

# Session 2.4

Elysium: Creating the policy and legal framework to support the role of urban forests as public health infrastructure

**Chair: Matt Spitsen** 



World Forum on Urban Forests



### City of Pittsburgh Tree Equity Initiatives



#### Presented by

Michael P Kelley, MNR Pittsburgh, Pennsylvania America's Most Livable City

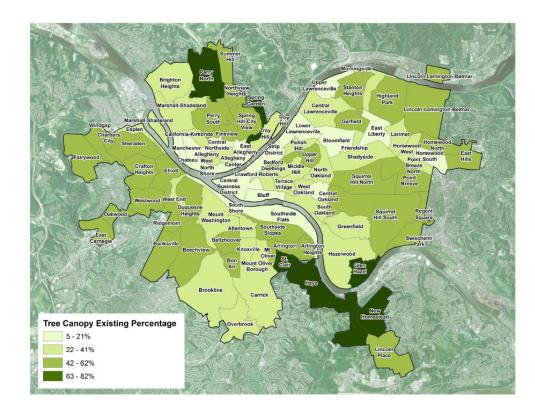


Planting for the future Coverage for All



## Contributing Factors to Canopy Inequity

- Redlining
- Disinvestment in Poor and Minority Communities
- Economic Collapses
- Lack of Intentional Reinvestment





### **Program History**

- 2012: ReLeaf Program Launches in Manchester
- 2019: City Convenes Tree Equity Subcommittee
- 2020: Tree Equity Subcommittee Develops Equity Matrix; Releases Street Tree Equity Plan
- 2021: First Round of Tree Plantings in Equity Neighborhoods
- 2022: DCNR Grant Focusing on Replanting in Equity Neighborhoods Awarded
- 2022: Trust Trees campaign launches; ReLeaf Beltzhoover
- 2023: City and Partners Awarded \$9M in IRA grant funds for Justice40 Neighborhoods across Allegheny County

Partner Organization

City of Pittsburgh Forestry Division



## Show Up and Own Up

- Refocus energy on clearing backlog of work in Equity Communities
- Work with partner organizations and community groups to identify areas of greatest need
- Community Forestry Specialist
- 3TB Community Forest Initiative
- Supporting planting initiatives of partner organizations



# Partner Organization Tree Pittsburgh



### **ReLeaf Plans**



#### **Partner Organization**

# Western Pennsylvania Conservancy



# **TreeVitalize**

- WPC has planted 40,000 trees since 2008
- TreeVitalize Pittsburgh partnership, which includes many organizations and municipal stakeholders across the City and County
- Proper site preparation, tree selection, community engagement, and maintenance.



### **Partner Organization**

# Landforce



## Investing in People Restoring the Land

- Employment social enterprise nonprofit
- Trains and hires people typically excluded from family sustaining green jobs Works on environmental stewardship projects including tree planting, care, GSI, and habitat restoration
- Supports trainees/hirees to transition to long-term employment
- Launching Urban Wood Reuse program to provide services for full lifecycle of trees





Partner Organization

**Resilient Cities Catalyst** 



## Help cities and communities create catalytic change

- Making the case for sustained datainformed community-centered investments in GI & urban tree canopy
- Utilizing data to tell a story of the opportunity of trees
- Visualizing innovative ways of thinking about what a tree-equitable neighborhood and city look like
- Supporting planting initiatives in neighborhoods facing high levels of climate risk



Partner Organization

UrbanKind Institute



### **Trust Trees**









Michael Kelley, MNR | City of Pittsburgh

Michael.Kelley@pittsburghpa.gov





Þ

Arbor Day







# **2nd** World Forum on Urban Forests 2023



World Forum on Urban Forests



#### **Centering Community in Community Forests**

Partnering with environmental justice communities to ensure equitable distribution of urban canopy in the United States



#### **Presented by**

Colleen Berg, Molly Codding, Kalaia Tripeaux Preston Brooks, Ericka Popovich

# Environmental Injustice Acknowledgement

Canopy inequity in the United States is the result of decades of systemic racism in housing and lending, and land use disenfranchisement for people of Color and low-income communities.

# The opportunity: IRA shifts EJ

In 2022, the United States Congress passed landmark legislation which will provide \$1.5 B in funding for urban forest management in environmentally disadvantaged communities.

States will have historic levels of funding dedicated to meeting the needs of EJ communities.

# The challenge: States must engage community for long-term change

- 1. Understand community readiness and motivation to accept trees
- 2. Make sure planting projects are not drop it and forget it
- 3. Help communities maintain and care for trees through education
- 4. Address financial burdens of tree care
- 5. Provide meaningful employment for community members
- 6. Work across divides to address intersectional EJ priorities

How to build bridges through community engagement

Start with awareness
 Slow your roll
 Get flexible
 Be Responsive
 Support Sustainability

# Feedback: What's working

Building relationships before IRA awards
Removing barriers to resources

# Feedback: What's Not

Lack of awareness of eligibility
Bureaucracy
Limitations of our programming
Timelines to action
Too much talking, not enough action



# Diverse Partnerships: Together we can advance justice

MN:

Working with urban farm and garden groups to cocreate mini forests.

Supporting EJ organizers on residential relief efforts.



Photo credit: North News, 2022

**PA: Partnership Planting with TreePhilly** 



## Diverse Partnerships: Together we can advance justice

LA: Food justice Citrus Program







# Sustainability: How to support equity programming and staff

**Organizational assessment questions:** 

- Are divisions, agencies ready for change?
- How much support will existing staff need to support TES? Are you hiring additional staff?
- Will TES concentrate on focused efforts or be pulled in too many directions?
- How will TES guidance be handled?
- How will you involve and consult community with your programming?

# Thank you

Please find us afterwards to

connect Colleen Berg: Colleen.Berg@dnr.ohio.gov Preston Brooks: preston@ batonrougegreen.com Ericka Popovich: epopovich@ bluewaterbaltimore.org Kalaia Tripeaux c- ktripeau@ pa.gov Molly Codding: molly.codding@ state.mn.us













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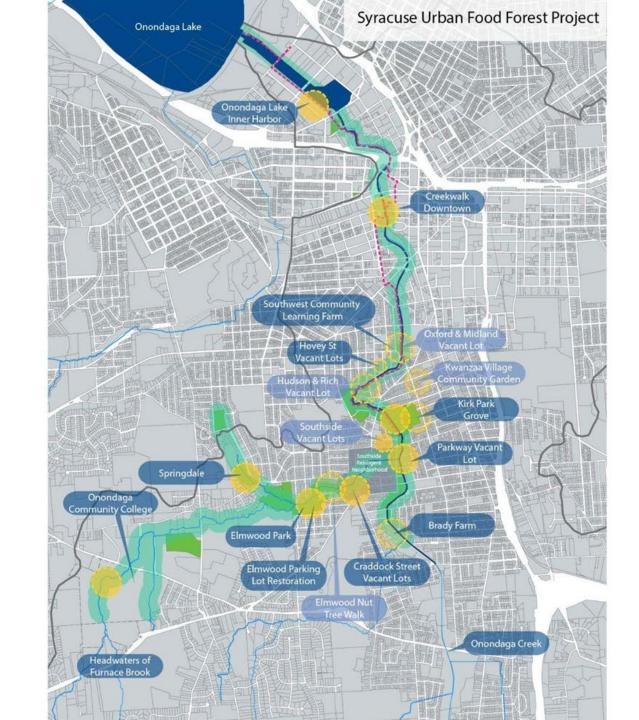


# Biocultural Restoration for Canopy, Ecology and Community Equity

**USDA Forest Service Great Lakes Restoration Initiative** 

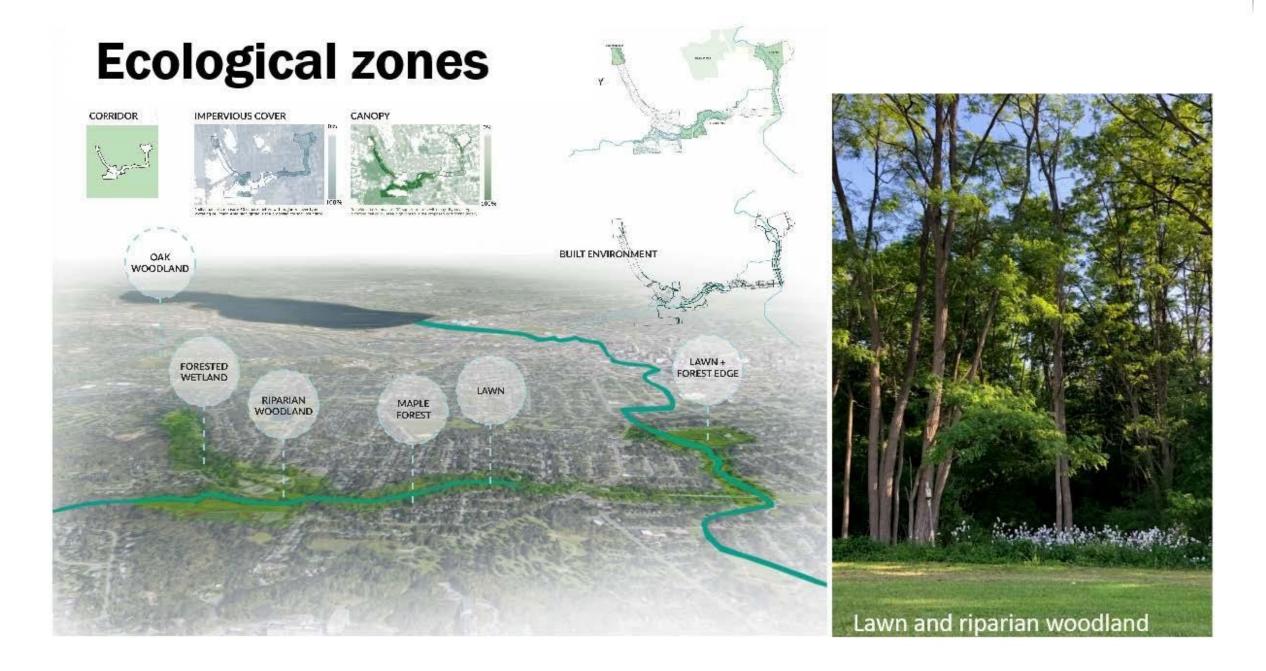
Kat Korba, Kanopy Works LLC Anne C Bellows, Professor Food Studies, Syracuse University World Forum on Urban Forests Washington D.C., 16-20 October 2023 Syracuse Urban Food Forest Project (SUFFP)

Area Map



# Overview

- US Forest Service, GLRI (2021-2024)
- Plant 920 trees and 500 shrubs on 4.0 acres along 9.0 mile corridor in Syracuse, NY
- Community engagement and education with community planting events and community food walks
- Increase intercept by 3.5 M gallons; lower stormwater impact by 0.8M gallons over 20 years



# Syracuse Urban Food Forest Project

- Research collaboration between faculty, students, community organizations in Syracuse
- Combination of naturally growing and intentionally planted food forest

 Promotes community stewardship, restores wild food literacy, and encourages human-environment interaction

Community Researcher: Antonisha Owens

Research Assistants: Jess Cherofsky, Elena Juodisius, Marie Claire Bryant, Lisa Bush, Angelia Rossi, Ethan Tyo, Briana Okebalama, Grace Taylor, Theresa Ferrigno, Anna Gugerty, Gabrielle Reagan



#### Partners

- Syracuse City Depts Parks & Rec (Urban Forestry), Neighborhood & Business Dev (NBD)
- SUNY College of Environmental Science and Forestry (ESF)
- Syracuse University (SU)
- Onondaga Earth Corps (OEC)
- SW Learning Farm
- Onondaga Community College

## Scope of Work

#### DESIGN

#### ENGAGE

DESIGN a model food forest corridor that integrates ongoing green infrastructure plantings, and ecosystem types

IA. Develop designs for 3 ecosystem types
IB. Site-specific designs for 9 planting areas ENGAGE neighborhood and business community linked to efforts to improve environmental quality and financial opportunities for local residents

IIA. Gather community input for design of plantings
IIB. Share and communicate crossgenerational foraging knowledge and practices PLANT food forest for green infrastructure systems in nine locations across a diverse economic and ecological cross-section of the city

**PLANT** 

IIIA. Volunteer coordination and training for a total of 4 large community planting events
IIIB. Maintenance. OEC will water all trees and shrubs planted for the first year after planting

#### MEASURE

MEASURE performance of food forest green infrastructure systems using quantitative modeling and qualitative assessment through evaluation

- •IVA. Water infiltration
- •IVB. Food availability
- •IVC. Community engagement

# Foraging, Public Access and the Honorable Harvest

The SUFFP increases access to public land for foraging

## Foundational Underpinnings.

VOLUNTARY GUIDELINES ON THE

#### Responsible Governance of Tenure

OF LAND, FISHERIES AND FORESTS IN THE CONTEXT OF NATIONAL FOOD SECURITY



2012

CFS



Milan Urban Food Policy Pact

15 October 2015

Gathering in Milano on the occasion of the Milan Expo Feeding the Planet, Energy for Life, we hereby state:

BY SIGNING THE MILAN URBAN FOOD POLICY PACT, WE, THE MAYORS AND REPRESENTATIVES OF LOCAL GOVERNMENTS, COMMIT TO THE FOLLOWING:

- We will work to develop sustainable food systems that are inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework, that minimise waste and conserve biodiversity while adapting to and mitigating impacts of climate change;
- We will encourage interdepartmental and cross-sector coordination at municipal and community levels, working to integrate urban food policy considerations into social, economic and environment policies, programmes and initiatives, such as, inter alia, food supply and distribution, social protection, nutrition, equity, food production, education, food safety and waste reduction;
- We will seek coherence between municipal food-related policies and programmes and relevant subnational, national, regional and international policies and processes;
- We will engage all sectors within the food system (including neighbouring authorities, technical and academic organizations, civil society, small scale producers, and the private sector) in the formulation, implementation and assessment of all food-related policies, programmes and initiatives;
- We will review and amend existing urban policies, plans and regulations in order to encourage the establishment of equitable, resilient and sustainable food systems;
- 6. We will use the Framework for Action as a starting point for each city to address the development of their own urban food system and we will share developments with participating cities and our national governments and international agencies when appropriate;
- 7. We will encourage other cities to join our food policy actions.

.... For public access to urban forests for foraging

Responsible Governance of Tenure faces. Local contradictions in Syracuse municipal code.

Sec. 17-8. Interference with trees, shrubs, grass and soil.

No person shall:

(a) Climb, peel, cut, deface, remove, injure or destroy any tree in any park or playground;

(b) Pluck, break, trample upon or interfere with any flower or shrub in any park or playground;

(c) Stand, walk, ride or lie upon any part of a park or playground laid out and appropriated for grass or shrubbery when there shall have been placed thereon a sign forbidding the same;

(d) Take, dig, remove or carry away any sward, gravel, sand, turf or earth in any park or playground;

(e) Injure, deface, disturb or befoul any part of a city park or any buildings, signs, equipment, ornament, statue, fence, bridge, structure or other property within any part or park approach or within any other area under the control of the commissioner of parks, recreation and youth programs.

(Ord. of 6-10-68; L.L. No. 10-1994)

.. Interfering with public access to urban forests for foraging

Responsible Governance of Tenure: Amending Syracuse's foraging code

\* Review of diverse US domestic codes
\* Interviews with US active foragers and municipal officers
\* Survey of Syracuse residents
\* Proposal to 'Cuse City Council Draft Municipal Code Proposal for Syracuse City Council **Plant foraging** (the practice of identifying, collecting, and consuming wild edibles, also referred to as "gathering" or "harvesting") is permitted on public land in the City of Syracuse. "Wild edibles" are defined as both naturally occurring, i.e., without any human support, and as introduced and sometimes managed, as in the case of planted juneberry trees or fiddlehead fern. Permission to forage is contingent on its practice as respectful and responsible. Respectful and responsible foraging considers plants' sustainable reproduction needs, other human and non-human foraging interests, and never allows the taking of more than half of the existing edibles in any given space, as articulated in **Traditional Ecological Knowledge systems such as "the** Honorable Harvest." Foragers assume responsibility for their practice. The City of Syracuse may not be held **liable** for misidentification of plants, allergic reactions to plant consumption, or consequences of foraging practices (e.g. from poison ivy or deer tick presence).

#### Re-thinking Dietary Diversity (good nutrition) in an **Expanded Food System** that Includes Foraging Wild Edibles

We reviewed antioxidant phytochemicals that fight chronic disease

- Vitamin A
- Vitamin C
- Vitamin E
- Selenium
- Riboflavin

- Cancer
- Coronary Heart Disease
- Diabetes
- High blood pressure
- Kidney disease
- Obesity



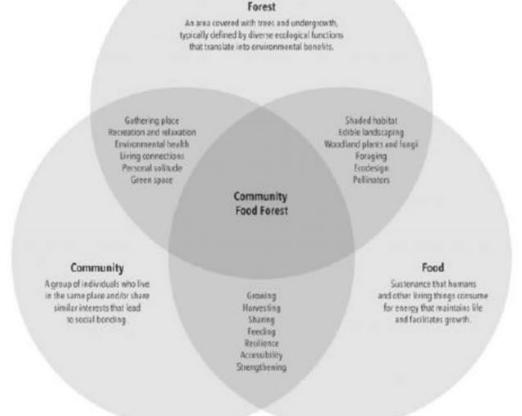
## Public Health

#### Nutrition Findings

 Valuable forageable foods can be found in your own neighborhood. They are rich in antioxidant phytochemicals and are at least as nutritionally valuable as commercial varieties.

 There is missing data on nutritional content of most wild forageable foods (largely free, "whole", often in public commons) but lots of data on processed foods.

## **Social Components of Community Food Forests**



From Bukowski and Munsell. The Community Food Forest Handbook

The manner in which a food forest is integrated into the fabric of a community is as at least important as the trees that are planted and the food that is produced

Bukowski & Munsell, The Community Food Forest Handbook



#### **Community food walks**

#### FORAGE YOUR LUNCH @ Elmwood and Kirk Park\*

WEDNESDAY, JULY 22ND 12:00-12:45 PM

Join us to learn and share: What plants you can ect and find in Svracuse parks and public places How to prepare and cook taraged plants



\*Access this virtual four by enailing syrurbanfoodbrest@gmail.com for the zoom link







# Public Health, Community Engagement, and Environmental Justice





## ENGAGE

Planting w/ Youth from OASIS SCHOOL





## Chinkapin Oak, Quercus muehlenbergii



# Chinkapin Oak, Quercus muehlenbergii

DECOMPOSITION

POLLUTANTS

2

#### OAK DOMINATED FORESTS

#### **COMMON SPECIES**

White Oak Ouercus Alba Chestnut Oak Ouercus Montana Northern Red Oak Ouercus Rubra Black Oak Ouercus Velutino Sugar Maple Acer Socchorum American Beech Fague Grandfolda

SOAKIN WATER



Extremely important

## **Bird community in food forest**



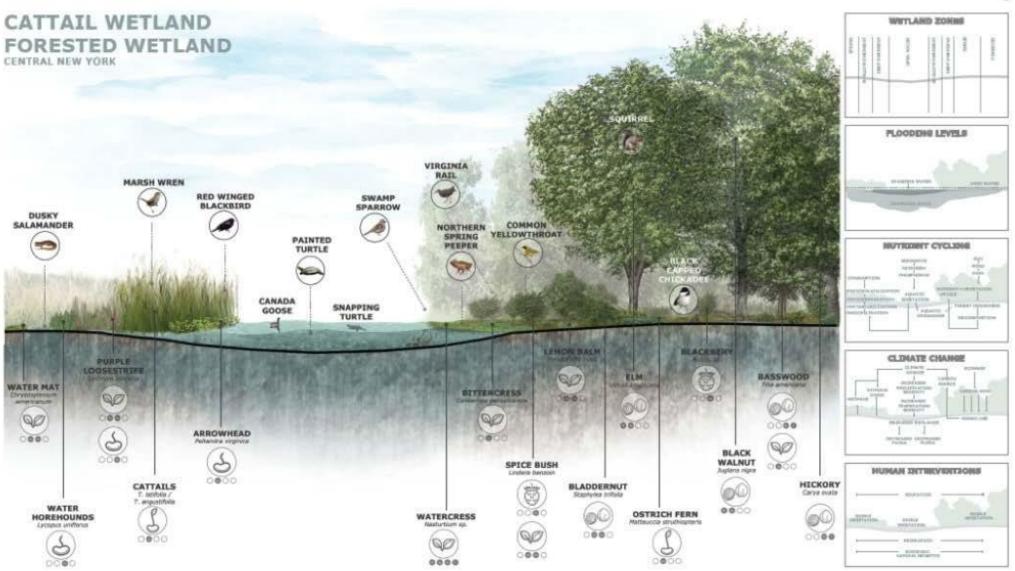
- Quantification of bird community associated with food forest species
- Evaluation of mulberry and serviceberry
- 12 individuals of each tree
- During fruiting (June and July 2020) and during fall

#### **Bird community**



- Over 20 bird species found associated with mulberry and serviceberry
- Paired sampling revealed that serviceberry and mulberry support more species than without fruiting serviceberry and mulberry
- Serviceberry appears to have a greater influence on bird community than mulberry

#### **Ecological zones**



5.0

#### **Green Infrastructure**

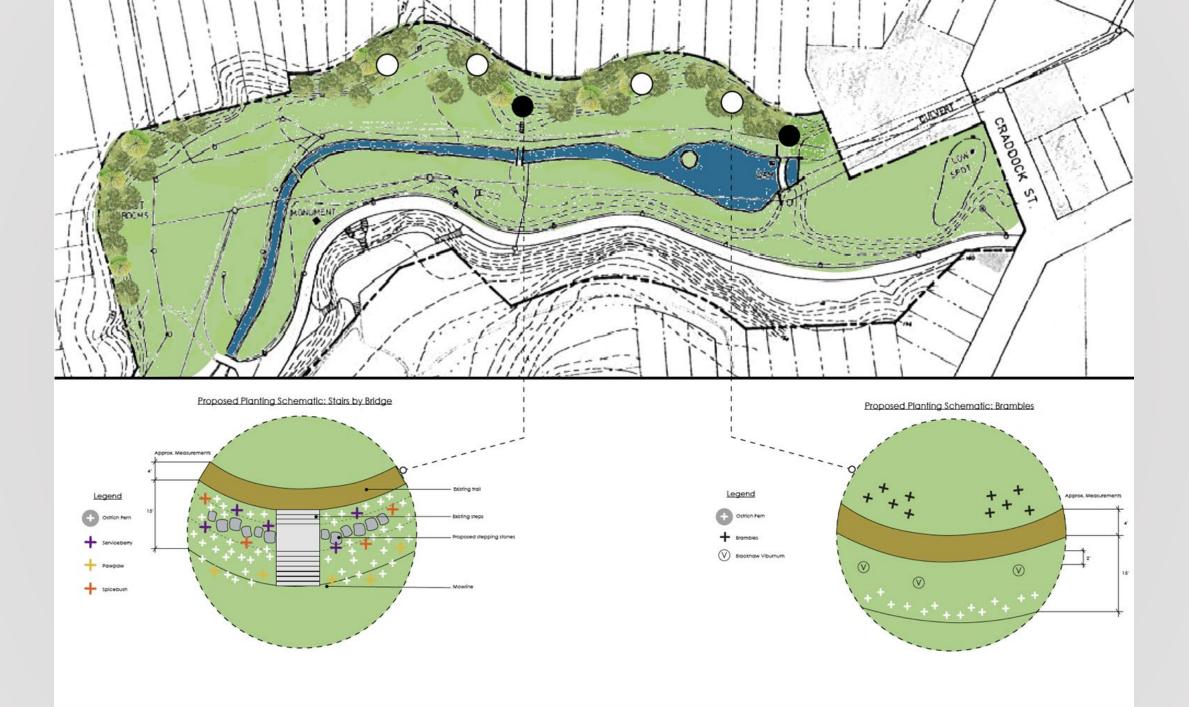
In addition to creating edible ecologies, the SUFFP provides important ecological services



#### NOVEL ECOSYSTEM STRUCTURE + FUNCTION: PARKWAY: ELMWOOD PARK PROPOSED PLANT SPECIES

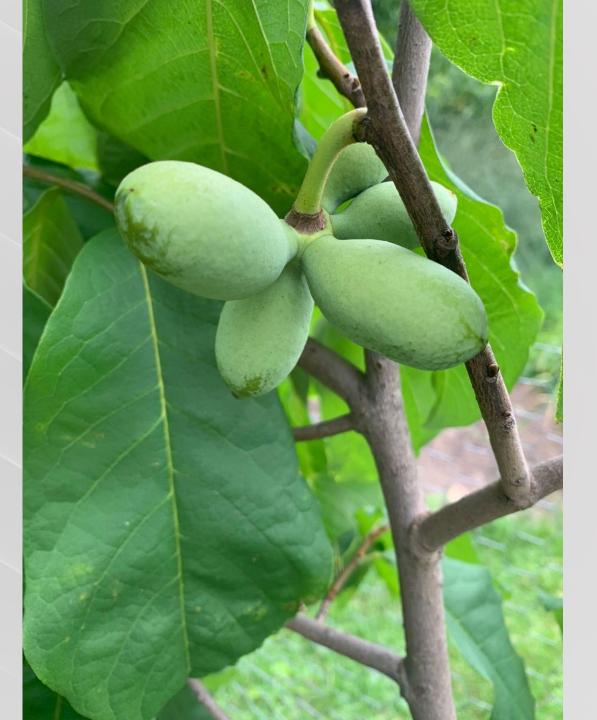






# Riparian

## Pawpaw, Asimina triloba







# **Upland Forest**

# Shagbark Hickory, Carya ovata



# Forest Crop Trifecta



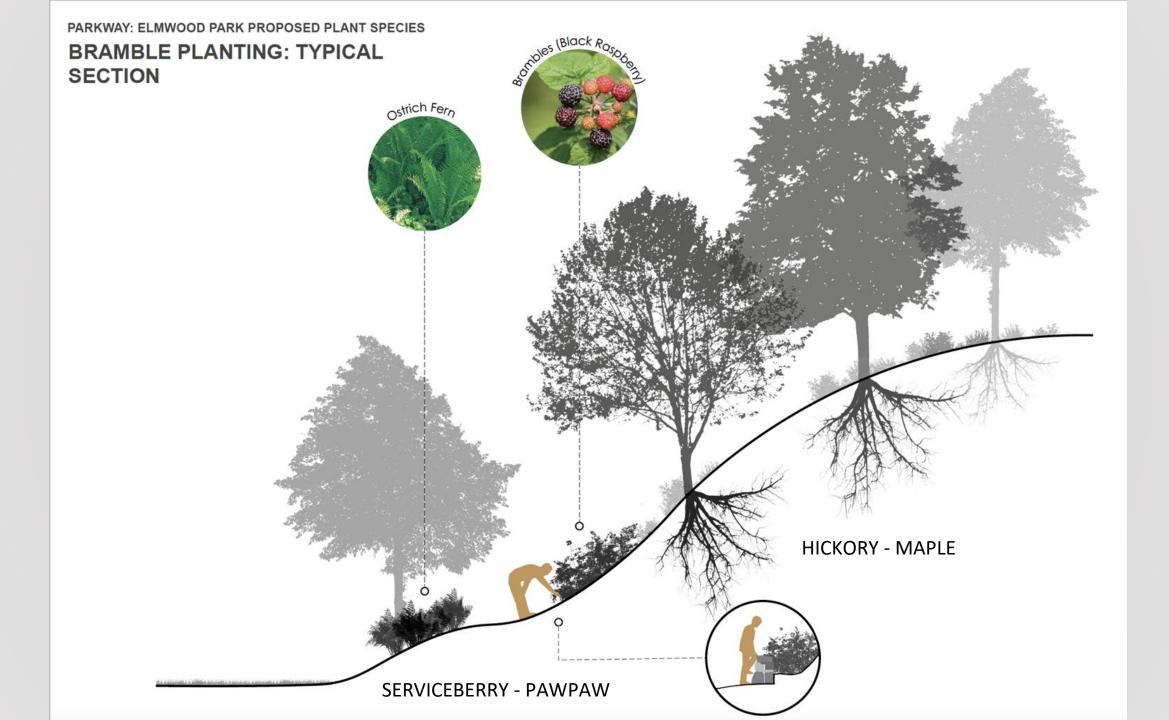








#### Ramns



# Shagbark Hickory (Carya ovata)



# Kingnut Hickory/ Shellbark Hickory (Carya laciniosa)



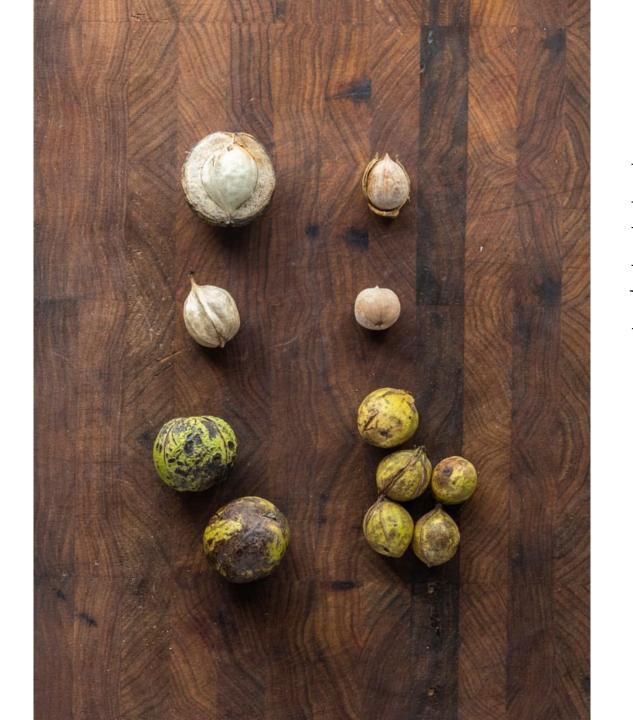
## Bitternut Hickory (Carya cordiformis)



## Shagbark Hickory Nuts



Nut Weasel

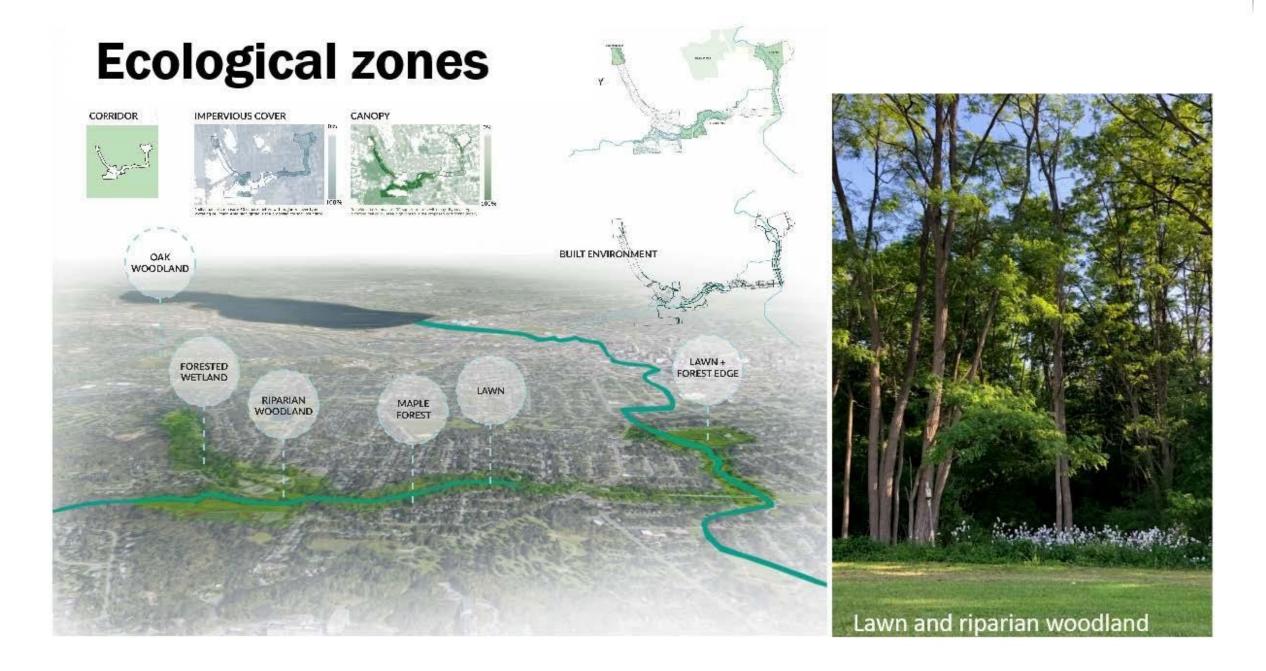


## Bitternut Hickory Nuts



## Bitternut Hickory Oil

Sam Thayer - <u>https://foragerchef.com/sam-thayers-bitternut-hickory-nut-oil/</u>



#### **HUDSON & RICH LOTS**

Lindera benzoin Spicebush

Vaccinium angustifolium Lowbush Blueberry

Ribes rubrum Red Currant



Rubus ursinus Darrow Blackberry

Rubus idaeus Latham Red Raspberry

Prunus virginiana Chokecherry

Amelanchier canadensis Serviceberry



Quercus Muhlenbergii Chinkapin Oak

Castanea dentata x ... Hybrid Chestnut

Prunus americana Wild Plum

Rhus Aromatica Low Gro Sumac

Mix of: Baptisia, Coneflower, Aster, Goldenrod, Little Blue Stem, Wild Bergamot, Anise Hyssop

#### Vacant Lots

(QM)

GN

(CM)

00

00

1" = 50'

N

AC (PA)

00

AC

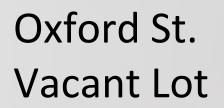
(PA)

(QM)

80

PA







#### **ONONDAGA EARTH CORPS**





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### Anni Bellows, SU Food Studies Department acbellow@syr.edu

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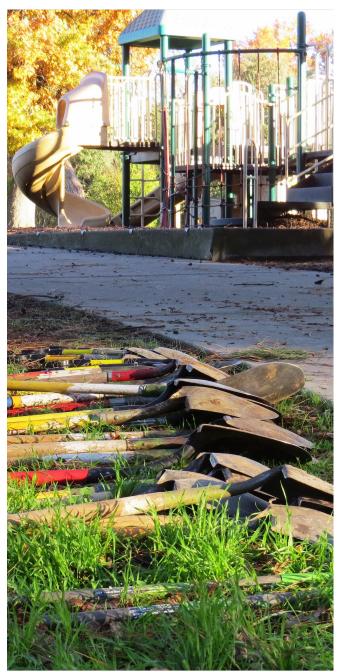
Holistic stewardship - engaging the public in all aspects of trees from seed to slab



#### Presented by

Jessica Sanders PhD, PMP Executive Director Sacramento Tree Foundation















## **Messaging - from Seed to Slab**







#### Engaging the next generation of environmental stewards.



#### Restoring natural spaces with kids of all ages







Partnering with undercanopied communities to create lasting change.



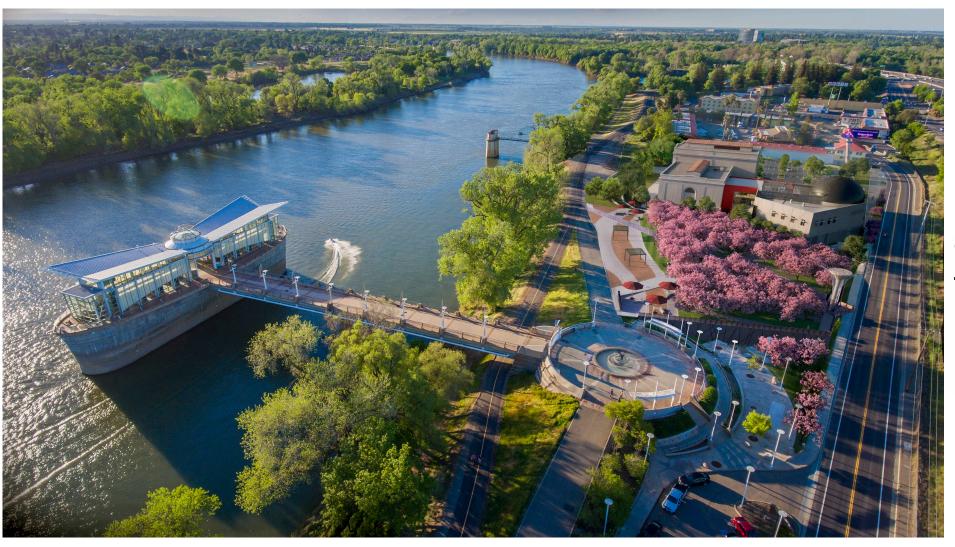




#### Honoring our region's trees when they are removed





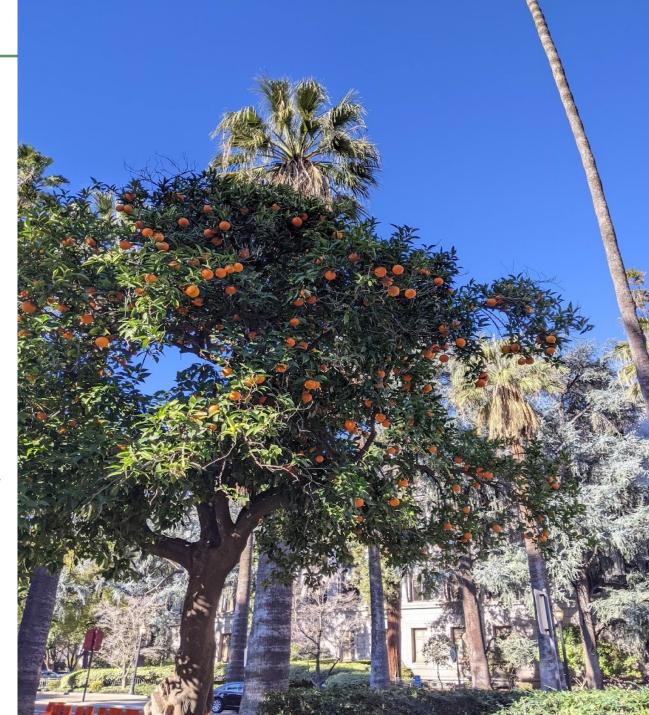


Placemaking for communities with trees



# Focusing on equity internally

Our Healthy Forest is a Diverse One Our mission is to grow thriving communities through stewardship of our urban forest. We seek to honor the diversity and roots of this region by prioritizing equity internally and externally. We bring our whole selves and celebrate one another. From seed to slab, we work with communities to create live-able and loveable communities for everyone. And by everyone, we mean everyone.



# Thank you

Jessica Sanders PhD, PMP | Sacramento Tree Foundation

**Executive Director** 













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World Forum on Urban Forests



#### An ongoing study:

## Priorities for afforestation areas on a national scale



#### Presented by

Chiara Gibertini Giorgio Vacchiano, Fabio Salbitano, Maria Chiara Pastore Livia Shamir, Luis Pimentel and Simone Marchetti







What already exists? Map of natural tree restoration potential



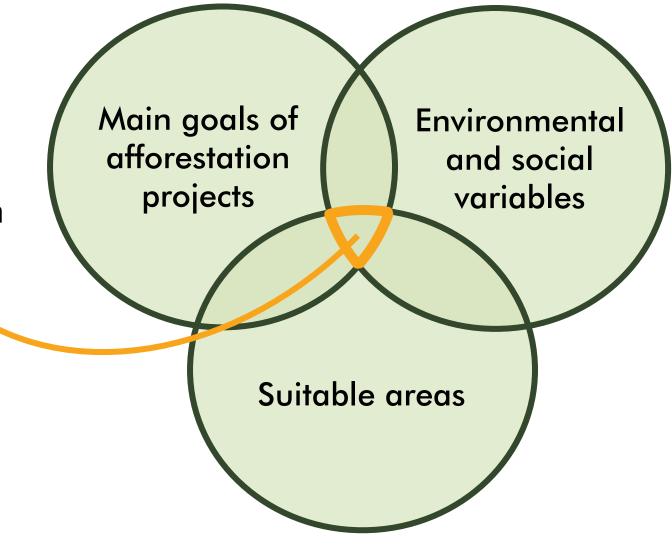
Mapping of priority areas for afforestation to maximize benefits





## **Objective**

Mapping of priority areas for afforestation on a national scale





## Suitable areas

#### Excluding:

- X Existing forests Source: Corine Land Cover 2018
- X Impervious surfaces Source: Corine Land Cover 2018
- X Protected areas Source: World Database on Protected Areas (WDPA); Ramsar Sites Information Services
- X Wetlands Source: Corine Land Cover 2018
- X Elevations above 1600 m

Agricultural areas → agroforestry and/or planting along field edges

#### Urban areas







2nd World Forum on Urban Forests

Washington DC, 2023

#### Main goals of afforestation projects

- Ecological connectivity and biodiversity conservation
- Restoration of degraded areas and ecosystems
- Protection from hydrogeological instability
- Carbon sequestration
- Urban afforestation and provision of ecosystem services
- Wood production
- Combating desertification/drought

Ecosystem Services & Biodiversity (Source: FAO)



Habitat for species; Pollination



Habitat for species



Moderation of extreme events



Carbon sequestration and storage

Local Climate Air Quality; Recreation and mental and physical health; Aesthetic appreciation and inspiration for culture, art and design



Raw materials



Regulation of Water Flow



# **Environmental and** social needs Variables

- Spatially explicit
- Mapping available on a national scale •

- Distribution of protected and/or natural **areas** (e.g. distance to the nearest protected **area** - Source: WDPA; Ramsar Sites Information Services)
- Climatic and environmental conditions (e.g. future temperature trend - Source: ClimateEU)
- Land use (e.g. habitat fragmentation Source: G.Vacchiano & S.Galimberti)
- •Anthropic presence (e.g. population density per municipality - Source: ISTAT 2022)
- Prevention (e.g. hydrogeological risk from superficial landslides and floods - Source: ISPRA)



#### Main goals of afforestation projects



Variables

There are others?

There are others? What are their wheights? **Survey** among experts in:

- Forestry
- Agronomy
- Ecology

from all regions of Italy

Structured interview

Semi-quantitative data (high, medium, low weight of variables)

Distribuited online



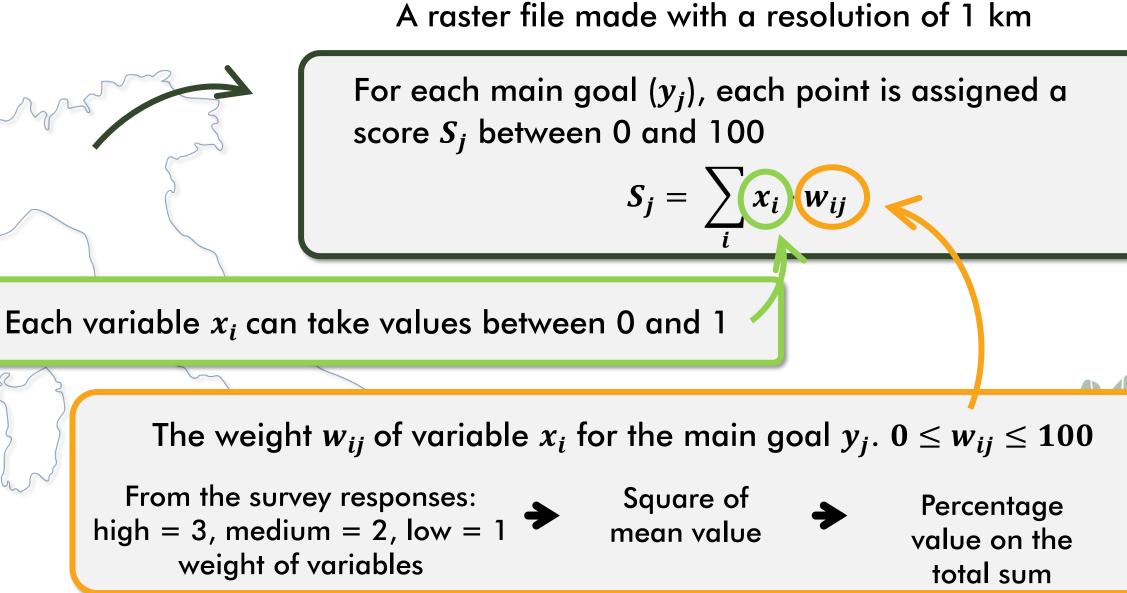
#### A raster file made with GIS with a resolution of 1 km

For each main goal  $(y_j)$ , each point is assigned a score  $S_j$  between 0 and 100

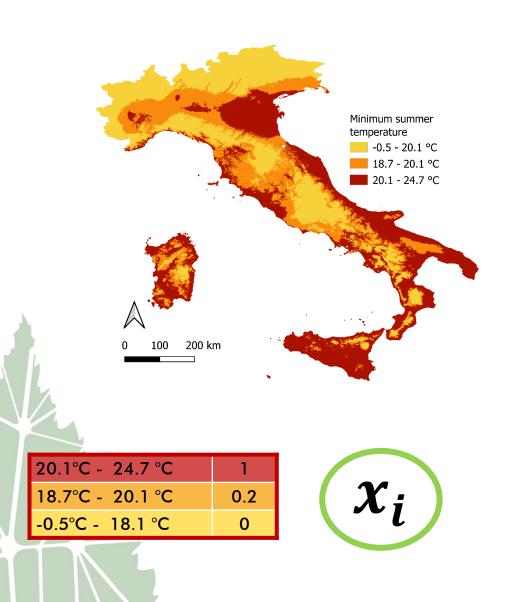
$$S_j = \sum_i x_i \cdot w_{ij}$$



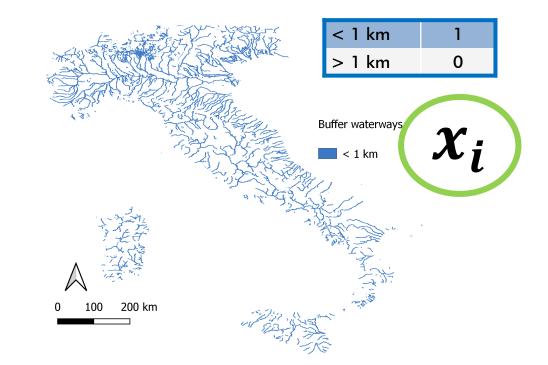




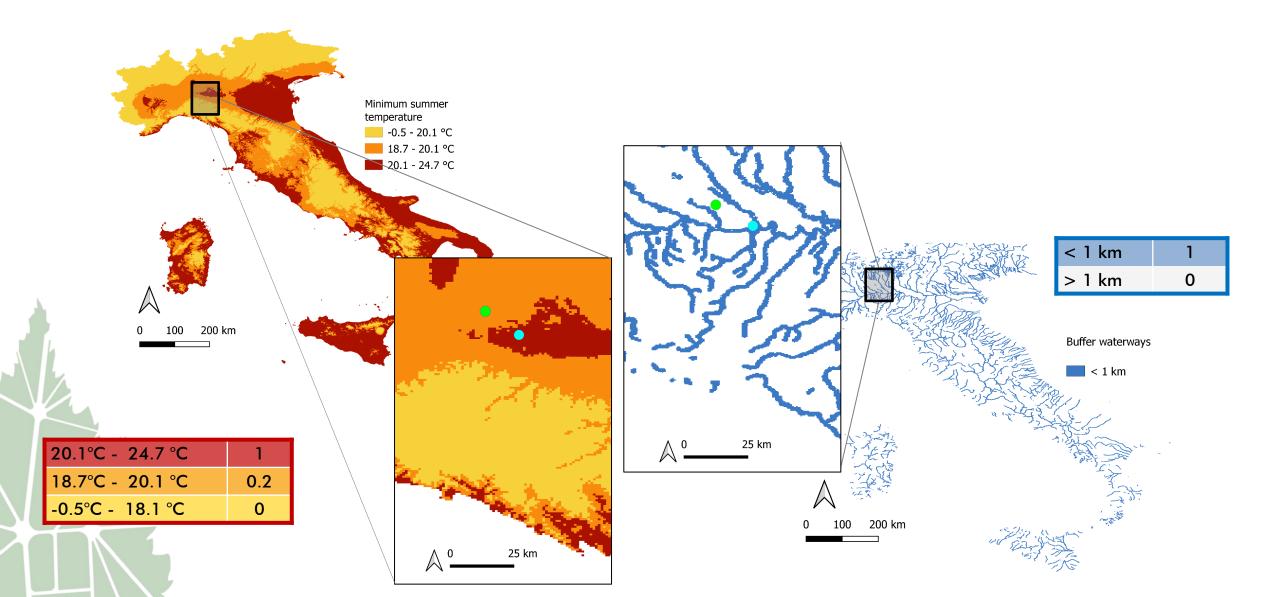


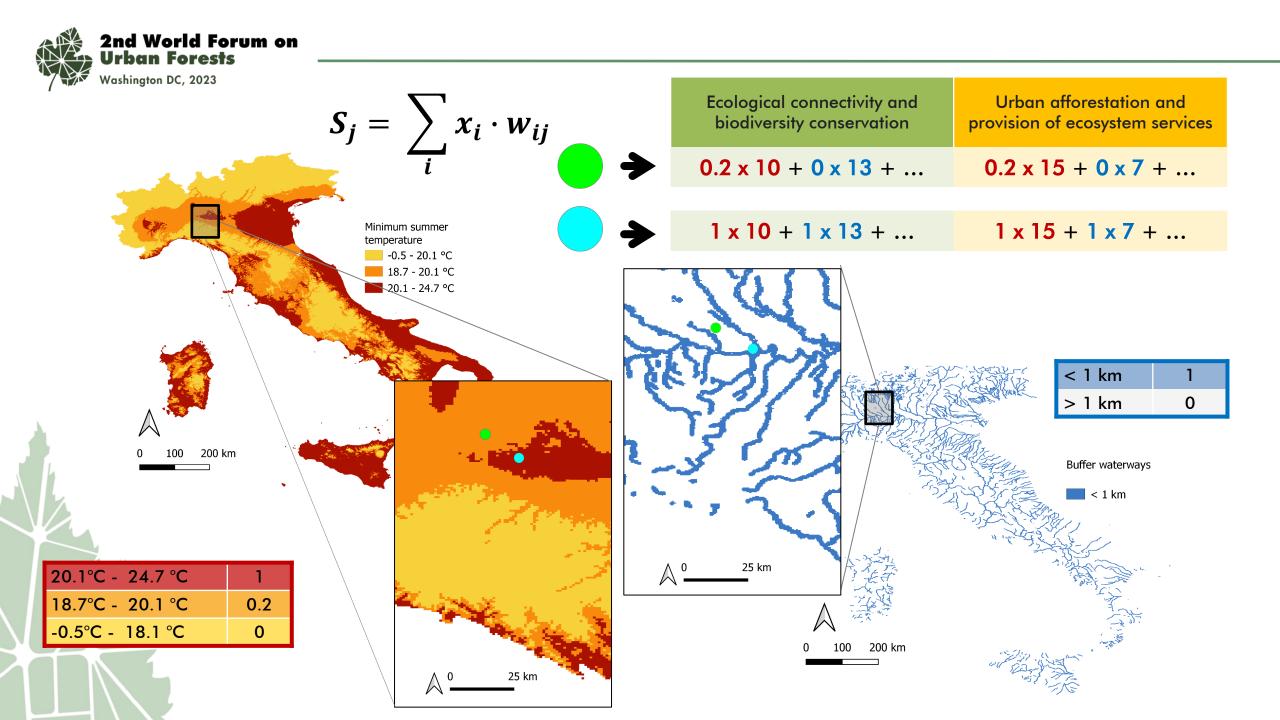


	Wij		
	Ecological connectivity and biodiversity conservation	Urban afforestation and provision of ecosystem services	
Minimum summer temperature	10	15	
Proximity to waterways	13	7	









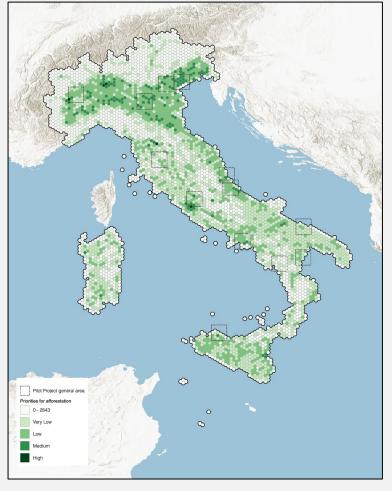


Survey results		Ecological connectivity and biodiversity conservation	Urban afforestation and provision of ecosystem services	
	Habitat fragmentation	17	8	
	Proximity to roads and railways	7	9	
	Presence of tourist/cycling itineraries	7	11	
<ul> <li>&gt; 200 responses</li> </ul>	Minimum summer temperatures	8	13	
	Future temperature trend	10	13	
<ul> <li>From all regions of Italy</li> </ul>	Exceeding the daily PM10 limit value	7	14	
	Density population per municipality	3	11	
	Hydrogeological risk from superficial landslides and floods	10	5	
	Post-fire recovery potential	9	5	
	Proximity to waterways	11	7	
	Distance from protected natural areas	10	4	

(W<sub>ij</sub>)

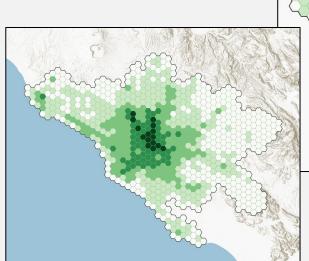


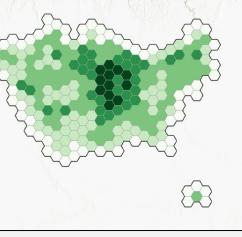
## Ecological connectivity and biodiversity conservation



## Preliminary results of mapping

#### Urban afforestation and provision of ecosystem services on the 14 Italian metropolitan cities





Metropolitan Cities of Milan and Rome



#### Conclusions

- These maps can be used as first support to planning decisions at the regional or provincial scale.
- The same system of scores could be used on a much finer scale to optimize the actual location of each afforestation project  $\rightarrow$  Urban forest

For the future:

- Expand the study to other main goals;
- Add more variables →
   Attention to multicollinearity problems
   Availability of adequate maps on a national scale

# Thank you

#### **Chiara Gibertini University of Milan** Chiara.gibertini@ unimi.it

Chiara Gibertini<sup>1</sup>, Giorgio Vacchiano<sup>1,2</sup>, Fabio Salbitano<sup>2,3</sup>, Maria Chiara Pastore<sup>4</sup>, Livia Shamir<sup>5</sup>, Luis Pimentel<sup>5</sup> and Simone Marchetti<sup>5</sup>









<sup>1</sup> Department of Agricultural and Environmental Sciences, Università degli Studi di Milano, Italy; <sup>2</sup> Fondazione Alberltalia ETS, Santa Sofia, Italy; <sup>3</sup> Department of Agriculture, Università degli studi di Sassari, Sassari, Italy; <sup>4</sup> Politecnico di Milano, Milan, Italy; <sup>5</sup> Stefano Boeri Architetti, Milan, Italy













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## Overcoming Barriers to Community Tree Planting in Chicago, Illinois, USA



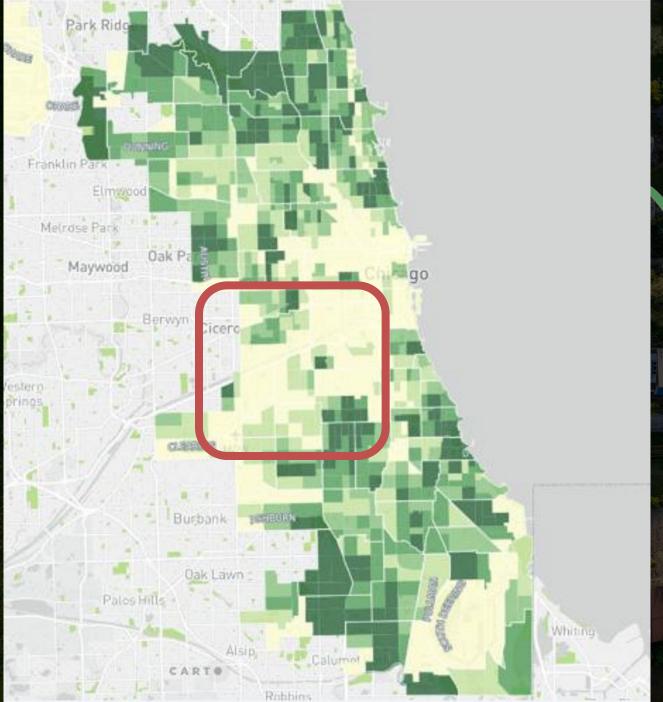
#### Presented by

Tom Ebeling Community Arborist

Openlands









# **Openlands**

Openlands protects the natural and open spaces of northeastern Illinois and the surrounding region to ensure cleaner air and water, protect natural habitats and wildlife, and help balance and enrich our lives.

## Openlands Forestry: Overcoming Barriers through Partnerships

Over 9,000 trees to date

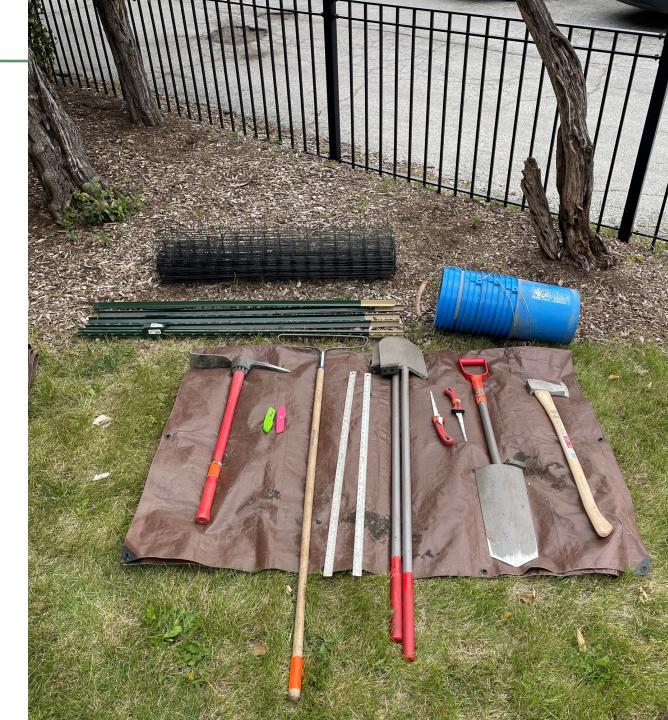
Over 1,900 TreeKeepers trained

Greater than 90% success rate for trees



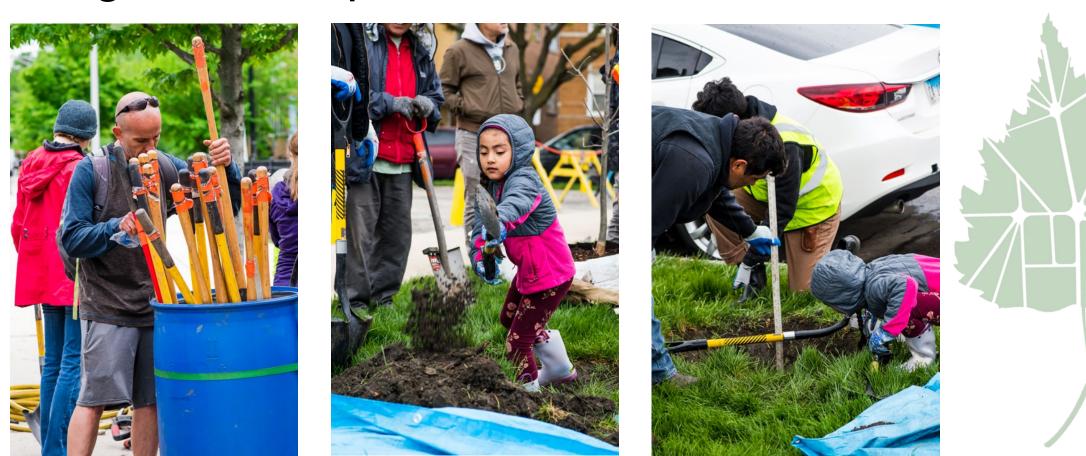
# Barriers to Tree Planting

- Access to land, tools, trees or time
- \* Expertise
- Maintenance
- City ordinances
- Language





### **Barriers**: Access to land, tools, trees or expertise; prohibitive city ordinances **Addressing barriers**: Openlands TreePlanters Grant









### **Barriers**: Maintenance; expertise **Addressing barriers**: Openlands TreeKeepers; Arborist Registered Apprentices

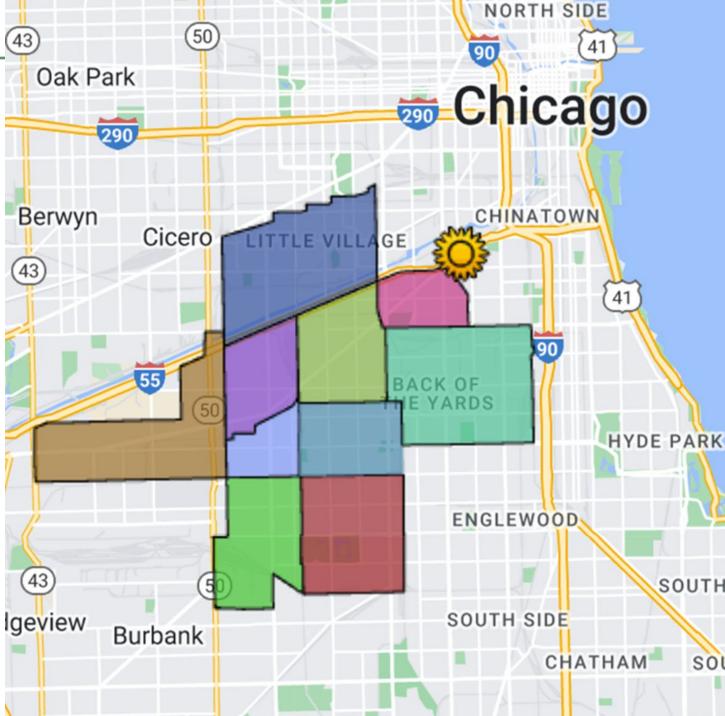








- **Barriers**: Language, lack of free time, maintenance ability
- Addressing barriers: Southwest Side priority area, Spanish TreeKeepers, stipends, building staff capacity









#### Plantación de árboles

#### ¿DESEA PLANTAR GRATUITAMENTE UN ÁRBOL EN SU ARCÉN?

¡Deja que Openlands sepa que quieres árboles en su barrio!



Utilice el siguiente código QR para solicitar un árbol (o árboles) para su acera, y le pondremos en contacto con alguien que esté organizando una plantación de árboles en su comunidad. Se le pedirá que cuide del árbol durante 3 años, principalmente regándolo una vez a la semana durante la temporada de crecimiento.



Inquilinos pueden someter aplicaciones si lo comunican con los dueños de la propriedad.

#### ¿Preguntas?

Nuestros expertos están a su disposición.

Tom Ebeling

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### Overcoming the Barriers: Partnerships, Training, Capacity Building

Navigating bureaucracy, lending legitimacy and expertise

Leveraging corporate and institutional partnerships for community vision

Training and empowering volunteers, developing the forestry workforce

Stipends, accessible materials and programming



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World Forum on Urban Forests

Session 2.4: The Divide: Promoting equal distribution of green spaces and environmental services

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