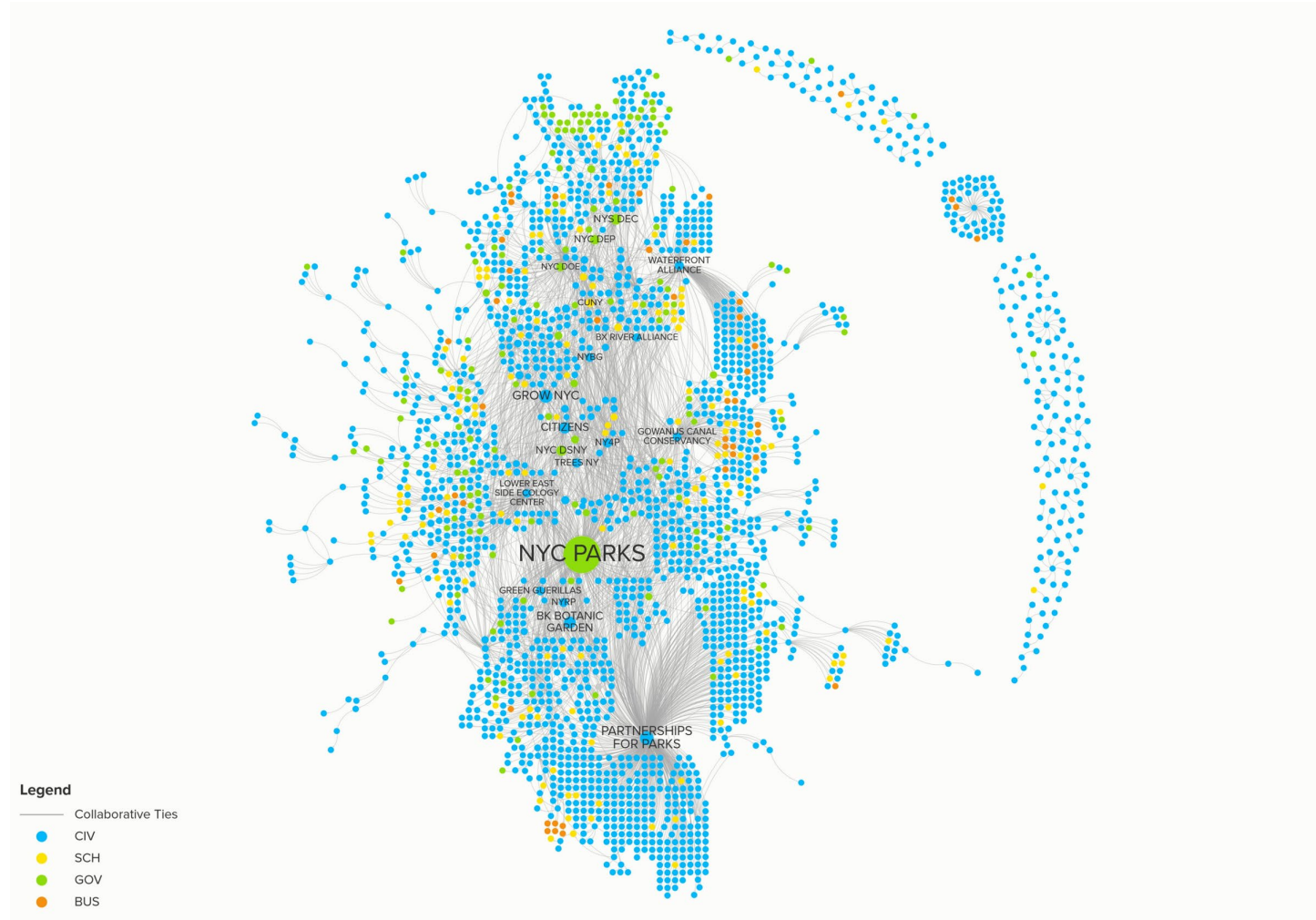
**Staten Island North Shore**  
The North Shore Waterfront Conservancy is a community-based organization focused on the flood-prone area of the North Shore of Staten Island. Their mission is to advance and promote increased safe and sustainable public access to the waterfront and to build healthier, greener communities along the Kill Van Kull. They aim to advance public policies and laws to be inclusive of the needs of Staten Island's North Shore environmental justice communities and waterfront communities.

**Coney Island**  
The Coney Island peninsula is vulnerable to coastal flooding, both on the ocean shore and the areas surrounding Coney Island Creek, and to urban heat among its residential and commercial neighborhoods. The Coney Island Beautification Project was founded after Hurricane Sandy to focus on encouraging community involvement in the enhancement of the environment and the resiliency of the neighborhood.





# Stewards operate through collaborative networks





# Synthesis and Application for Urban Forestry

*Supporting human capacity:* Whatever the desired ecological outcome these ends require human capacity and care.

*Network building* is needed turn insights from stewardship mapping into action.

*Strengthening knowledge exchange:* among a diverse community of stewards and land managers is crucial success.



And a special thanks to my co-authors....

Lindsay K. Campbell (lead author), Michelle L. Johnson, Dexter H. Locke, Nancy Sonti, J. Morgan Grove, Michele Romolini, Heather McMillen, Rachel Dacks, Bryce DuBois, Jesse Sayles, Tischa Muñoz-Erickson, Laura Landau, Lorien Jasny, Krista Heinlen, Maria Arroyave, Camille McCarthy, Dave Bloniarz, Brian A. Goldberg, Gerald P. Bauer, Travis Warziniack





# Thank you

**Erika Svendsen USDA Forest Service**

**erika.svendsen@ usda.gov**

 **[www.fs.usda.gov/research/projects/stew-map](http://www.fs.usda.gov/research/projects/stew-map)**



Food and Agriculture  
Organization of the  
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# **2nd** **World** **Forum on** **Urban** **Forests**

**2023**



**World Forum on  
Urban Forests**



# 2nd World Forum on Urban Forests

Washington DC, 2023

## Planning for Equitable Urban Tree Cover within Urban Forest Management Plans: *A Case for Environmental Justice*



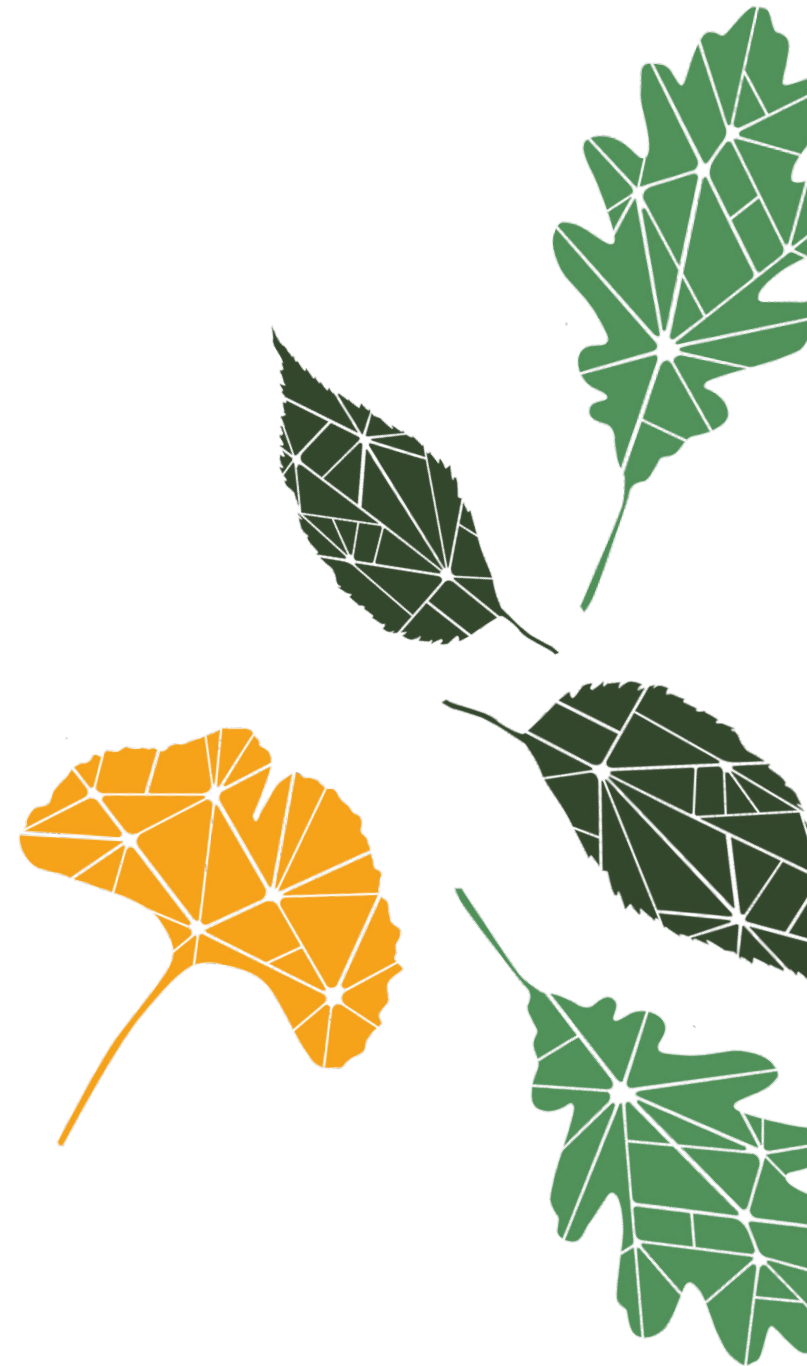
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### Presented by

Joelle McNeil, PhD Candidate,  
School of Planning, University of Waterloo, ON

Dr. David J. Nowak, (retired), Senior Scientist, U.S.D.A. Forest Service, i-Tree  
Project, Petersburg, New York

John McNeil, R.P.F., Principal, McNeil Urban Forestry Inc.,  
Burlington, ON



# About this Talk

## 1. Tree Equity at City of Waterloo

- Waterloo Urban Forest Management Strategy (UFMS)

## 2. Distribution of urban tree cover

- Partnership with the University of Waterloo (UW), School of Planning

## 3. 3-Pillar Framework of Environmental Justice

- Procedural
- Distributional
- Recognition



## **The Project: Waterloo's UFMS**

Project Objective: “Review and analyze existing development standards and practices with consideration given but not limited to: Equitable distribution of the urban forest across the City of Waterloo”





**2nd World Forum on  
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Washington DC, 2023

Canada's Urban Forests  
**Bringing the Canopy  
to All** September 2022



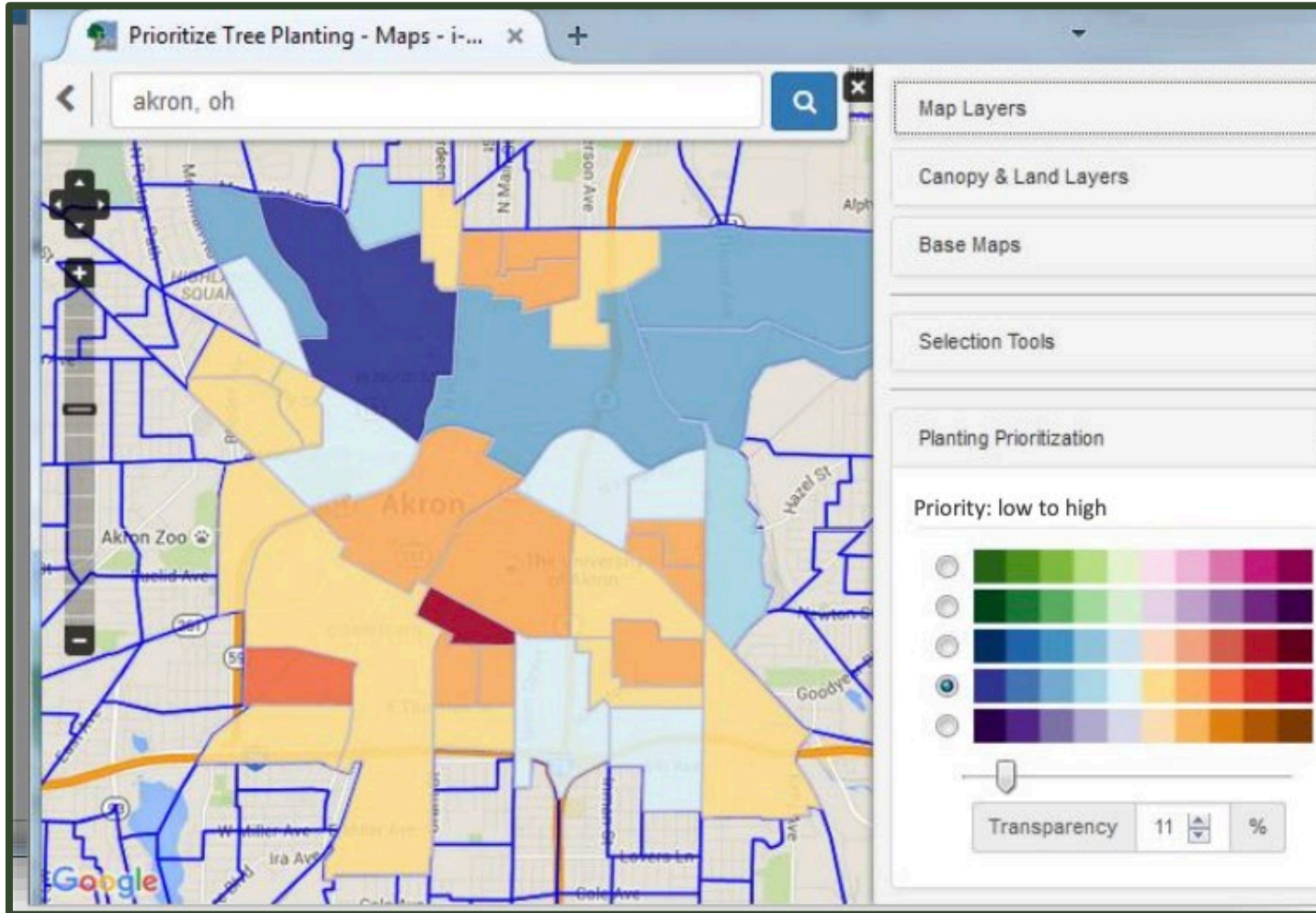
# Interdisciplinary Collaboration

UW Planning Student Term Project:

- analyze i-Tree canopy data + population data
- produce neighborhood map + recommendations



# Tree Planting Prioritization Map



## TPPM Indicators:

1. Geographic Location
2. Urban Tree Cover
3. Impervious Cover
4. Population Density
5. Income
6. Race/ethnicity



# Inequality

Unequal access to opportunities



With apologies to Shel Silverstein from @lunchbreak

2019 Design In Tech Report | Addressing Imbalance

# Equity

Custom tools that identify and address inequality



With apologies to Shel Silverstein from @lunchbreak

2019 Design In Tech Report | Addressing Imbalance

# Equality?

Evenly distributed tools and assistance

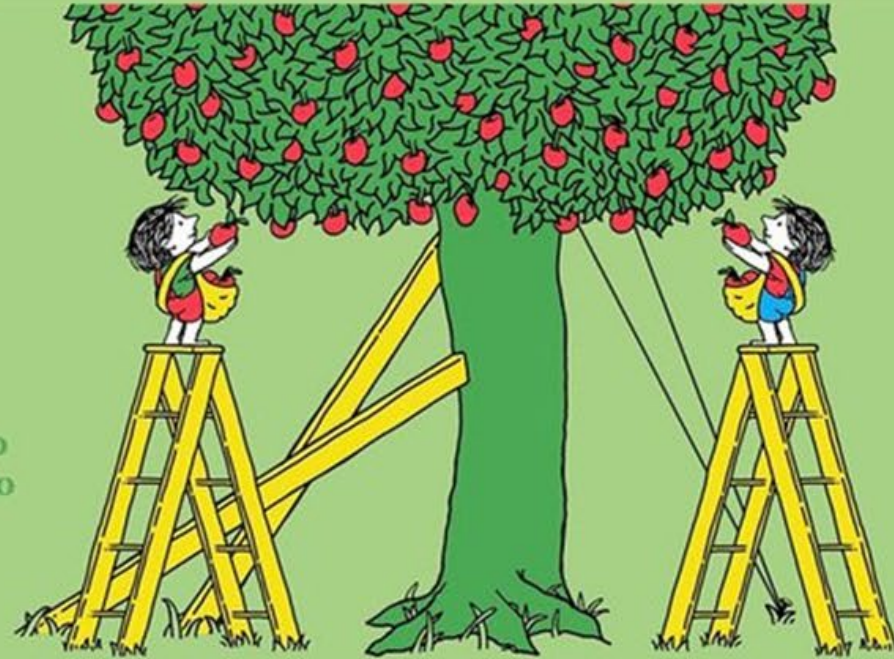


With apologies to Shel Silverstein from @lunchbreak

2019 Design In Tech Report | Addressing Imbalance

# Justice

Fixing the system to offer equal access to both tools and opportunities



With apologies to Shel Silverstein from @lunchbreak

2019 Design In Tech Report | Addressing Imbalance



# 3-Pillar Framework



recognitio  
n justice



procedura  
l justice



distributio  
n justice



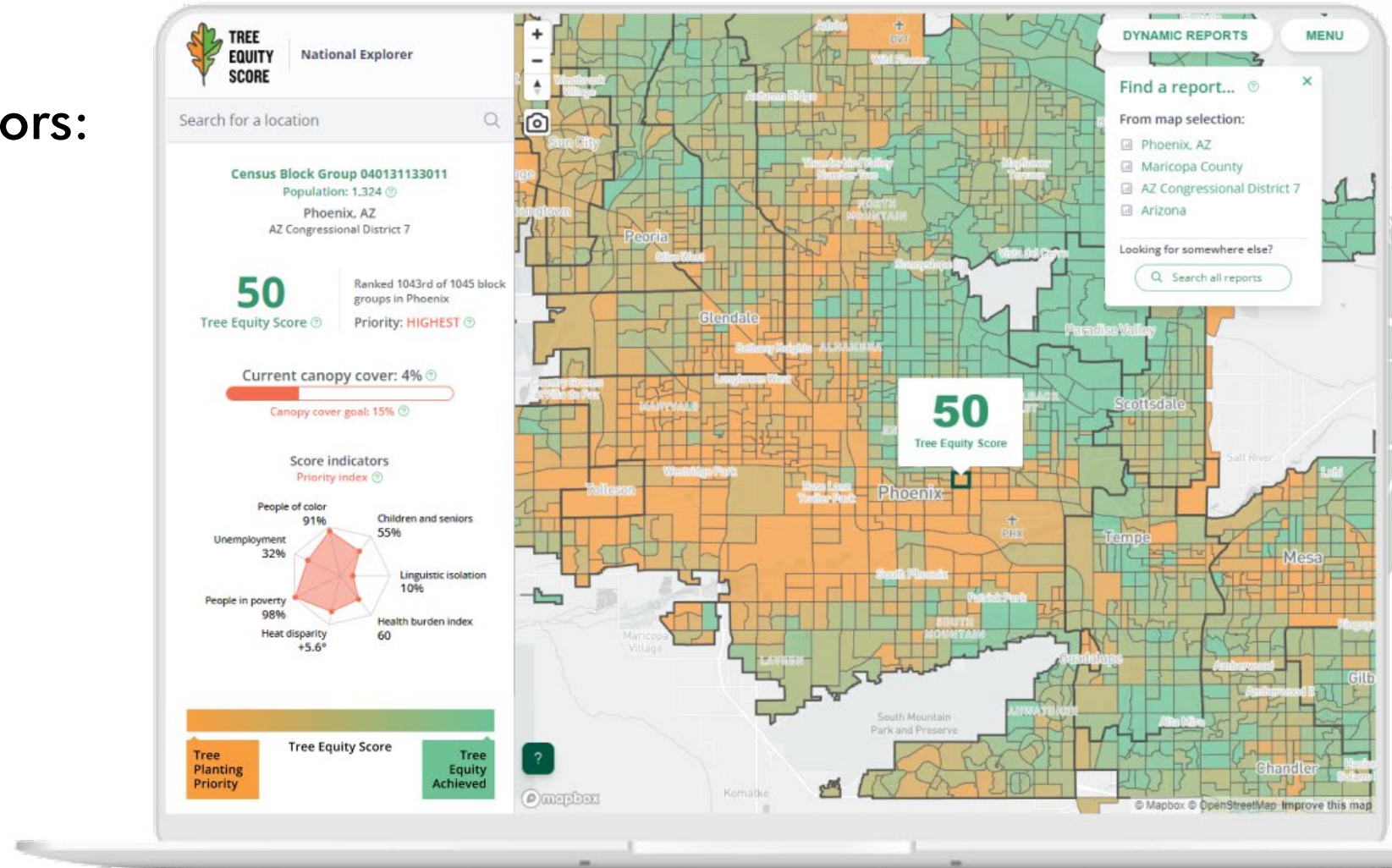
Environmental Justice



# Distribution Justice

## Tree Equity Score Indicators:

1. Geographic Location
2. Urban Tree Cover
3. Impervious Cover
4. Population Density
5. Income
6. Race/ethnicity
7. Climate
8. Health



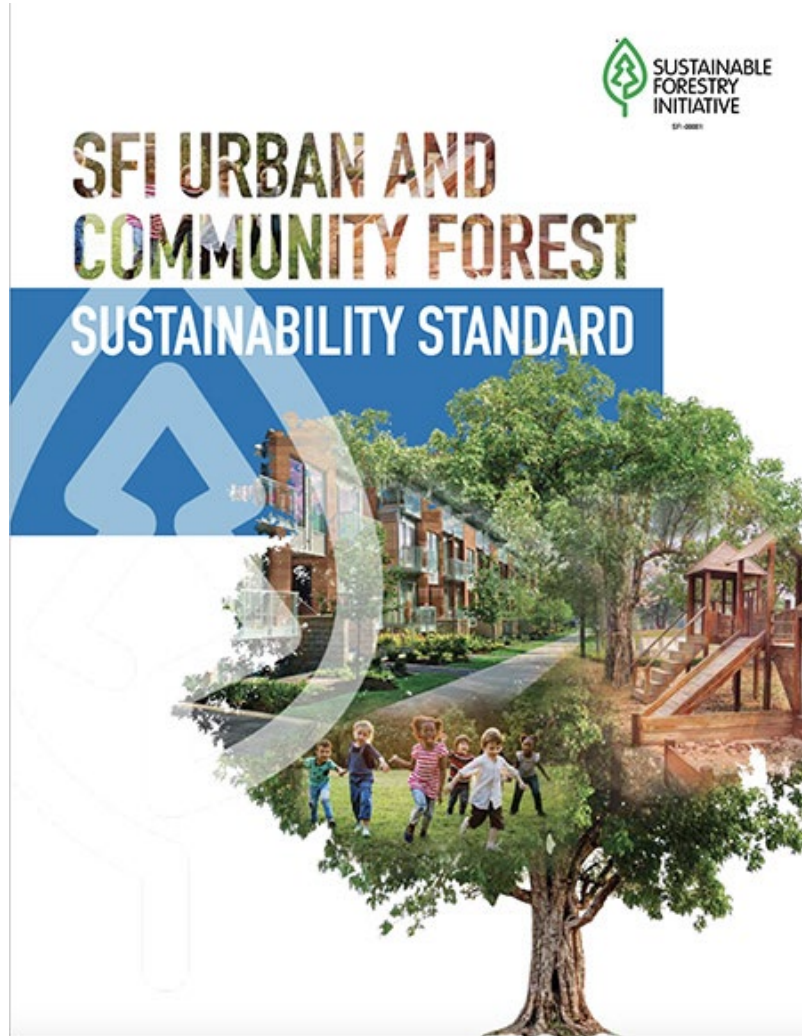


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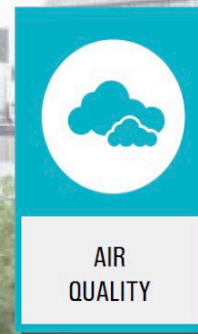
# Procedural Justice



# TORONTO

# GREEN STANDARD

v4  
2022



AIR  
QUALITY



BUILDING ENERGY,  
EMISSIONS &  
RESILIENCE



WATER QUALITY  
&  
EFFICIENCY



ECOLOGY &  
BIODIVERSITY



WASTE & THE  
CIRCULAR  
ECONOMY

SUSTAINABILITY REQUIREMENTS FOR  
NEW DEVELOPMENT IN TORONTO

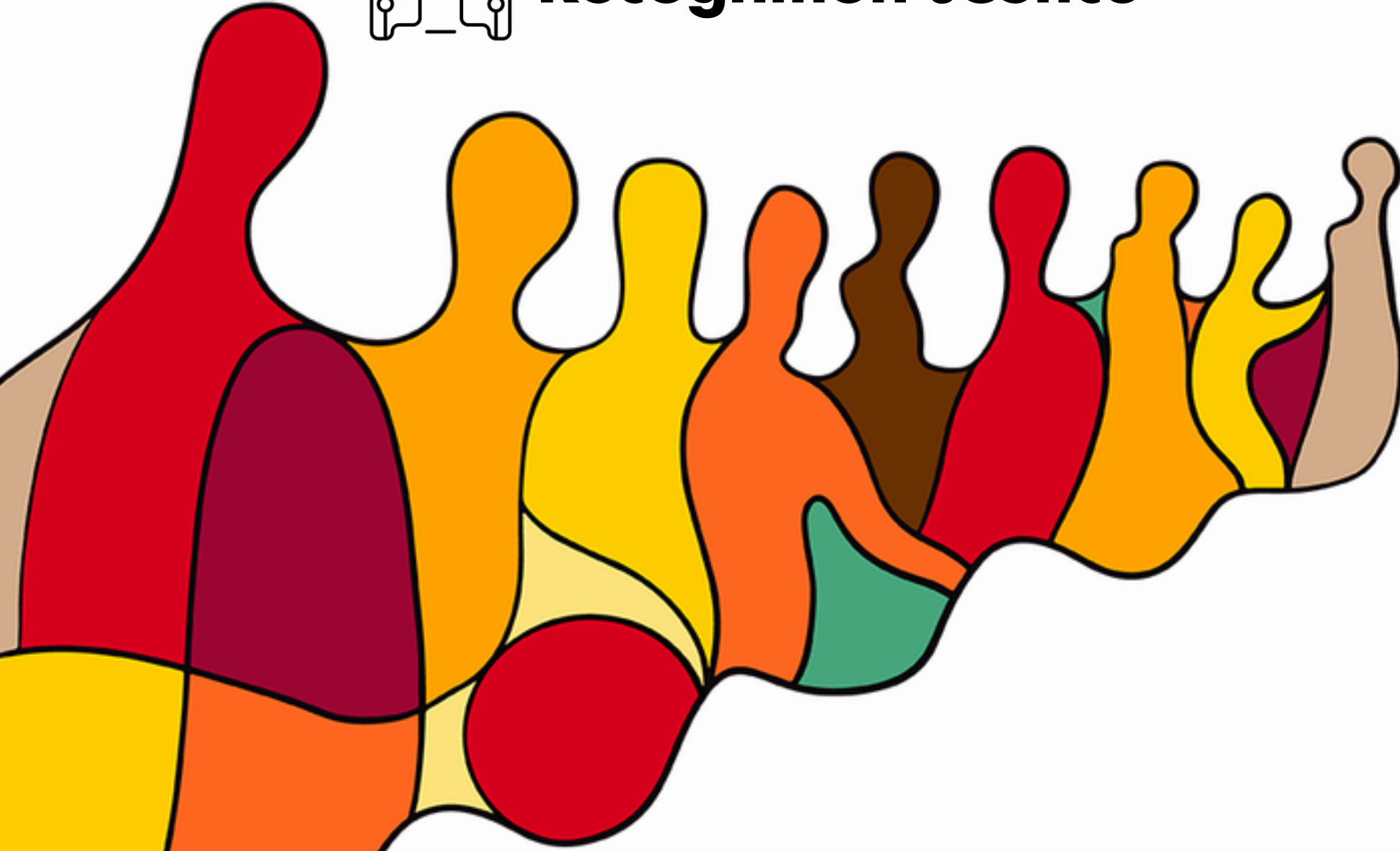


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Washington DC, 2023



# Recognition Justice



# Conclusions



recognitio  
n justice



procedura  
l justice



distributio  
n justice



**Environmental Justice**



# Thank you

**Joelle McNeil, David Nowak, John McNeil**

✉ [jcmcneil@uwaterloo.ca](mailto:jcmcneil@uwaterloo.ca)

✉ [john@mcneilurbanforestry.ca](mailto:john@mcneilurbanforestry.ca)



Food and Agriculture  
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Washington DC, 2023

## Urban Forest Ecosystem Services and Stewardship: Case Studies from Mexico and Colombia

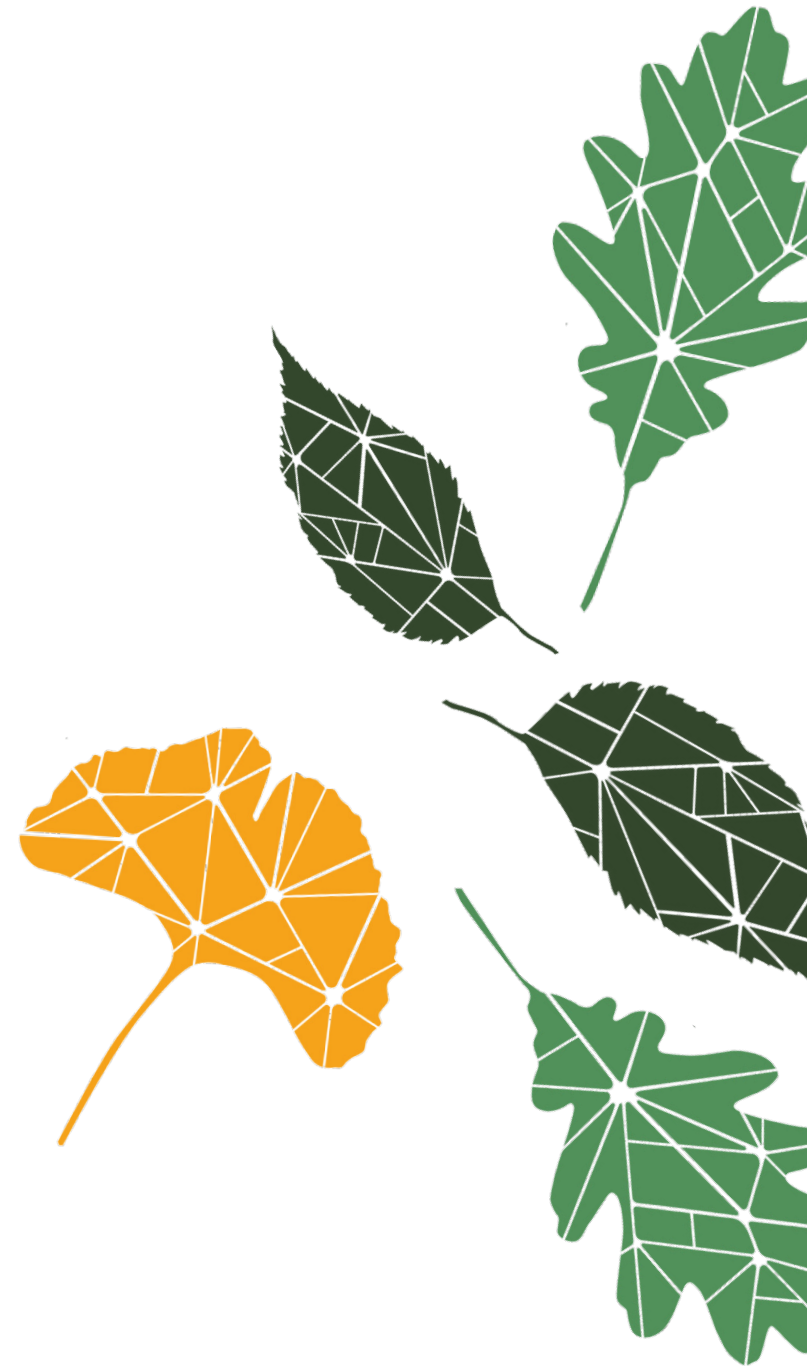


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### Presented by

María Arroyave, Arantxa Zamora  
& Fabiola López

U.S. Forest Service – International Programs





# Introduction

→ i-Tree

→ STEW-MAP





# i-Tree Tools

- Tools for an integral assessment of urban forests
- For international use:



- i-Tree Canopy
- i-Tree Eco
- My Tree
- i-Tree Database



Information useful for:

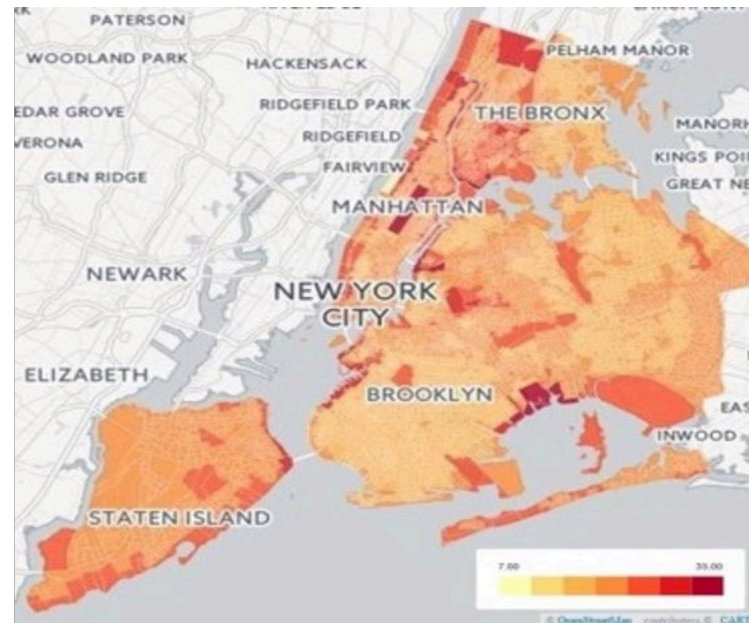
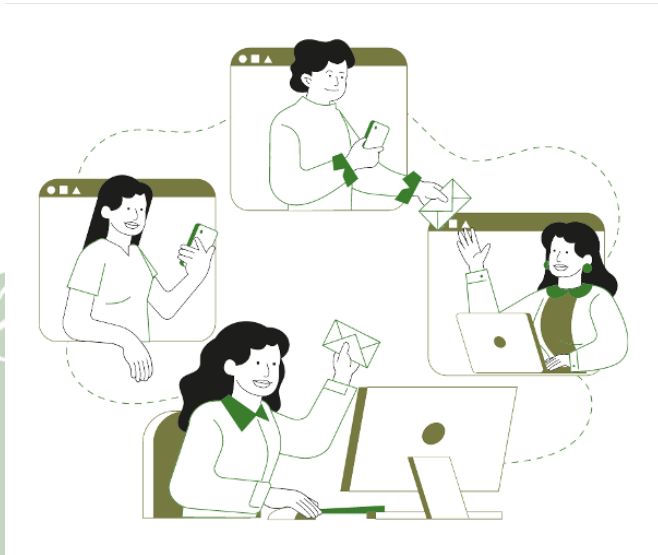
- Strategic management of urban trees
- Promote the value of trees and community engagement





# Stewardship Mapping and Assessment Project (STEW-MAP)

- Survey and interview-based methodology
- Began in New York City in 2007 – Now in more than 15 locations
- Measures how, where, and why civic groups and partners care for local ecosystems



## **i-Tree and STEW-MAP**

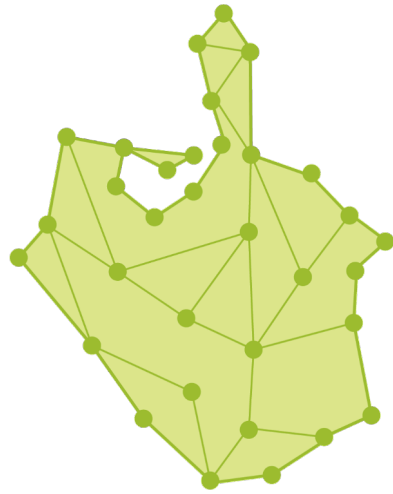
How We Can Integrate These Tools To  
Find Urban Oasis: Mexico Case





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## STEW-MAP La Paz

Conectando a la comunidad con la naturaleza



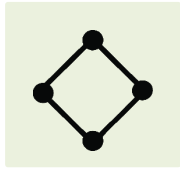


# STEW-MAP Survey La Paz

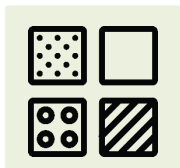
Create a spatial directory that displays:



Civil groups, collectives, NGOs,  
and government organizations



Work areas



Types of stewardship activities  
Interests



Impacts

STEW-MAP La Paz: conectando a la comunidad con la naturaleza

Bienvenido a la encuesta STEW-MAP La Paz: conectando a la  
comunidad con la naturaleza



STEW-MAP es una herramienta que busca la colaboración entre actores para cuidar el ambiente local, y se ha desarrollado en 15 regiones a nivel mundial, incluidas ciudades latinoamericanas como San Juan, Puerto Rico; Valledupar y Medellín, Colombia; y Lima, Perú, para obtener más información puede visitar: <https://www.fs.usda.gov/research/projects/stew-map>.

La Sociedad de Historia Natural Niparajá, con el apoyo de investigadores del Servicio Forestal de los Estados Unidos, estamos desarrollando esta herramienta en La Paz, a través del proyecto STEW-MAP La Paz: conectando a la comunidad con la naturaleza, con el podremos conocer las acciones que se realizan para cuidar el ambiente local en la ciudad de La Paz, quiénes las realizan, y dónde; con el objetivo es crear vínculos y promover acciones para el bien comunitario y de la naturaleza.

Con este objetivo, si usted realiza acciones en beneficio de la naturaleza, le invitamos a esta encuesta. Para responder esta encuesta, no es necesario que las actividades sean su enfoque principal, ya que pueden ser guardianes de la naturaleza de diversas maneras o atender otros temas principales.

Si prefiere responder las preguntas de la encuesta STEW-MAP de manera presencial o vía telefónica, por favor contacte a: Nicole Harmelin [nharmelin@niparaja.org](mailto:nharmelin@niparaja.org)

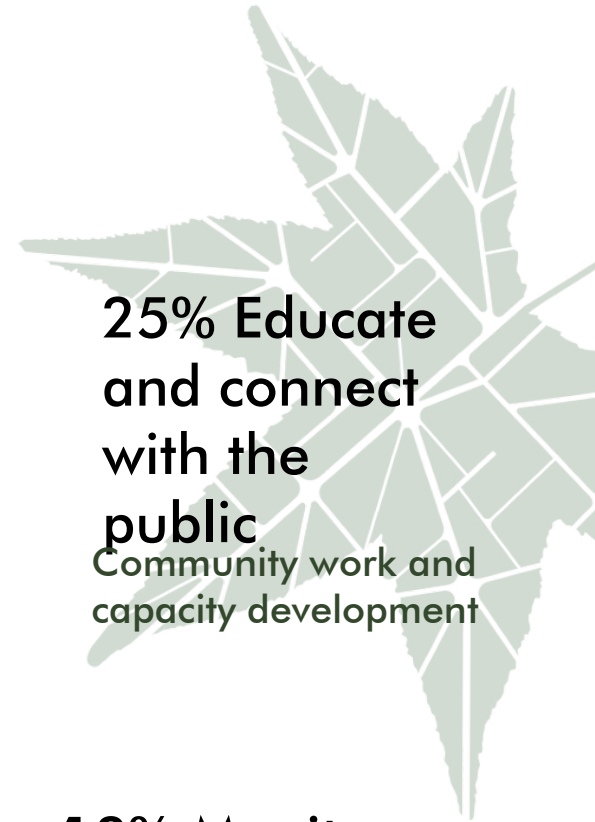
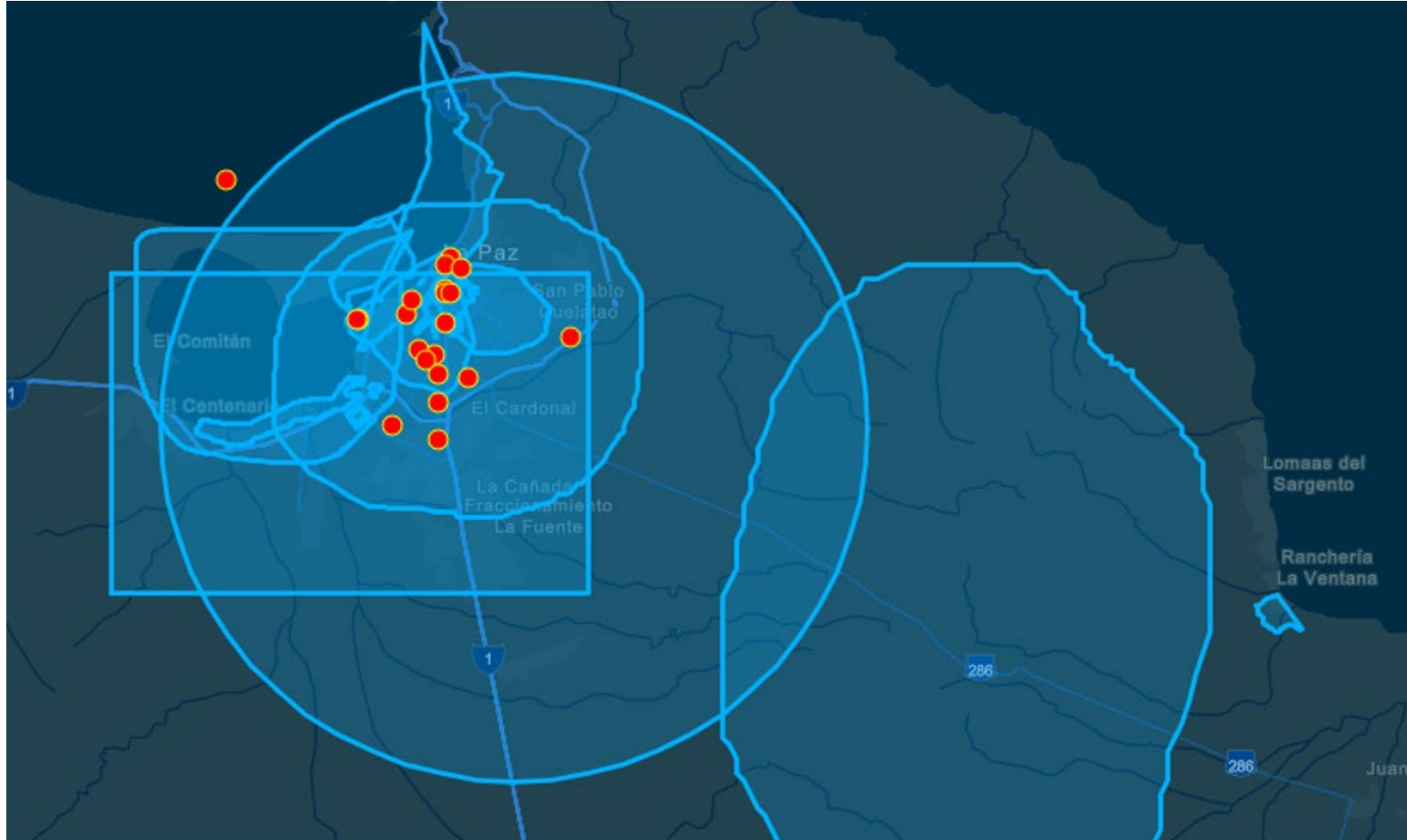
¡Gracias por su participación!



SCAN ME



# Areas of Stewardship



**25% Educate  
and connect  
with the  
public**  
Community work and  
capacity development

**18% Monitor**

**18% Advocacy**

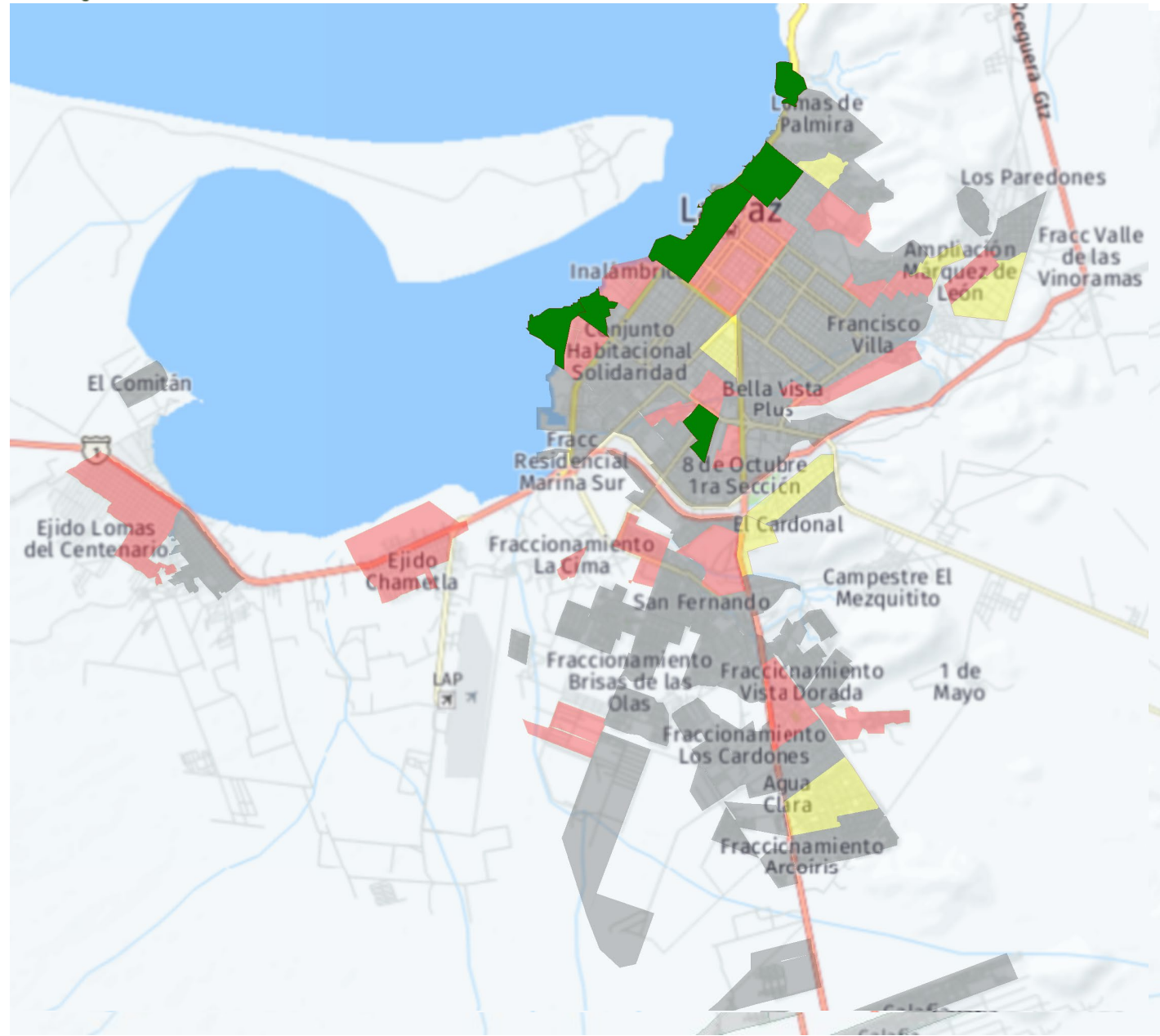
**39% Others**

Precise, easy access







## 2nd World Forum on Urban Forests

Washington DC, 2023



# How Many Stewards Are In Each Neighborhood?

	[1 : 1] (23)
	[2 : 2] (7)
	[3 : 6] (6)
	undefined (99)



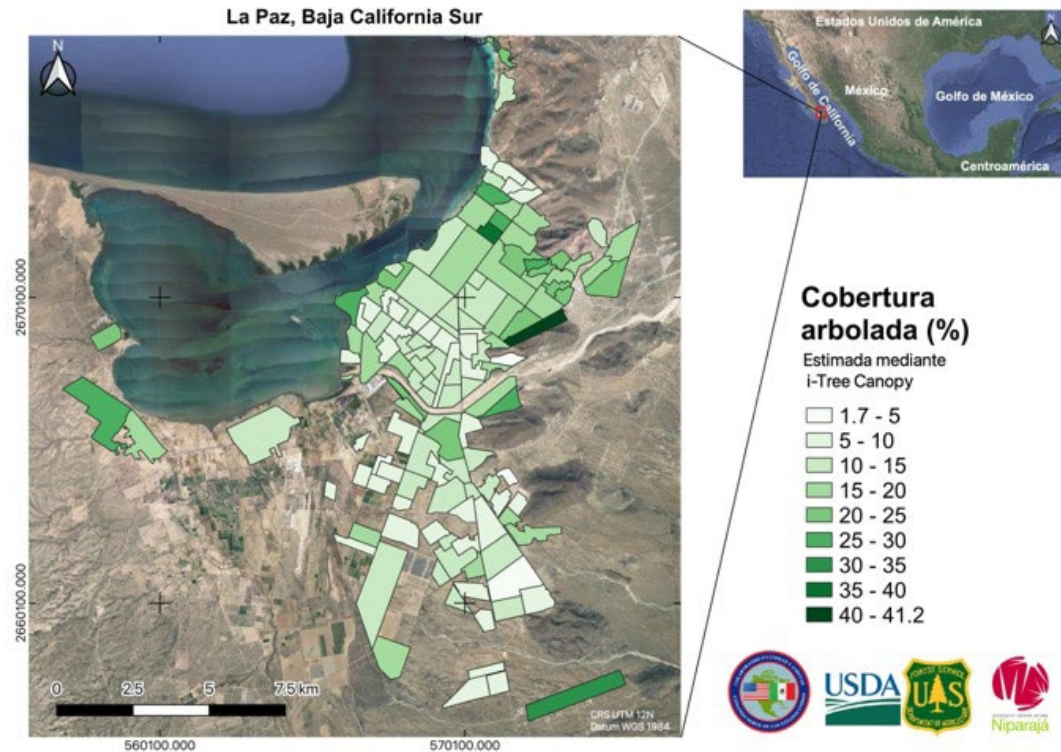




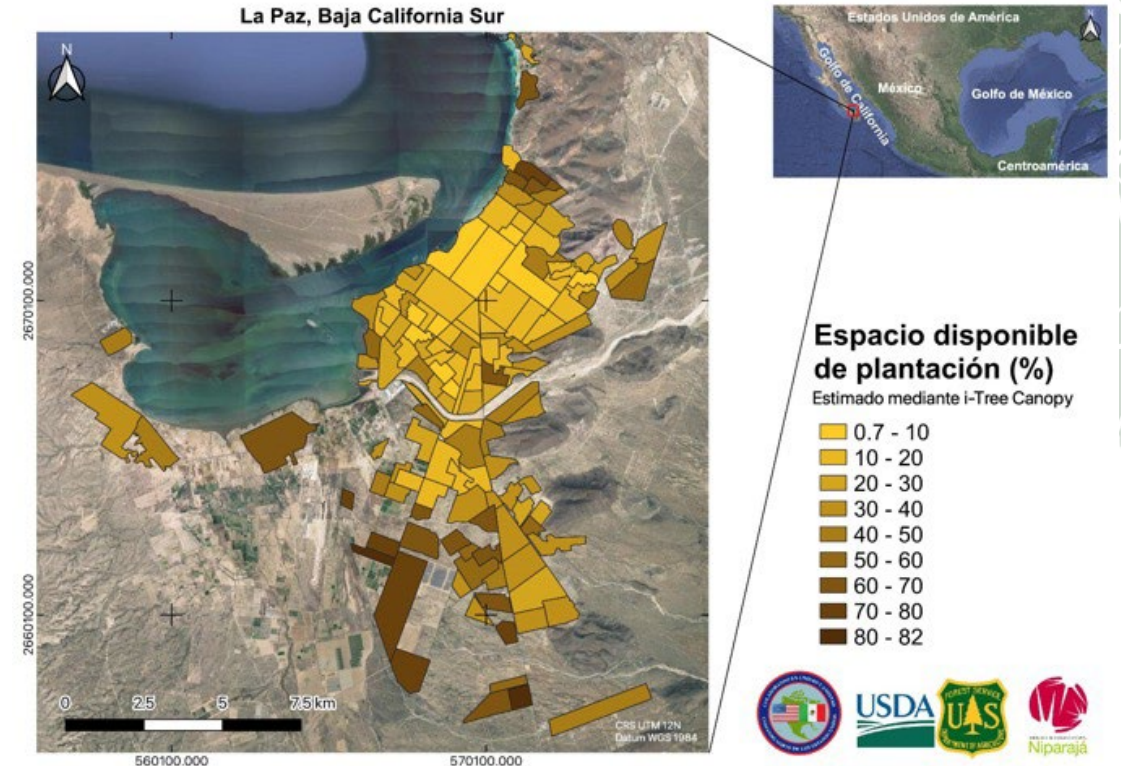
# Use of i-Tree Canopy

Where do we need to increase tree cover?

Where do we have the potential to do it?



Tree Canopy cover



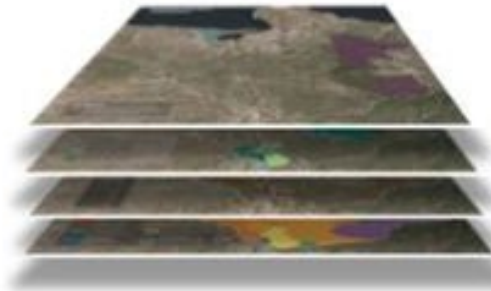
Bare soil



# What Can We Do With This Data?

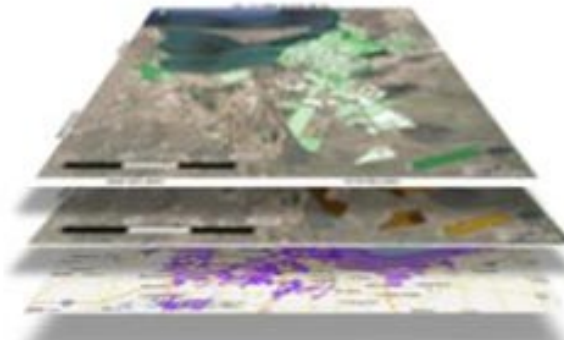
## OFFICIAL INFORMATION

Related to the basin, land use (agrarian nuclei, concessions, conservation areas), water



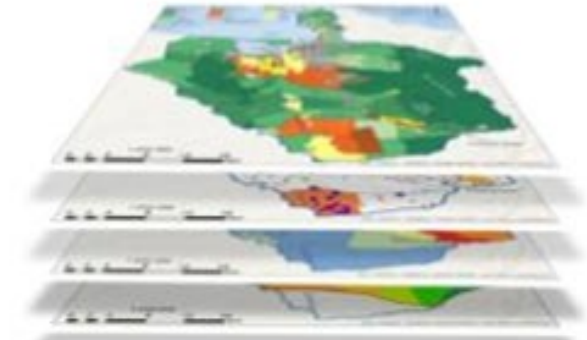
## STEW-MAP / I-TREE

Tree cover and bare soil. Sites where actors develop NBS



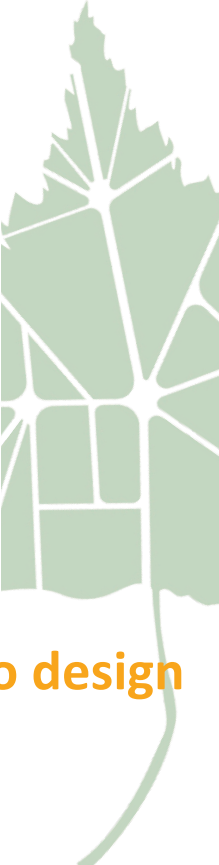
## BASIN INFORMATION

Information about the aquifer and the La Paz basin, generated by Niparajá



**NBS network map**

**Overlapping areas and groups to design  
Urban Oasis**





**i-Tree and STEW-MAP**

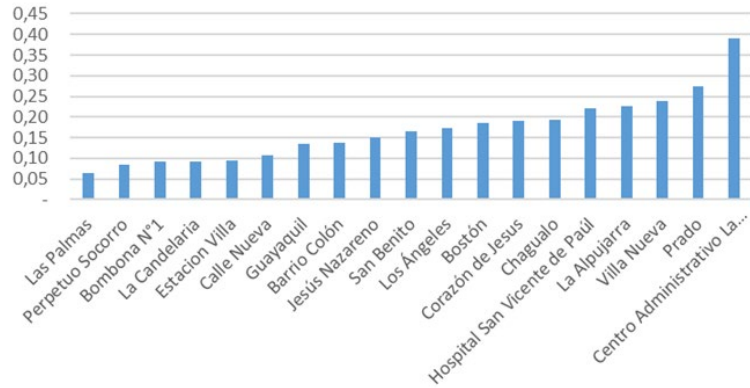
Urban Forest Ecosystem Services  
and Stewardship: Colombia Case



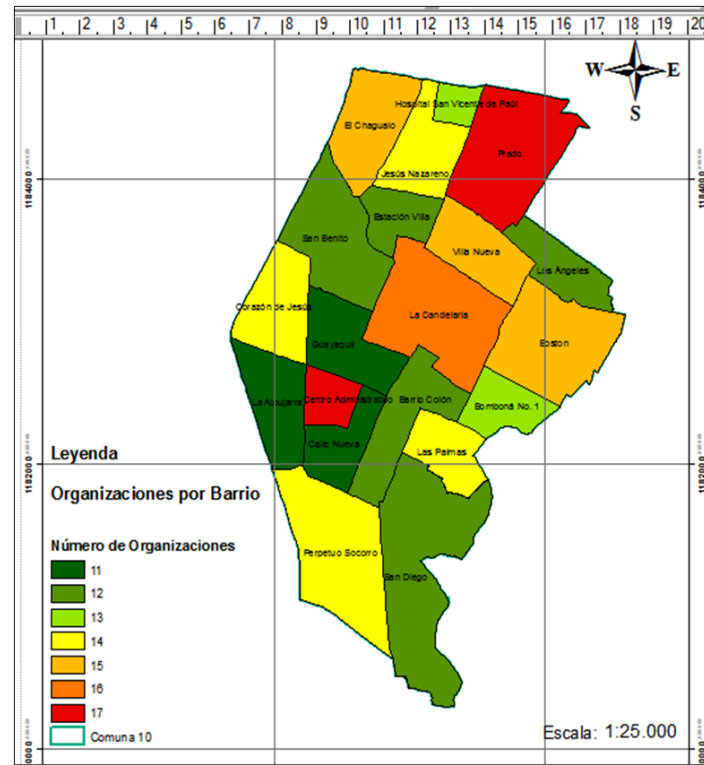
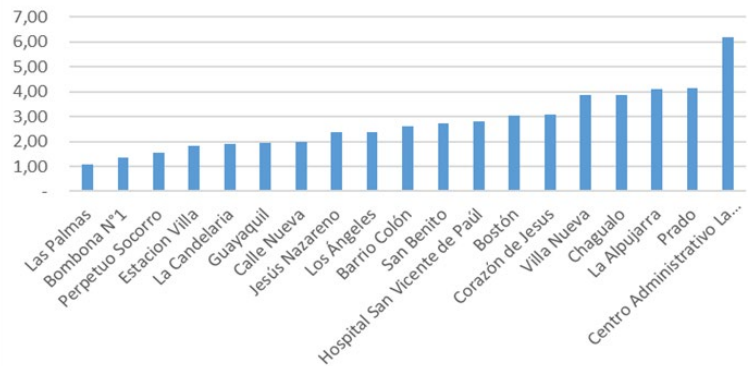


# Medellin Integrated Urban Forestry Project: i-Tree and STEW-MAP

Carbon Sequestration (ton/yr\*ha)



Pollutant Removal (kg/yr\*ha)



Number of Organizations per  
Neighborhood

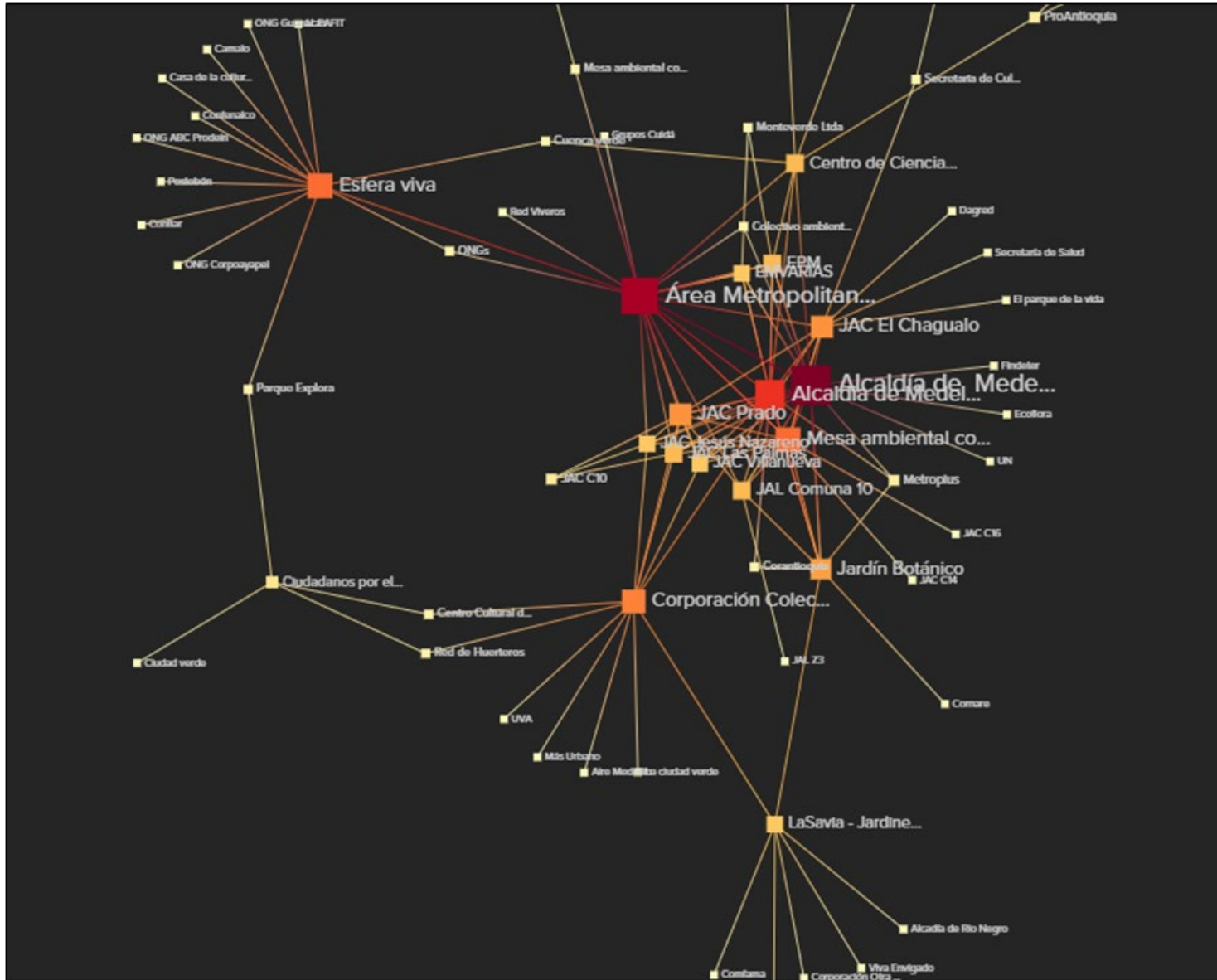
Integration of results of these tools will allow:

- ✓ The analysis of the correlation between tree cover, ecosystem services, and organizations' work.
- ✓ Integrated maps that overlay tree cover and environmental stewardship.
- ✓ The identification of opportunities to involve people in forest conservation and management.



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## Network of Organizations that Work for the Environment in Comuna 10, Medellín

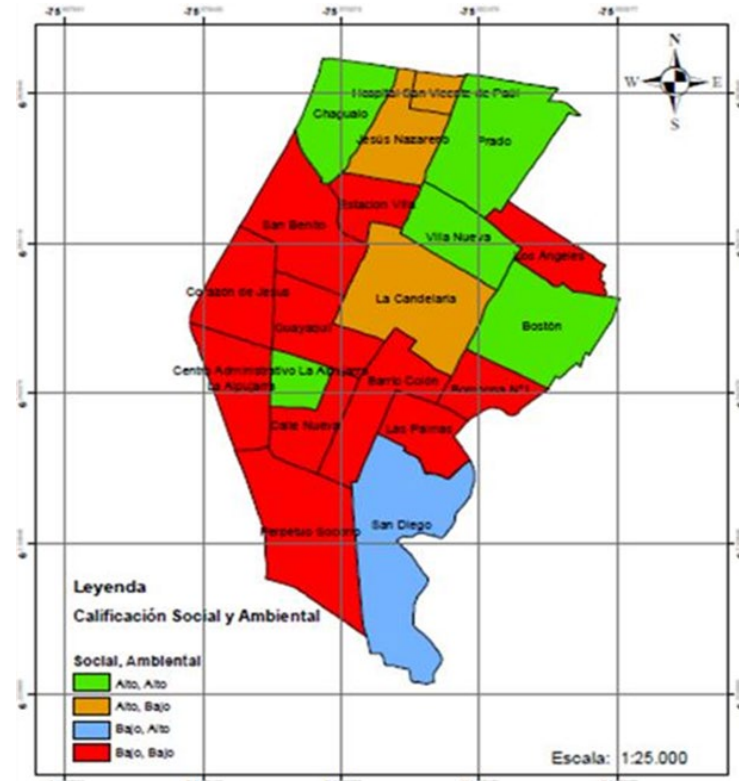




# Ecological and Social Variables

## *Ecological Variables (i-Tree Eco)*

- ✓ Number of species
- ✓ Number of trees/ha
- ✓ Carbon sequestration (ton/yr\*ha)
- ✓ Pollutant removal (kg/yr\*ha)



	Social	Ecological
Green	High	High
Yellow	High	Low
Blue	Low	High
Red	Low	Low

## *Social Variables (STEW-MAP)*

- ✓ Number of organizations
- ✓ Number of connections among organizations
- ✓ Number of activities of each organization





# Urban Forest Management Plan

**i-Tree and STEW-MAP integration will be useful to define:**

- ✓ **What areas/trees will be addressed?**
- ✓ **What are the benefits of urban trees?**
- ✓ **Who are the people whose support you will need?**
- ✓ **Why do you need to develop a plan?**





# Community Engagement For Urban Forest Care



## Citizen Science using i-Tree

- *“I found i-Tree an excellent tool to learn about the benefits of trees”.*
- *“I have the recognition of the invaluable contributions of urban trees to our physical and mental health”.*
- *“I learned to take care of trees and appreciate them much more than I did before”.*







# Application and Use of the Results

- ✓ Show what the organizations do for the environment.
- ✓ Determine which organizations are strong and which need more support.
- ✓ Identify opportunities to involve people in urban forest conservation and management.
- ✓ Evaluate the contribution of trees to mitigating pollution and carbon emissions in the city.
- ✓ Show the importance of the urban forest as a Nature-Based Solution to environmental problems.





---

# Conclusions

- ✓ Increased knowledge of urban forests and its ecosystem services.
- ✓ Increased coordination among different organizations: public, private, NGO's, and academia.
- ✓ Tools for urban forest management.
- ✓ Strategies for optimizing urban forest functions, and to improve environmental conditions and human well-being.
- ✓ Unique opportunity to use i-Tree Eco, i-Canopy, and STEW-MAP concurrently.





# Thank you

**María Arroyave, Arantxa Zamora & Fabiola López**  
**U.S. Forest Service – International Programs**

**Mexico and Colombia Programs**

**More information and collaboration**

- ✉ [mariaarroyaveusfs@gmail.com](mailto:mariaarroyaveusfs@gmail.com)
- ✉ [zamoraarantxa@gmail.com](mailto:zamoraarantxa@gmail.com)
- ✉ [fabiola.lopez@usfsmex.org](mailto:fabiola.lopez@usfsmex.org)



Food and Agriculture  
Organization of the  
United Nations



# **2nd** **World** **Forum on** **Urban** **Forests**

**2023**



**World Forum on  
Urban Forests**



# 2nd World Forum on Urban Forests

Washington DC, 2023

## Session 2.2 Inclusive cities

# Forestami, a collective challenge for a new ecological way of thinking



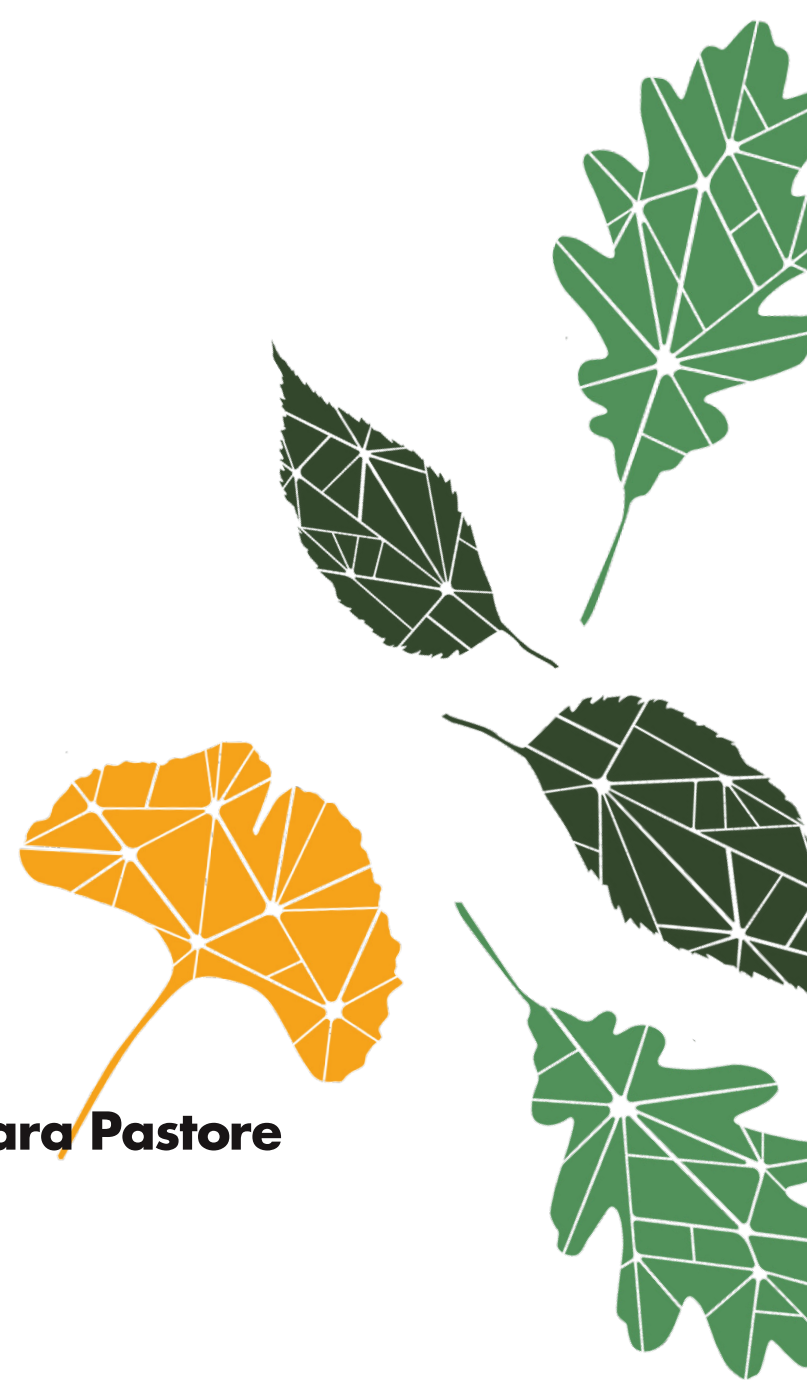
[www.forestami.org](http://www.forestami.org)

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Presented by

**Daniela Gambino, Claudia Parenti, Maria Chiara Pastore**

October 17, 2023





Forestami is a project that aims at knowing, designing, maintaining, enhancing the **Natural Capital of Città Metropolitana di Milano**, planting 3 million new trees by 2030.

Forestami started with a research by the **Politecnico di Milano**, in 2018 whose objectives were shared by a Memorandum of Understanding signed among the **Città Metropolitana di Milano, Comune di Milano, Parco Nord Milano, Parco Agricolo Sud Milano, ERSAF - Regione Lombardia** and **Fondazione di Comunità Milano**.

## Mission

**Planting 3 million trees by 2030  
in the territory of the  
Metropolitan City of Milan**

# The goals of Forestami are:

- to involve all citizens, associations, public and private companies to contribute with actions that have a positive impact on their own future and on the future of new generations;
- to raise awareness of the value of trees and urban forestation as an essential contribution to the well-being of the places we live in, in terms of environmental, economic and social benefits and improved quality of life.







# One of the most densely urbanized areas in Europe

**40,5%**  
urbanized  
territory

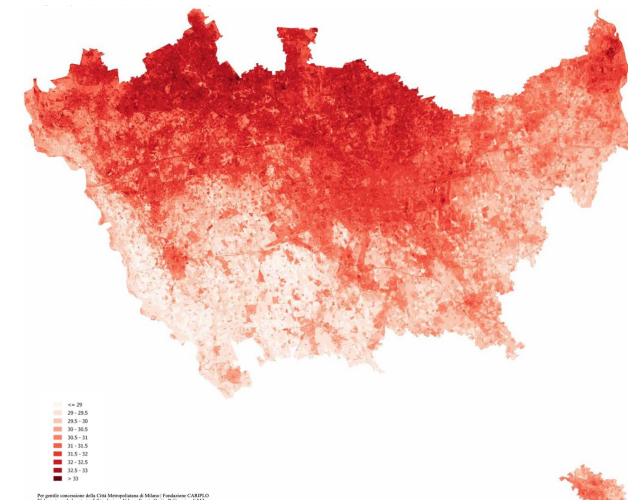
Permeable/Impermeable surface (2017)



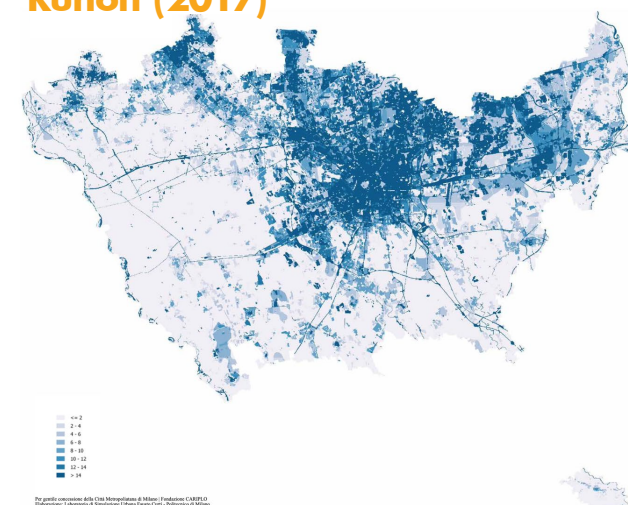
Il coefficiente della superficie permeabile e impermeabile è stato calcolato sulla base del DBT. La mole di dati è enorme e il calcolo richiede del tempo. Il dato che ne risulterà sarà più raffinato di quello del DUSAF, salvo updates più recenti.

Elaborazione: Laboratorio simulazione urbana Fausto Curti - Politecnico di Milano - DBT CMM 2012

Surface Temperature (2017)



Runoff (2017)





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**16,58%**  
**Tree Canopy**  
**cover**



# Estimates of the Tree Canopy Cover (2018)



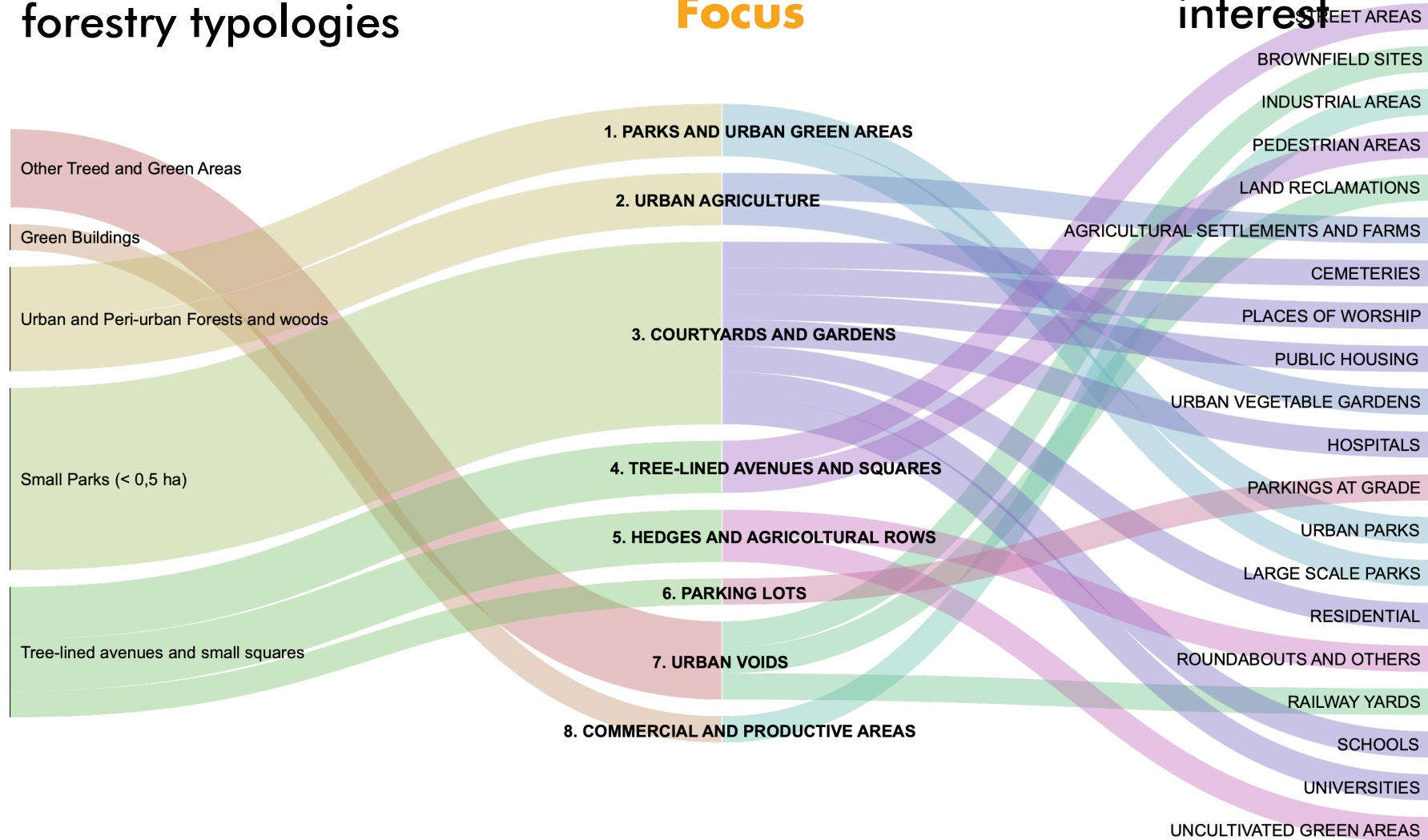
Forestami



## FAO - Urban forestry typologies

## Forestami Focus

## Areas of interest

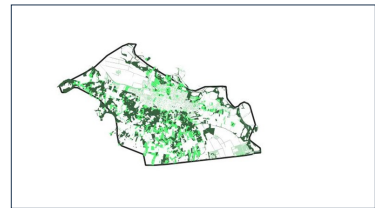
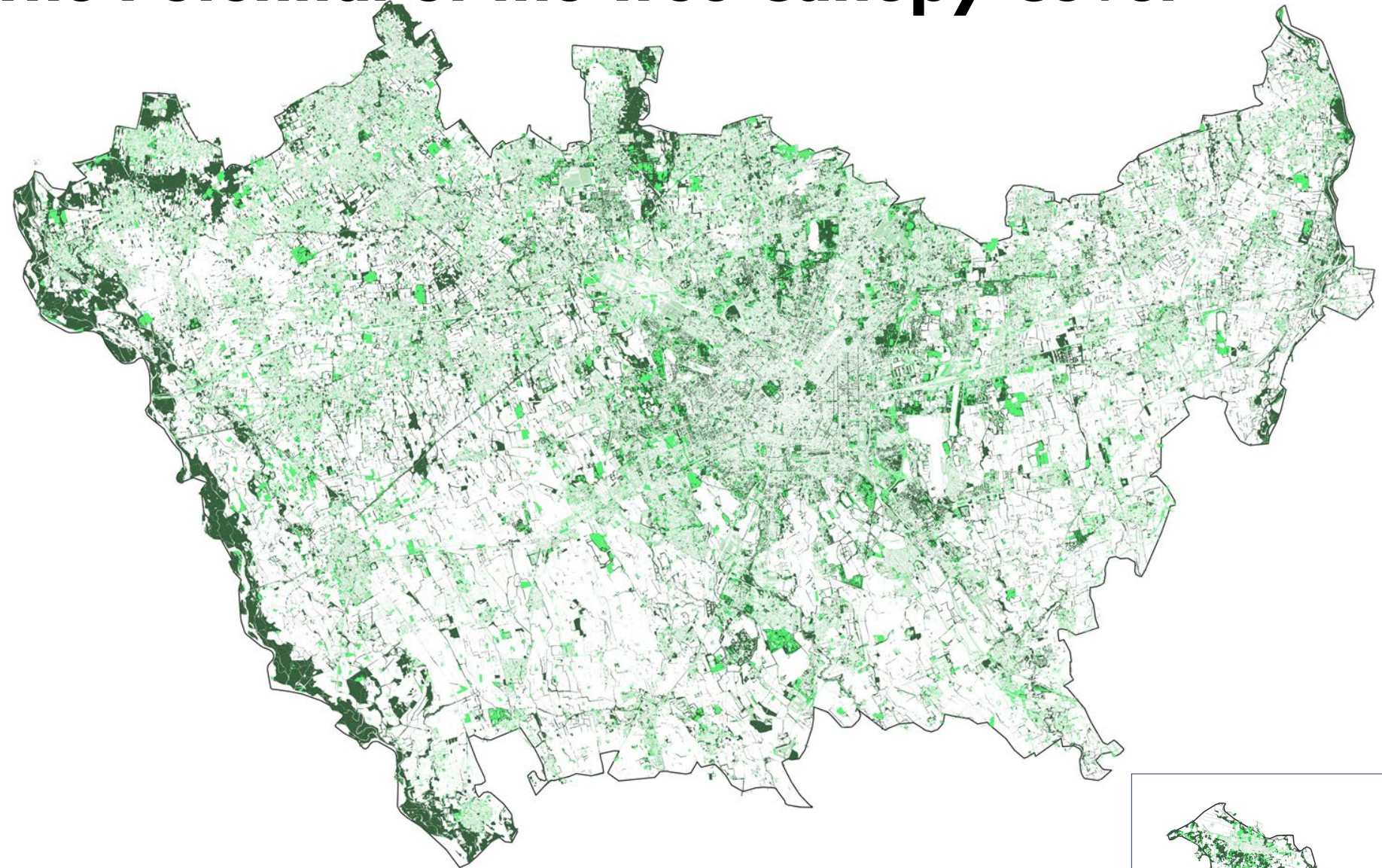




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# The Potential of the Tree Canopy Cover





**Forestami**



# **When can urban forests be considered fully accessible and inclusive?**

**Forestami believes that forests take on this value when nature is reconsidered as a fundamental element in people's minds and, from a spatial point of view, in the public and collective structure of our cities and landscape.**





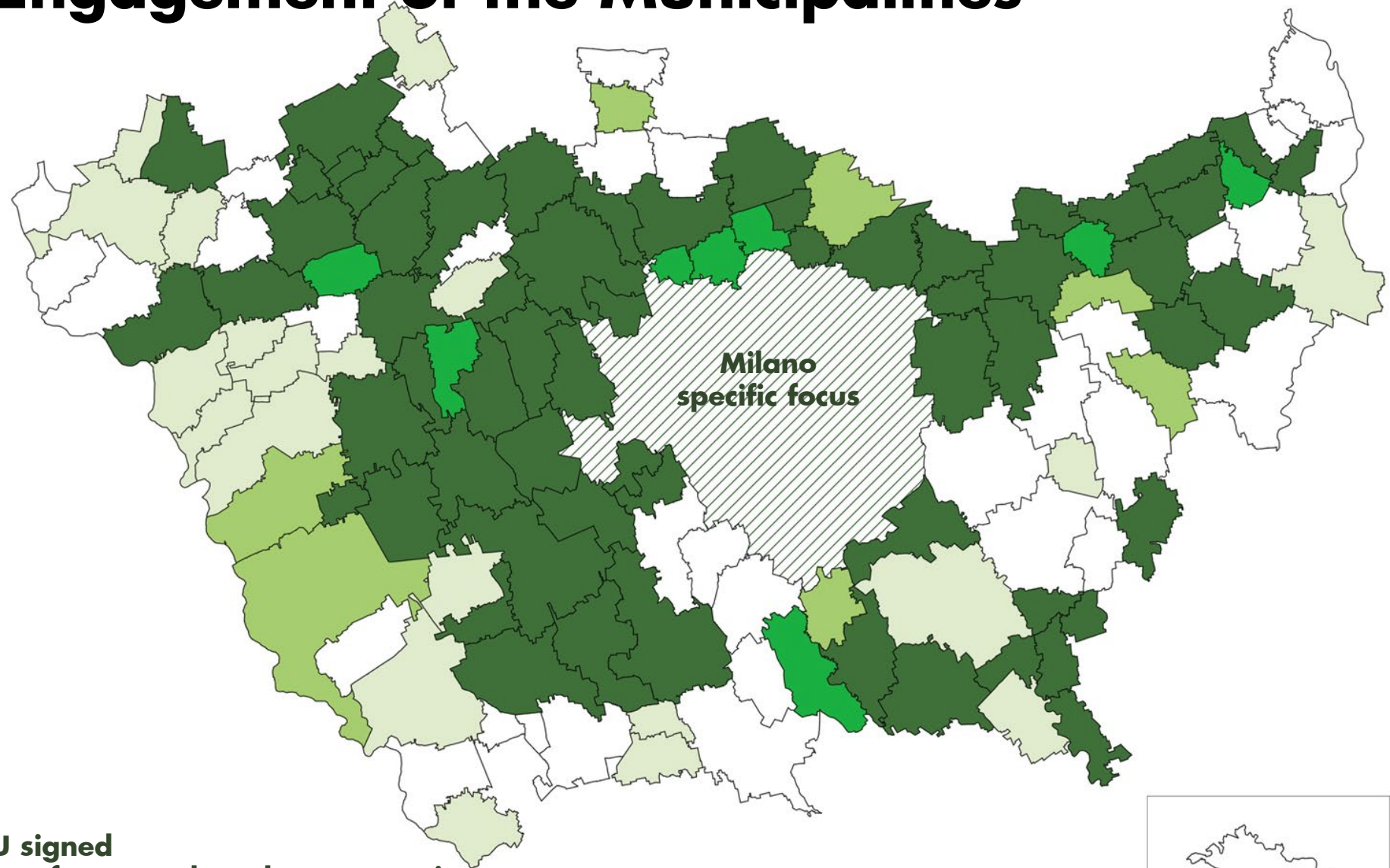
# Engagement of the Municipalities

**62**

Municipalities  
have already  
signed a MoU  
with Forestami

Currently working  
with other

**5** Municipalities



**MoU signed**  
**Project framework under construction**  
**Expression of interest**



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## Forestami Focus

# PLANTING TOGETHER, with a strategy

- 
- Pilot projects**
- Red squares
- Territorial elements:**
- Green squares: Parks and gardens
  - Dark green squares: Woodlands
  - Light green squares: Agricultural fields
- Water system:**
- Thin blue lines: Water elements
  - Thick blue lines: Main water channels
  - Blue squares: Water basins
- Infrastructural system:**
- Thick grey lines: Highways, ring roads, state roads
  - Medium grey lines: Provincial roads
  - Thin grey lines: Municipal roads
  - Grey squares: Infrastructure spaces
  - Dashed grey lines with diamonds: Railway network
  - Dashed grey lines with squares: Underground line



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**70** ha, in two years  
(2021/2022- 2022/2023),  
of which

**20** ha, by Forestami  
(43,000 plants,  
41 tree planting)

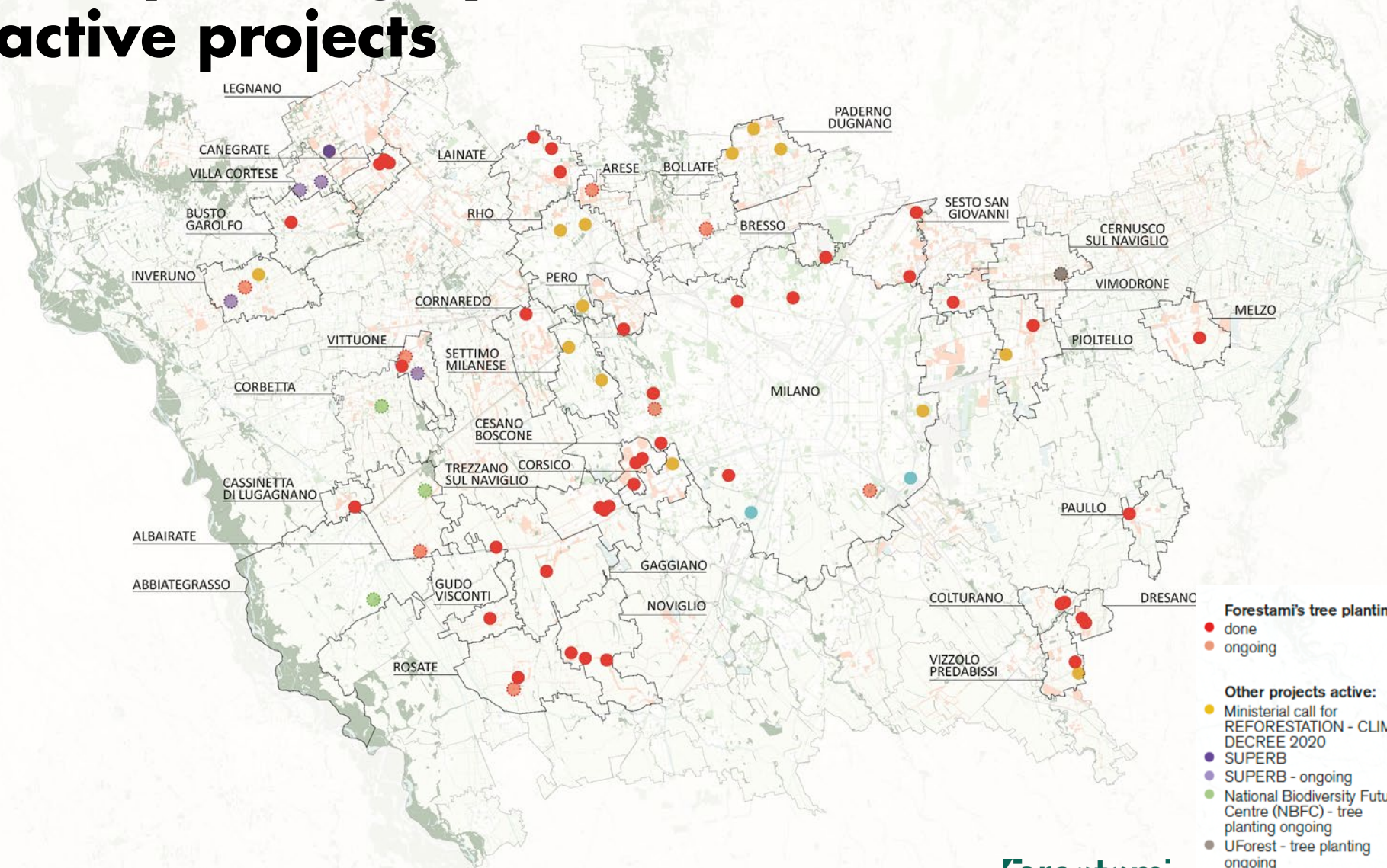
**+22** ha, scheduled  
for the next agronomic  
season, of which

**6,9** ha, by Forestami

**+68,9** ha, in the  
design phase,  
of which

**6,4** ha, by Forestami

# Tree planting by Forestami Funds and other active projects





# Tree planting by Forestami with social cooperatives and territorial stakeholders

## Canegrate (MI) - Italy



Year: **2021**  
Number of trees and shrubs: **5,481**  
Realized by: **Parco Nord Milano e Cooperativa Solaris Lavoro e Ambiente**  
**Forestami**

## New urban woods around the cemetery and implementation of the park in via dei Partigiani





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With students



Planning and planting with social cooperatives



With citizens



# Scuola Forestami

## Scuola Forestami > young generation students

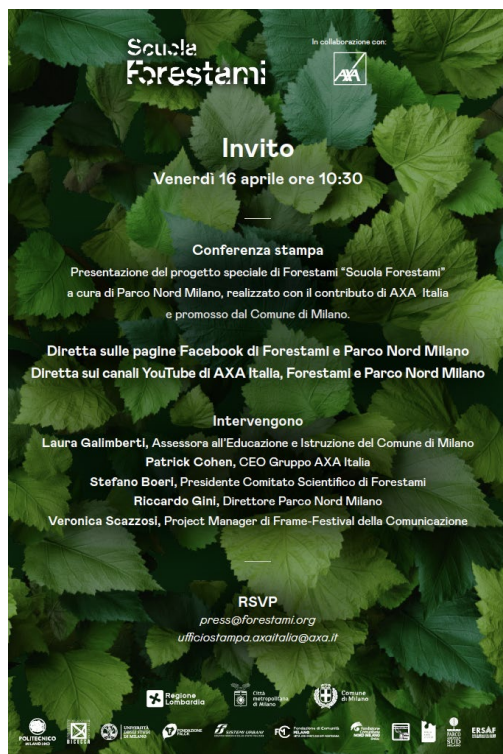
### April 2021 — Launch of the special project

Scuola Forestami is an environmental education project in primary and secondary schools in Milan.

From March 2021 to December 2022, the project involved approximately **11,600 people including 9,500 students from 490 classes.**

Performed activities: - **“Outings in the Forest”**, immersive educational experiences - the virtual treasure hunt **“Milan Green Treasure Hunt”**; - interactive workshops **“The Breath of the Planet”** - **“ForestAzioni”**, collective forestation activities.

The project was launched with Parco Nord in collaboration with AXA Italia and is promoted by the Municipality of Milan.





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## Exhibition “Dentro le foreste” > schools and families

### An immersive exhibition at the center of biodiversity

The exhibition "Dentro le Foreste" was also inaugurated in September 2022, with immersive settings, educational exhibits, live animals and naturalistic finds to enjoy an interactive and engaging experience, useful for understanding the urgency of safeguarding the existing forests which are indispensable for us and future generations.

The exhibition at the end of 2022 saw the participation of almost **2,000 people**, including children and adults.

Scuole Forestami

# DENTRO LE FORESTE

Una mostra immersiva al centro della biodiversità

dal 10 Settembre 2022  
all' 8 gennaio 2023

**ORARI**  
Domenica  
ore 10.00 - 13.00  
14.00 - 19.00

**DOVE**  
Parco Nord Milano  
Cascina Centro Parco  
Via Clerici, 150  
Sesto San Giovanni (MI)

**INFO**  
393 0837918  
idea@ideainrete.net

**SCUOLE e GRUPPI**  
329 3831029  
idea@ideainrete.net

SE SEI UN INSEGNANTE  
compila il form di adesione  
a SCUOLA FORESTAMI  
<https://forestami.org/la-scuola/>

Ambientazioni immersive, exhibit didattici, ricostruzioni di ambienti, animali vivi e reperti naturalistici unici per vivere un'esperienza interattiva, rara e coinvolgente.

Un percorso arricchito dalla Realtà Aumentata, attraverso cui acquisire consapevolezza dell'urgenza di salvaguardare le foreste esistenti indispensabili per noi e per le generazioni future.

[www.dentroleforeste.org](http://www.dentroleforeste.org)

## Custodiscimi > citizens

### 1st edition 2022 – 2nd edition 2023

Custodiscimi is an initiative by Forestami in collaboration with Forestami, ERSAF and Legambiente Lombardia.

The objective is to involve citizens in the care and growth of the greenery of the future, within the Municipalities of the Municipality of Milan and the Municipalities of the Metropolitan City.

Forestami delivered the **2,500 forest seedlings** on March 25, on the occasion of World Forest Day, March 21.

The seedlings will be transplanted, cared for and looked after by the citizens, and then **returned to Forestami on 21 October**, to then be planted and form new urban forests.





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### 9 Municipality of Milan



### 22 Municipalities of the Metropolitan City



### Meetings with the citizens



# **DROUGHT Forum and press conferences**

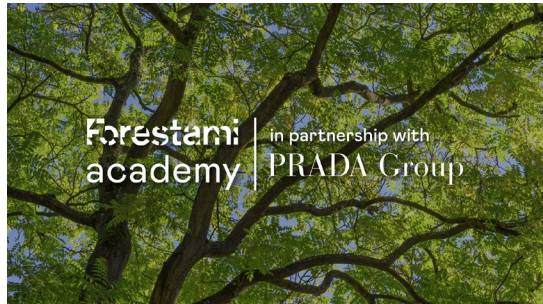
**> technical and political administrators**

Triennale of Milano - March 20, 2023



Since November 2019 **8 press conferences**





## **Forestami Academy > green lover citizens**

Forestami Academy is an opportunity for meeting, exchange and training with the aim of disseminating the principles, values and scientific nature of urban forestry. It is aimed at green-loving citizens who wish to increase their knowledge in this field.

3 years of training, each characterized by a theme:

**2023 “Know the forests and places of forestation”**

**2 classroom meetings at Triennale Milano**

**1 outdoor lesson**

**400 participants**

**2024 “Urban forestation: well-being and health”**

**2025 “Plants and their presence in cities”**



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# Triennale of Milan

May 12, 2023



June 30, 2023

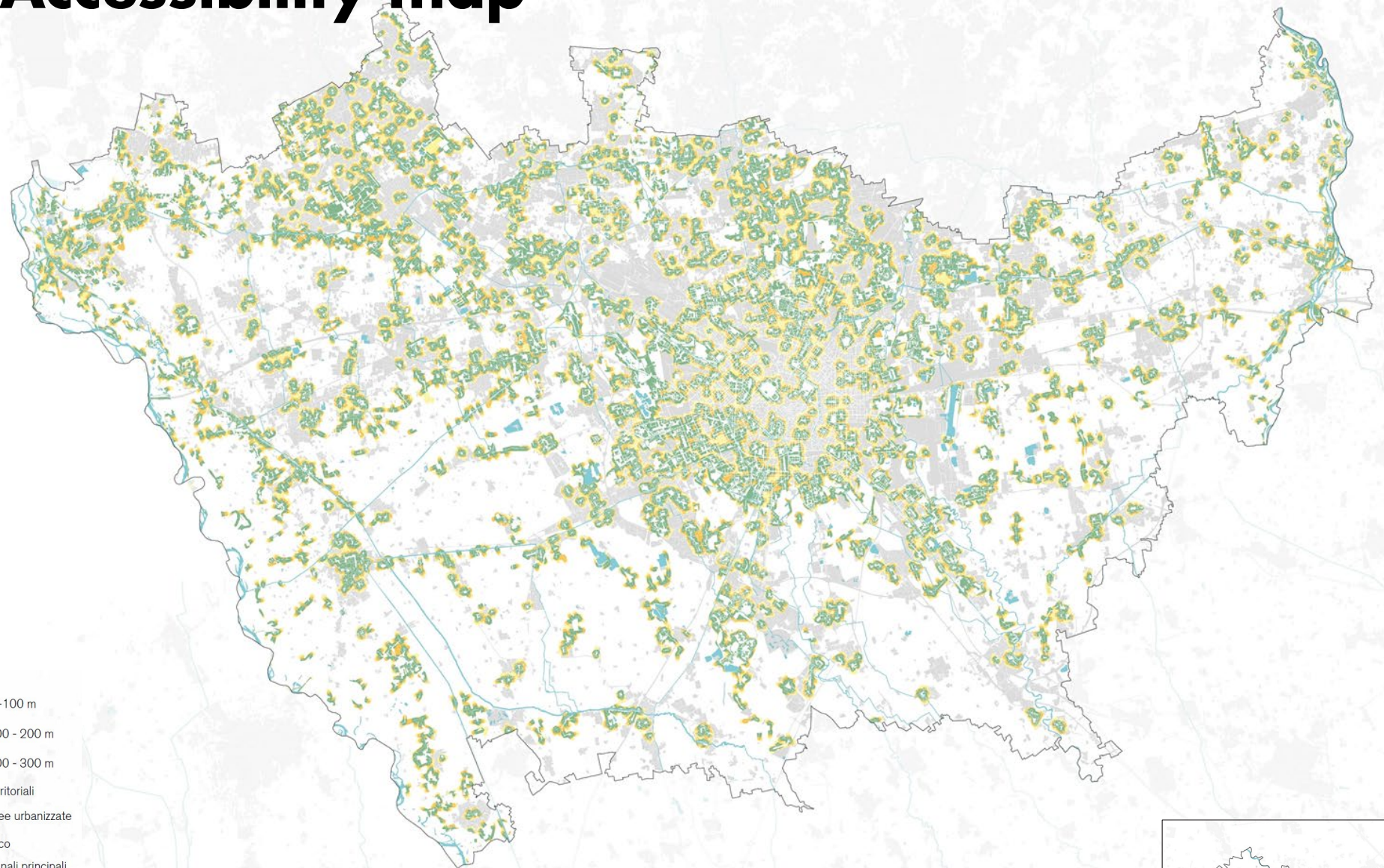




# Accessibility map

among the ongoing  
research activities:

- Accessibility map
- Survey



# A survey for the inhabitants of the Metropolitan City of Milan



1. Relationship with nature and the environment
2. Frequent use of green spaces
3. Benefits of Trees
4. Willingness to contribute

## Results:

**4,674 citizens** responded to the survey

### During a typical week:

**29%** frequent green areas for more than 2 hours;  
**23%** spend between one and two hours of time in green areas;  
**21%** more than an hour;  
**23%** less than an hour;  
**3%** do not frequent green areas.

**76%** are willing to contribute with volunteer activities;  
**59%** are willing to contribute economically to the increase e maintenance of nature in the city.



# Thank you

**Daniela Gambino, Claudia Parenti,  
Maria Chiara Pastorel Dastu - Politecnico di Milano**

✉ **daniela.gambino@polimi.it**  
**claudiaida.parenti@polimi.it**  
**mariachiara.pastore@polimi.it**



Food and Agriculture  
Organization of the  
United Nations



Arbor Day  
Foundation



International Society of Arboriculture



Smithsonian



FOREST SERVICE  
U.S. DEPARTMENT OF AGRICULTURE

# **2nd** **World** **Forum on** **Urban** **Forests**

**2023**



**World Forum on  
Urban Forests**



# 2nd World Forum on Urban Forests

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## Inclusive and international:

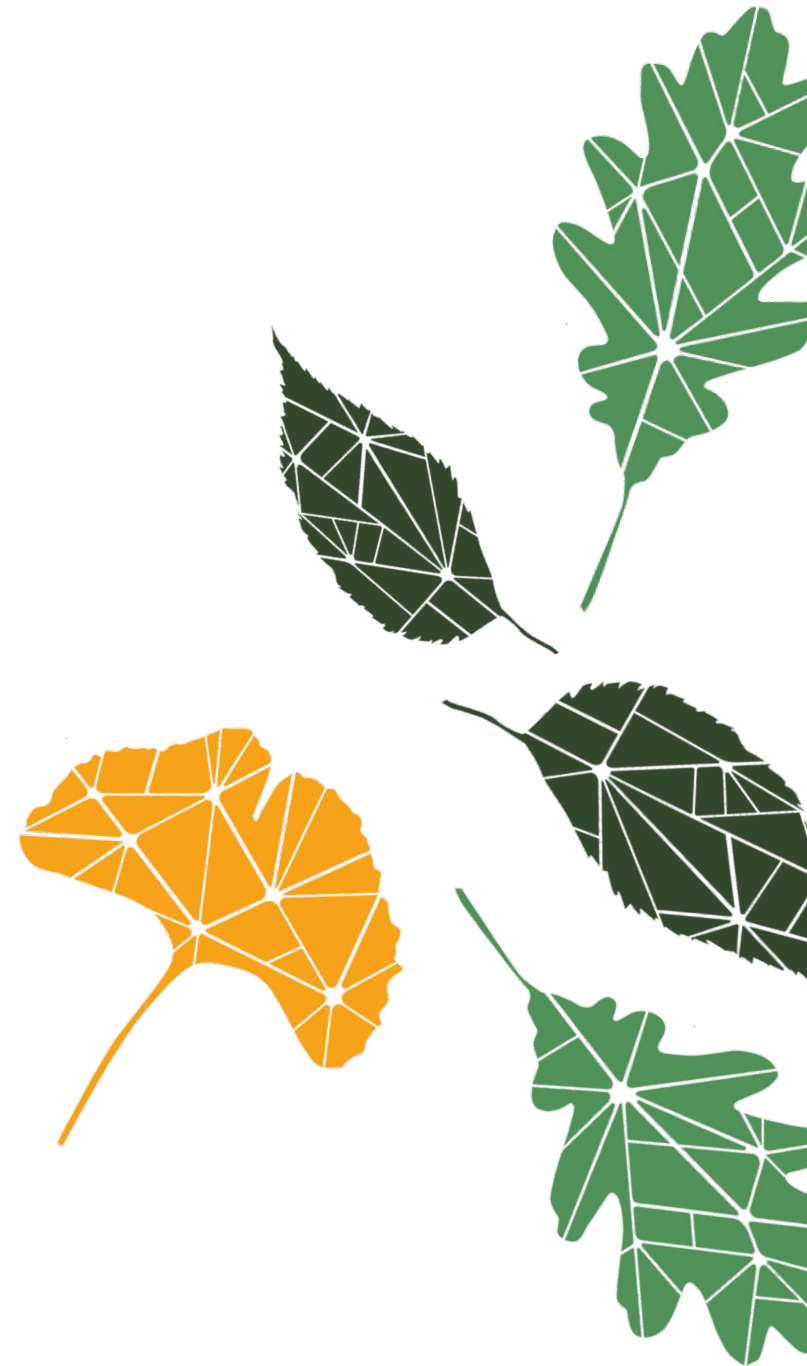
Sharing effective community  
engagement strategies across borders



---

### Presented by

Christine Carmichael, Ph.D.  
Founder and Principal Consultant  
Fair Forests Consulting, LLC



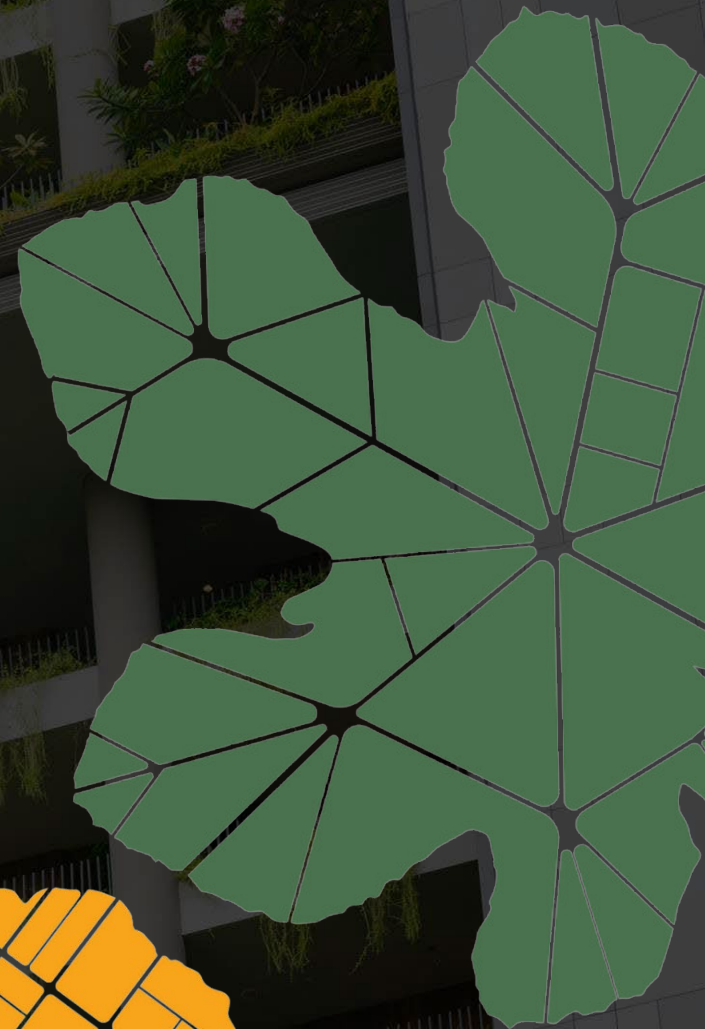
**Tree canopy is racially inequitable in the U.S.**

Tree canopy coverage on average is:

23% in majority-BIPOC communities

43% in majority-white communities

Locke et al (2021). <https://www.nature.com/articles/s42949-021-00022-0>



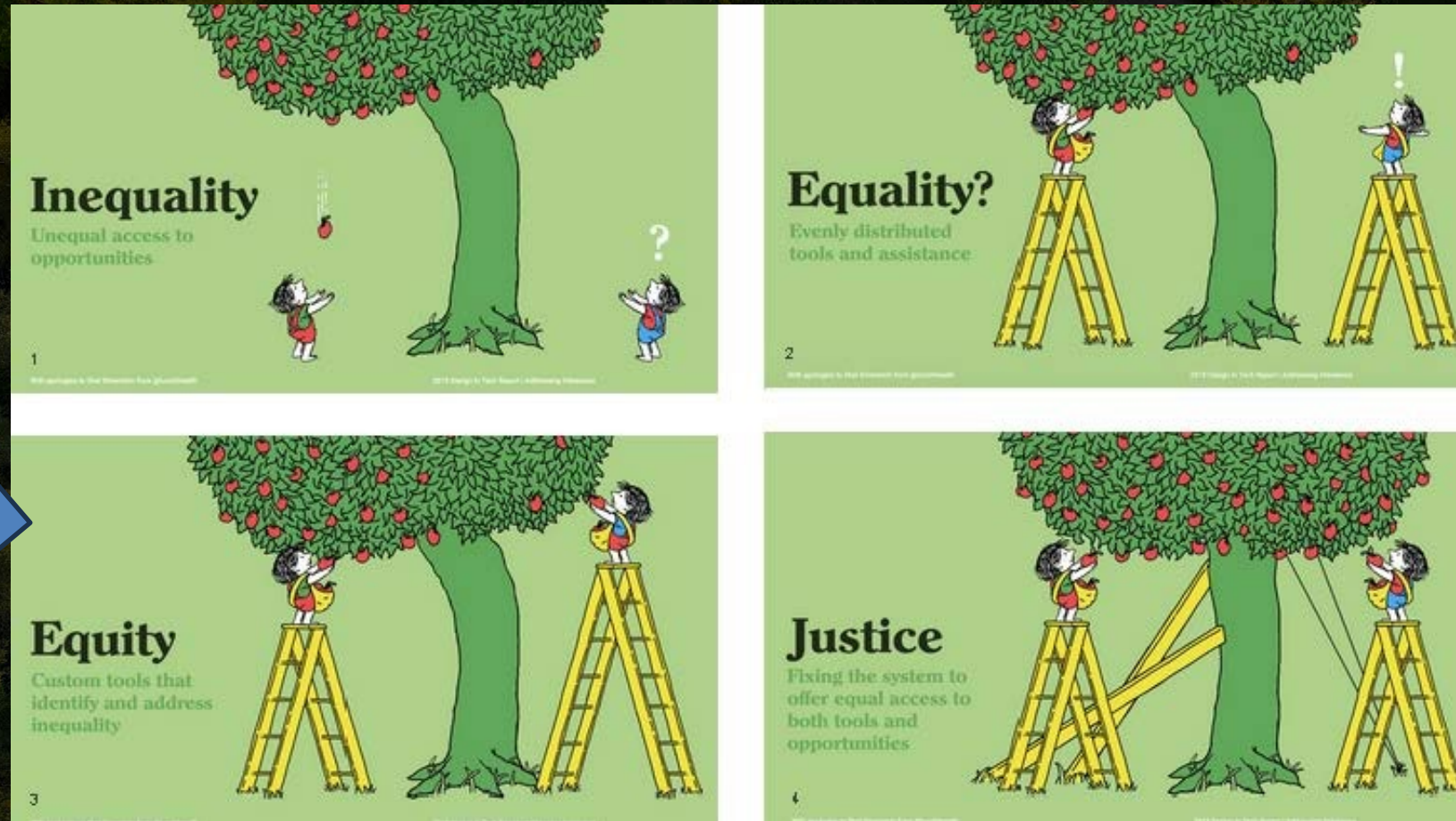




# Inadequate city tree care + excluding residents from decisions led to “no-tree requests”



# Equitable engagement is needed

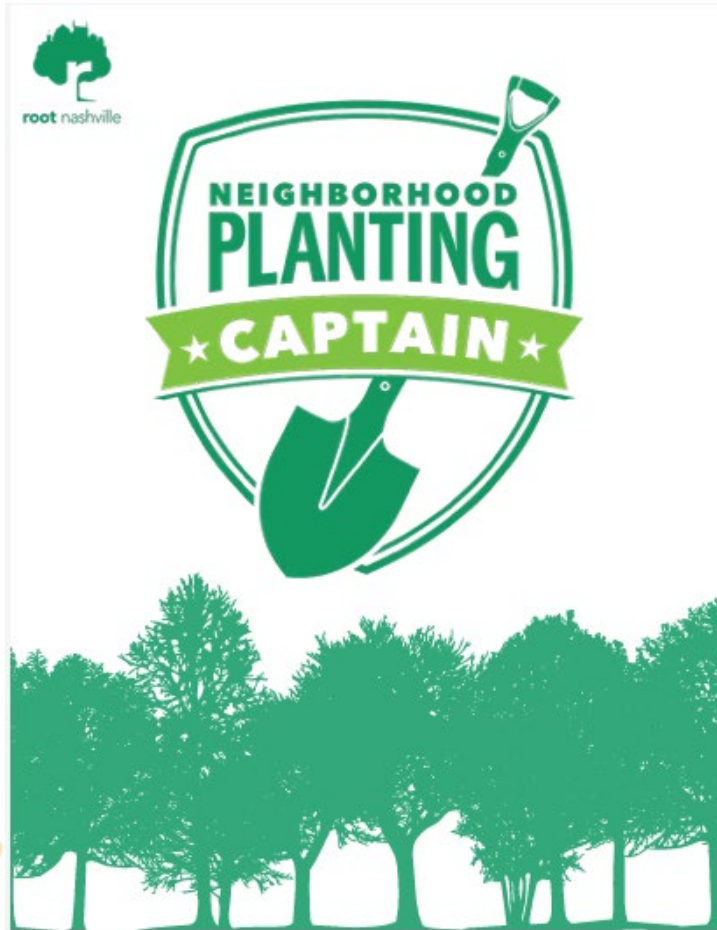


Source: visualization by [Tony Ruth](#), graphic by [Avinash Kaushik](#), inspired by [Shel Silverstein's The Giving Tree](#). *Paper Pinecone* (2020)





# Inclusive and just engagement



- **Root Nashville pays residents \$1,000 to find homes for 50 trees in their neighborhoods**
- **Past captains then help train and mentor new cohorts of neighborhood planting captains**



# “Ward Walks” where people live

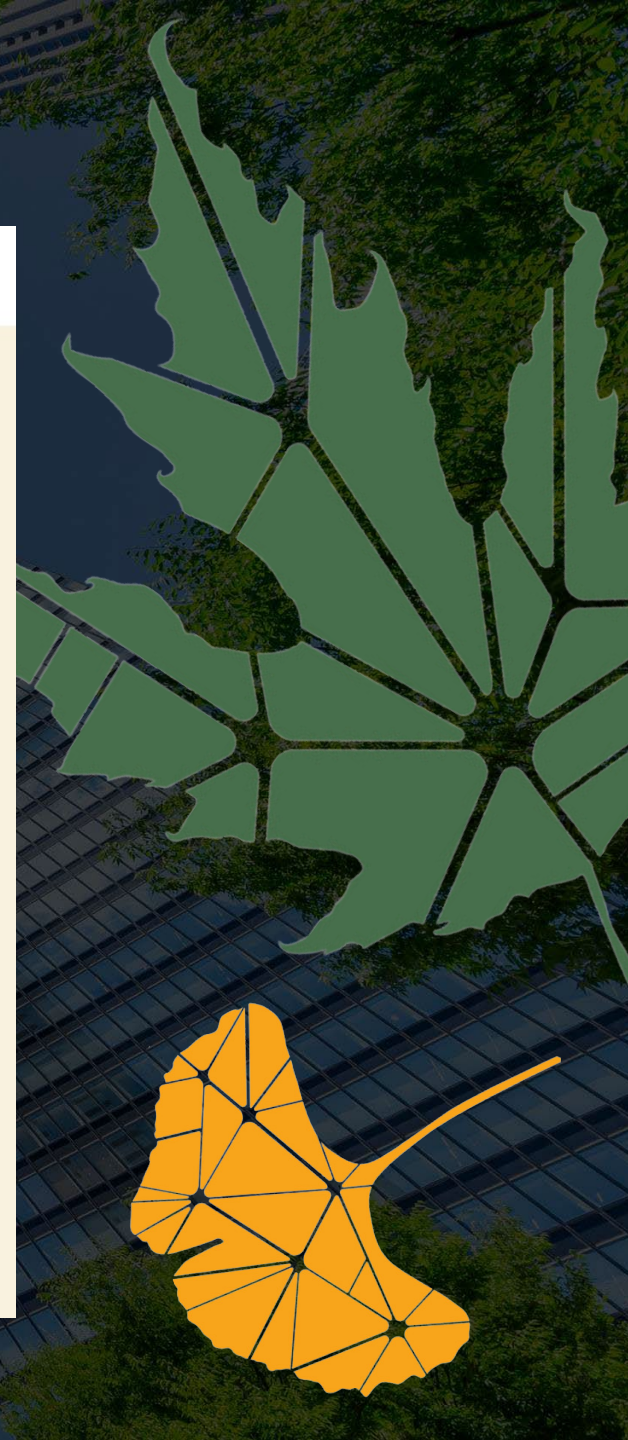
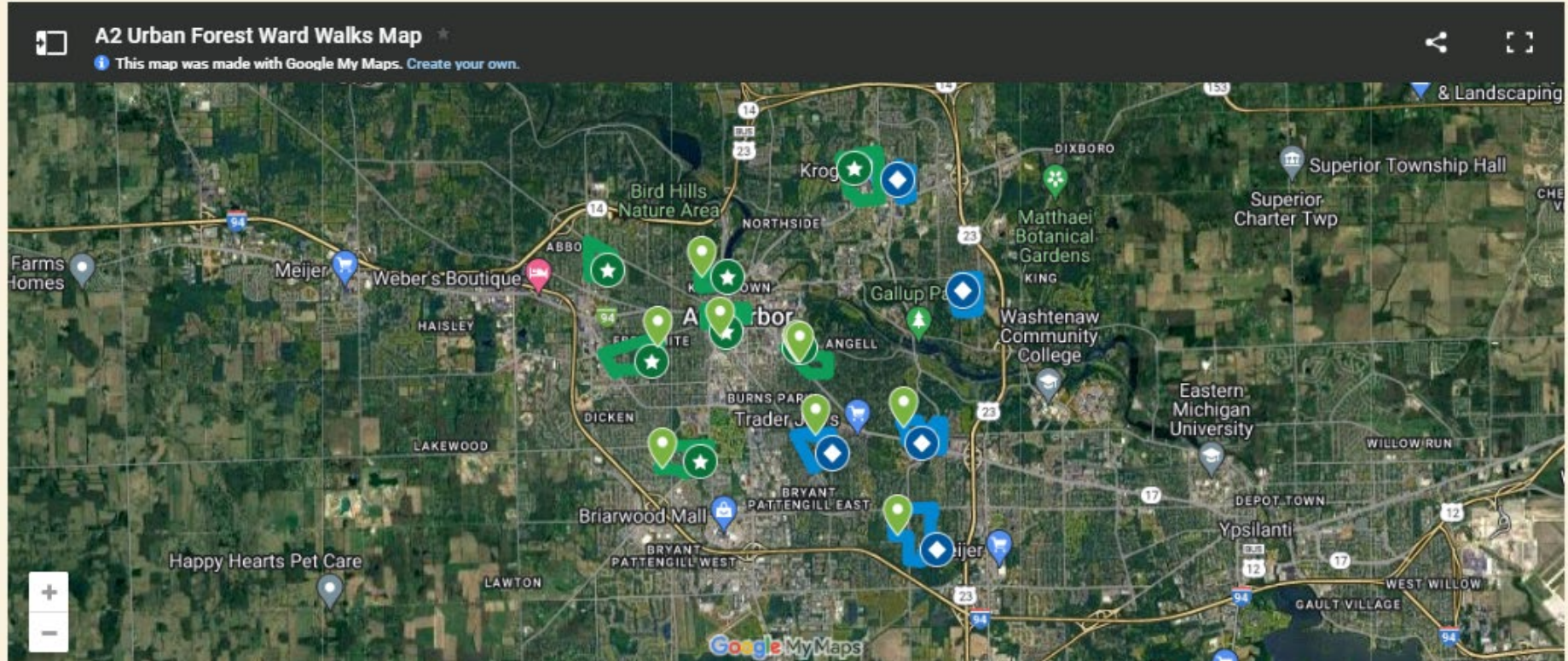


Home Meetings Steering Committee Survey Ward Walks

## Interactive Map

GREEN routes have sidewalk throughout

BLUE routes include segments without sidewalk



# Collecting stories through "selfie contests"



*"This tree is my favorite because this was the first place that I visited in Holyoke after Hurricane Maria 2017. This is the first tree that I saw with this beautiful color, the first time that I saw it in real life!"*

*"Este árbol es mi favorito porque este fue el primer lugar que visité en Holyoke después del huracán Maria. ¡Este es el primer árbol que vi con este color hermoso, la primavera vez que lo vi en la vida real!"*



**HOLYOKE MASSACHUSETTS**  
URBAN FOREST EQUITY PLAN  
PLAN DE EQUIDAD FORESTAL URBANA



Made possible by a Municipal Vulnerability Preparedness Action Grant from the Commonwealth of Massachusetts  
Executive Office of Energy and Environmental Affairs.  
Hecho posible gracias a una Beca Municipal de Acción en la Preparación para la Vulnerabilidad de la Oficina  
Ejecutiva de Energía y Asuntos Ambientales del Commonwealth de Massachusetts.

DAVEY Resource Group  
FAIR FORESTS CONNECTING  
Community Circle Planning, Programming & Public Participation

# Facilitate workshops and surveys in other languages

- **Provide tree care workshops where people live and offer childcare**
- **Ask people about their experience—did they enjoy the engagement activities?**



**INDICATOR SPECIES**  
*with Lillian Holden*

**FREE AND OPEN TO ALL!**

Sept. 28th  
6:30 PM  
905 W. Eastman St.





# International knowledge sharing

## How can we share lessons across borders?

Existing groups, like Cities4Forests, could facilitate knowledge-sharing networks to help people:

- Share experiences with **inclusive** community engagement approaches
- Discuss ways to overcome challenges to inclusive community engagement
- Adapt successful engagement methods from other countries

**They provide tailor- made technical assistance and cultivate a community of practice among city professionals**

**Cities<sup>4</sup>Forests**



Based in Washington D.C. but spanning from Accra to Mexico City, it's led by more than 60 cities to better conserve, manage and restore inner forests (such as city trees, urban parks and other green infrastructure), nearby forests (like watershed drainage basins) and faraway forests, especially tropical forests.





**The Informal Expert Network on Urban Nature provides a forum for knowledge exchange and capacity- building as well as peer to peer learning to strengthen sustainable management of urban natu**



This could include **facilitated dialogue** on specific topics every month on Zoom (or similar).

- Allows space to discuss top-of-mind topics related to justice and equity—like fair compensation of residents.







---

# Any other ideas?

## Come talk with me!





# Thank you

**Christine Carmichael | Fair Forests Consulting**

**Fairforests.com**

 **Christine@fairforests.com**



Food and Agriculture  
Organization of the  
United Nations



Arbor Day  
Foundation



POLITECNICO  
MILANO 1863



International Society of Arboriculture



Smithsonian



FOREST SERVICE  
U.S. DEPARTMENT OF AGRICULTURE

# CEUs

**Session 2.2: No Country for Old Men:  
Planning, designing and managing  
urban forests to make them more  
accessible and inclusive**



**PP-23-3563**



**World Forum on  
Urban Forests**