

Session 2.4

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

Chair: Matt Spitsen





City of Pittsburgh Tree Equity Initiatives



Presented by

Michael P Kelley, MNR

Pittsburgh, Pennsylvania

America's Most Livable City

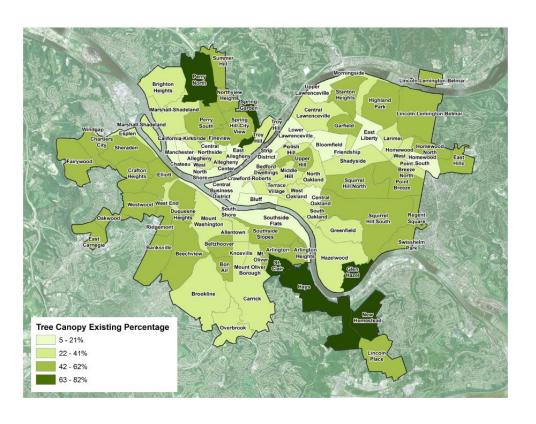






Contributing Factors to Canopy Inequity

- 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

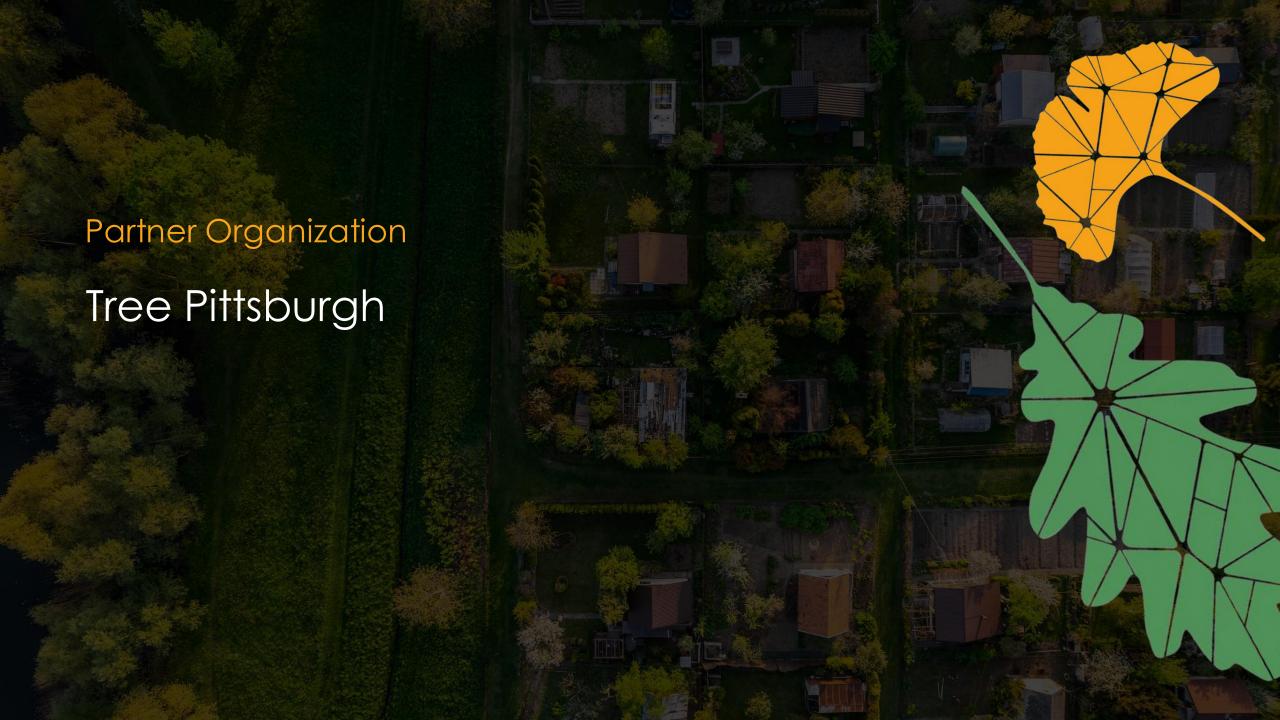




Show Up and Own Up

- 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







ReLeaf Plans







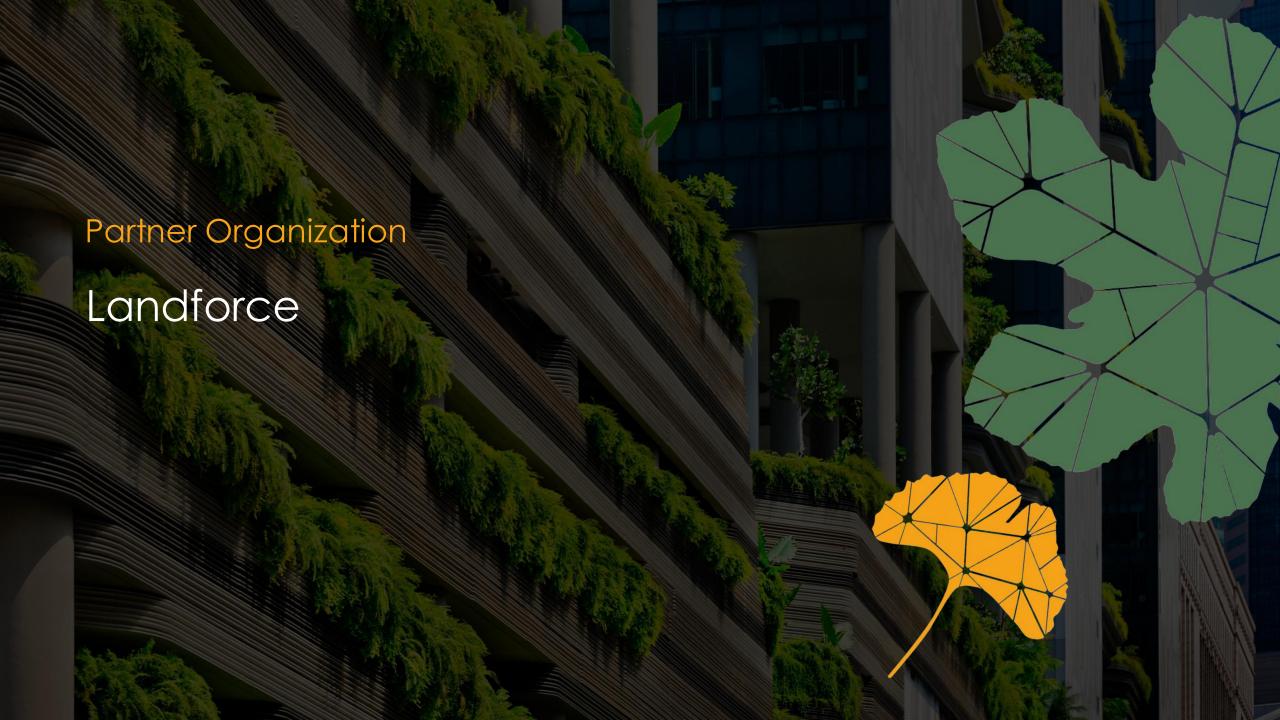


TreeVitalize

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.







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





Help cities and communities create catalytic change

- Making the case for sustained data-informed communitycentered 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 treeequitable neighborhood and city look like
- Supporting planting initiatives in neighborhoods facing high levels of climate risk







Trust Trees





Thank you

Michael Kelley, MNR | City of Pittsburgh



Michael.Kelley@pittsburghpa.gov

















2nd World Forum on Urban Forests 2023







Centering Community in Community Forests

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



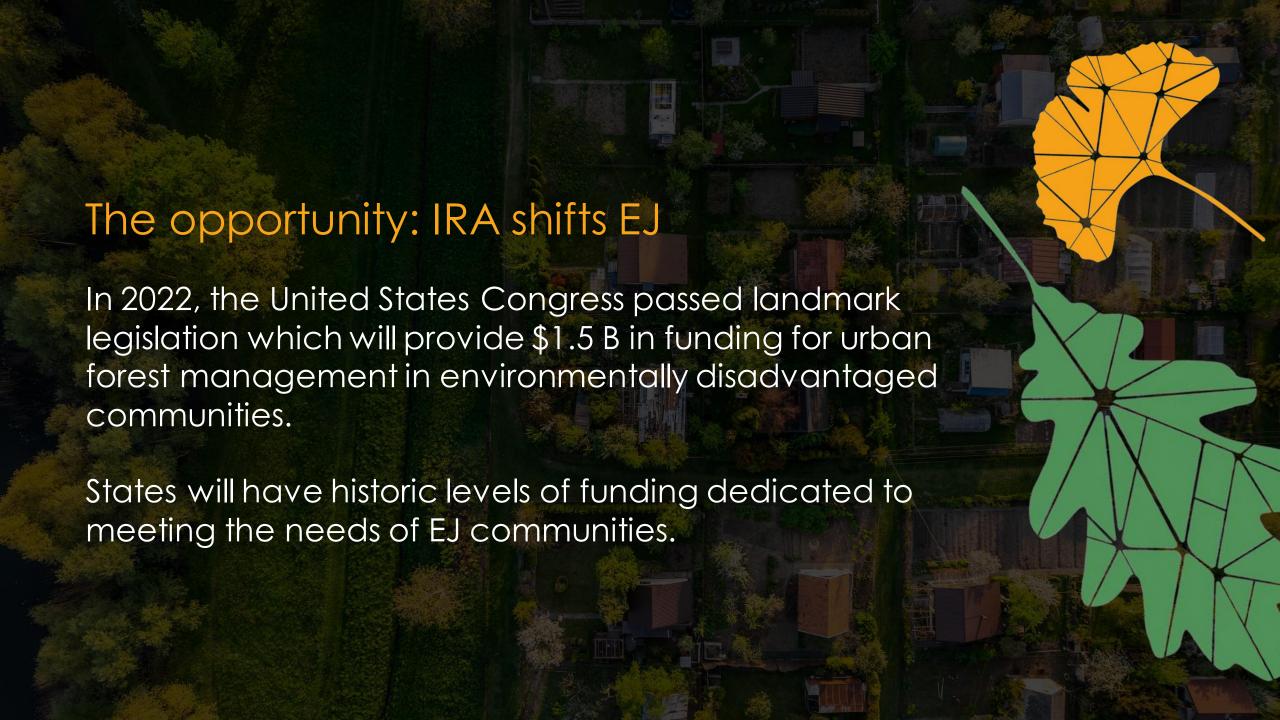
Presented by

Colleen Berg, Molly Codding, Kalaia T

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





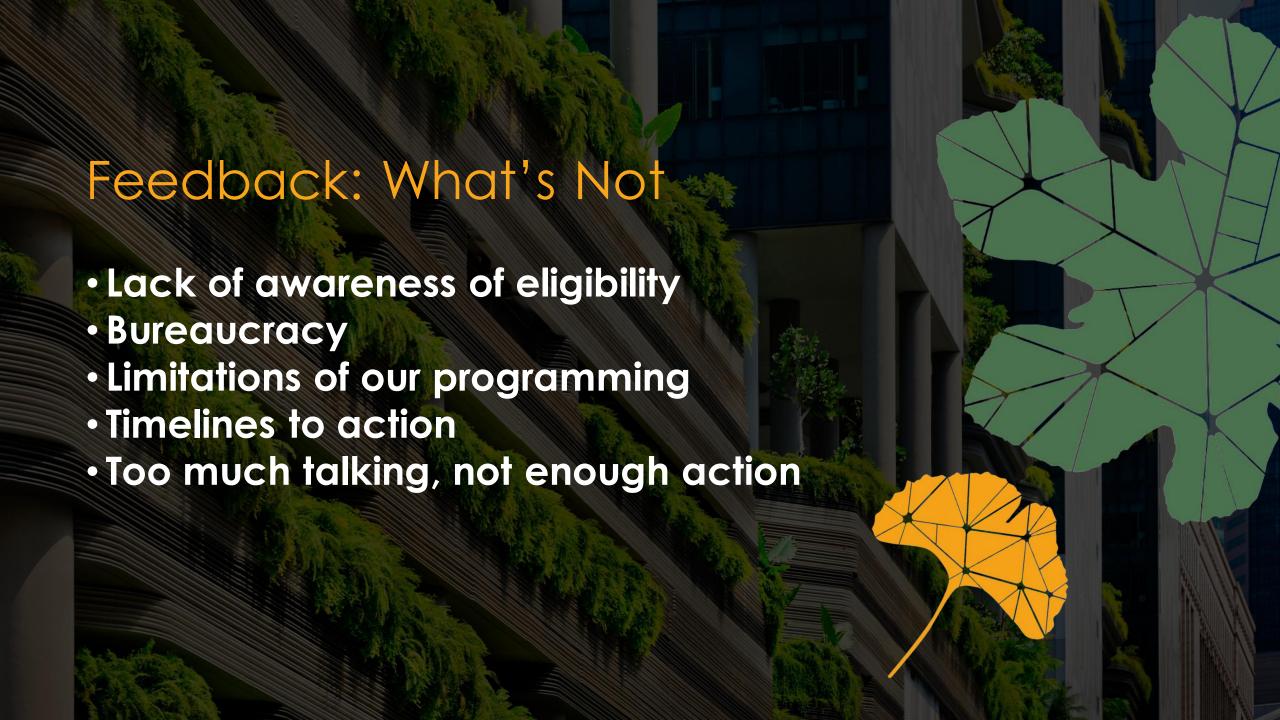




- 1. Understand community readiness and motivation to accept trees
- 2. Make sure planting projects are not drop it and forget it
- 3. Help communities maintain and care for trees through education
- 4. Address financial burdens of tree care
- 5. Provide meaningful employment for community members
-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









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





Diverse Partnerships: Together we can advance justice

LA: Food justice Citrus Program

OH: Education and action in community





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

















2nd World Forum on Urban Forests 2023





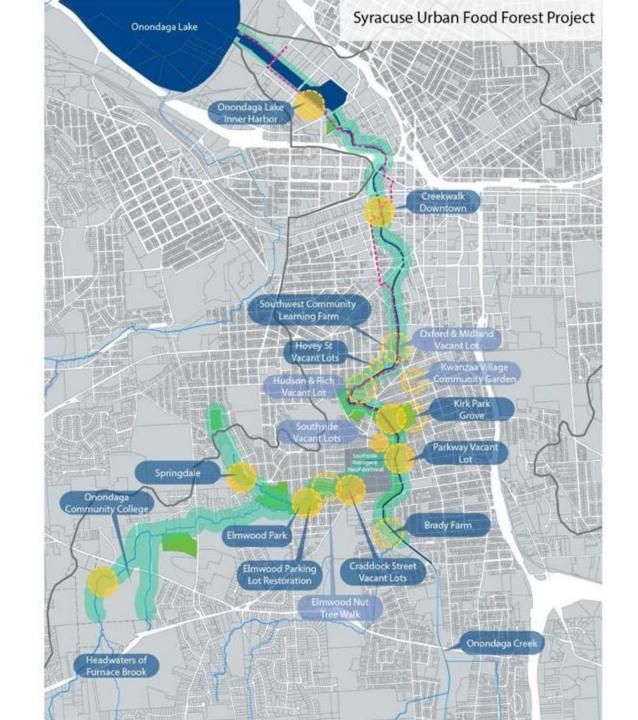


Biocultural Restoration for Canopy, Ecology and Community Equity

USDA Forest Service Great Lakes Restoration Initiative

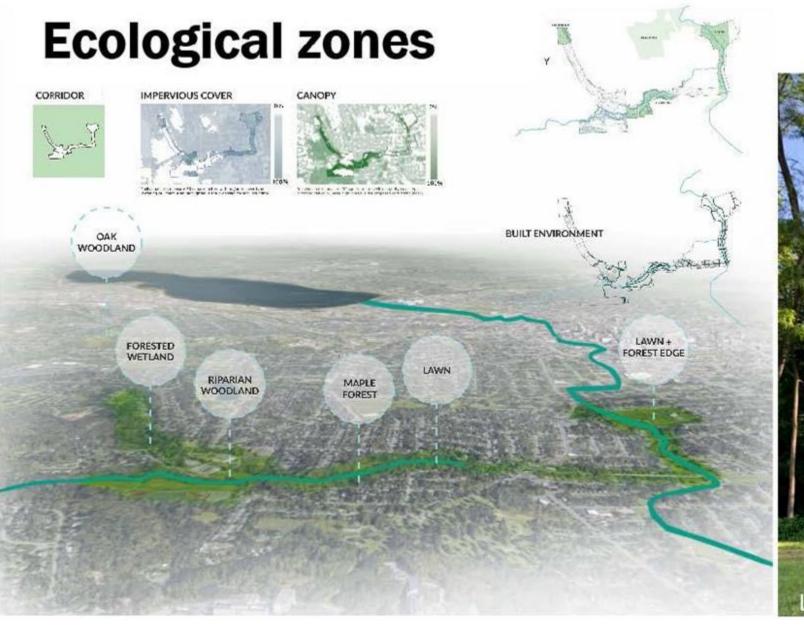
Kat Korba, Kanopy Works LLC Anne C Bellows, Professor Food Studies, Syracuse University World Forum on Urban Forests Washington D.C., 16-20 October 2023 Syracuse
Urban
Food
Forest
Project
(SUFFP)

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

PLANT

MEASURE

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

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

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



Foundational Underpinnings...

VOLUNTARY GUIDELINES ON THE

Responsible Governance of Tenure

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



2012





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;
- 4. 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;
- 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;
- 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



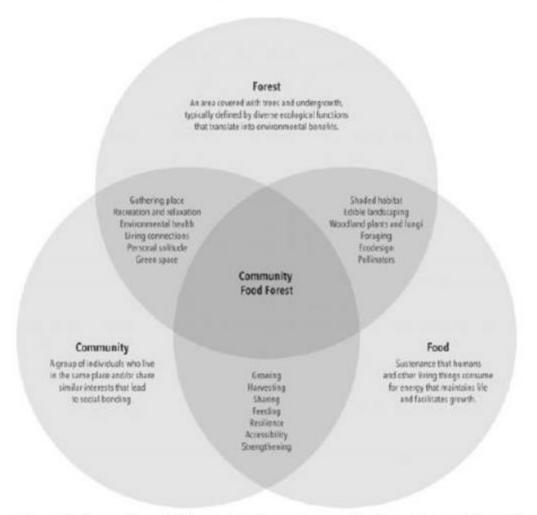
Public Health

Nutrition Findings

1. 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



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

From Bukowski and Munsell. The Community Food Forest Handbook



Community food walks









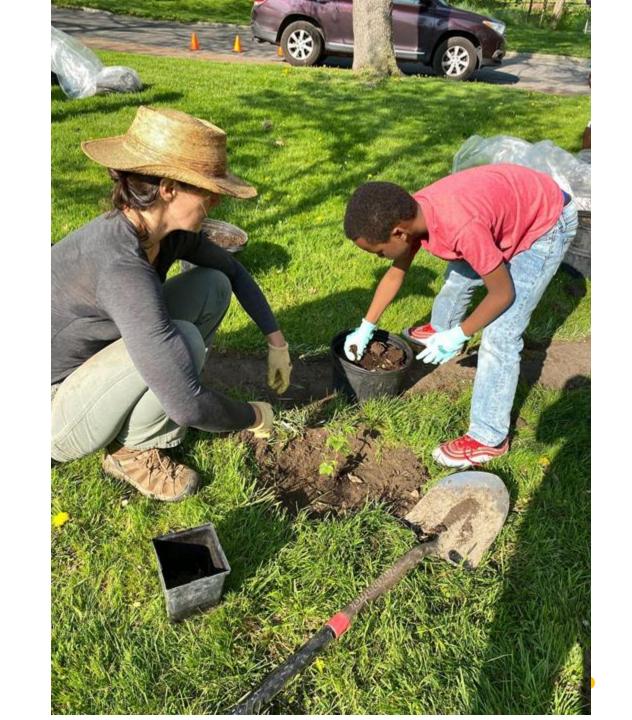
Public Health, Community Engagement, and Environmental Justice





ENGAGE

Planting w/
Youth from
OASIS
SCHOOL



Chinkapin
Oak, Quercus
muehlenbergii



Chinkapin Oak, Quercus muehlenbergii





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

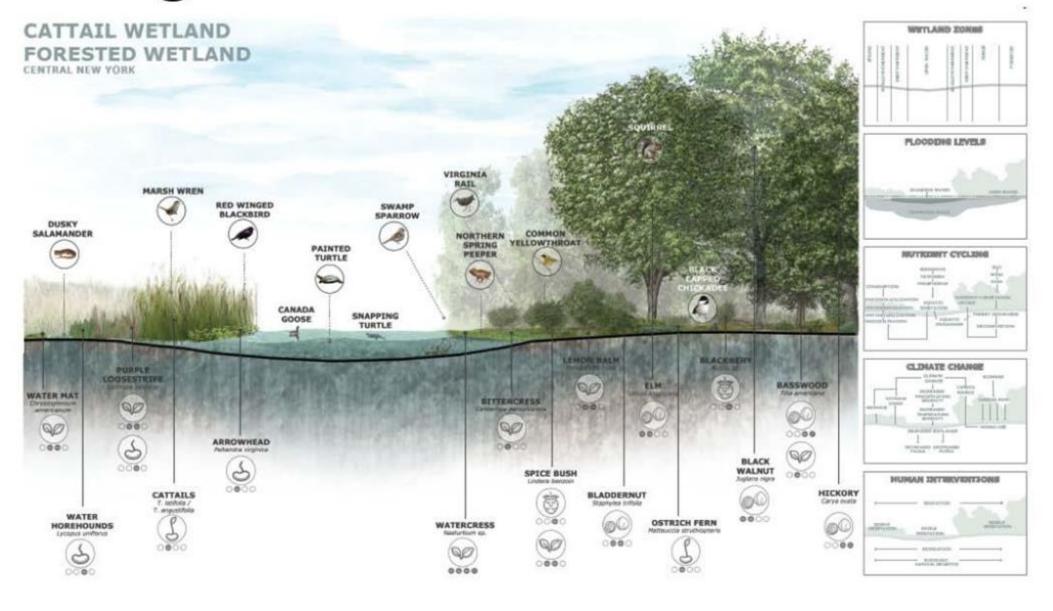


Bird community



- 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

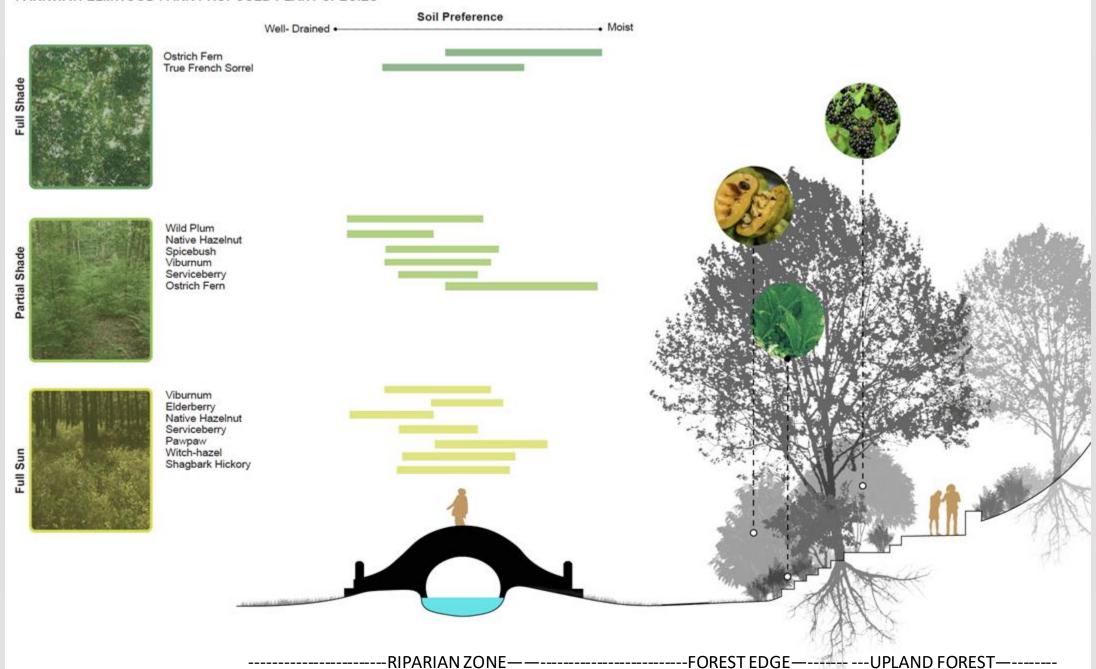


Green Infrastructure

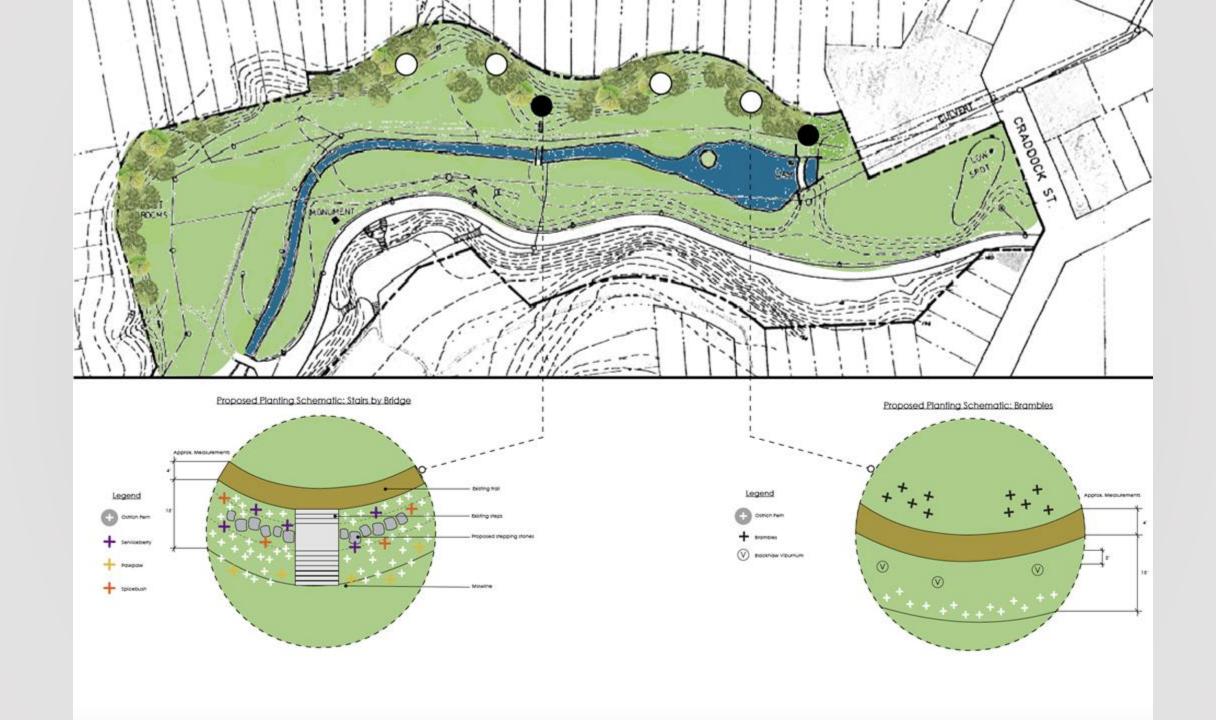
In addition to creating edible ecologies, the SUFFP provides important ecological services



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

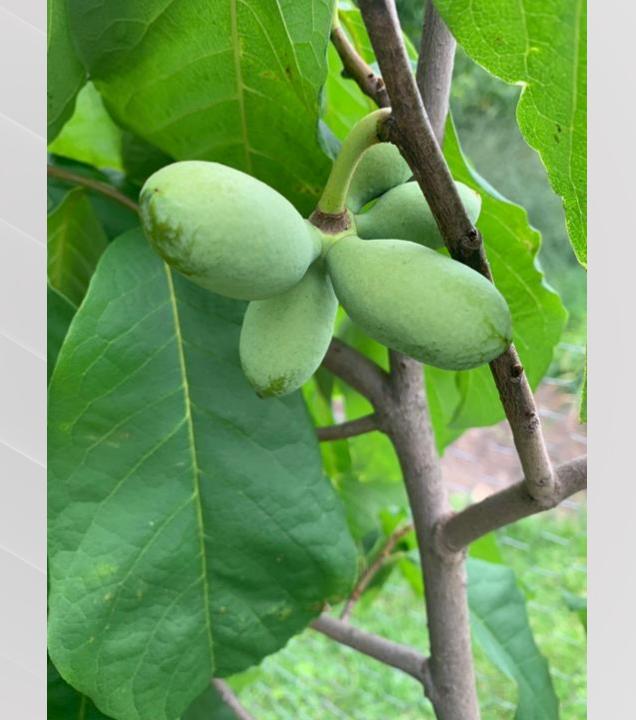






Riparian

Pawpaw, Asimina triloba







Upland Forest

Shagbark Hickory, Carya ovata



Forest Crop Trifecta

Sugar Maple



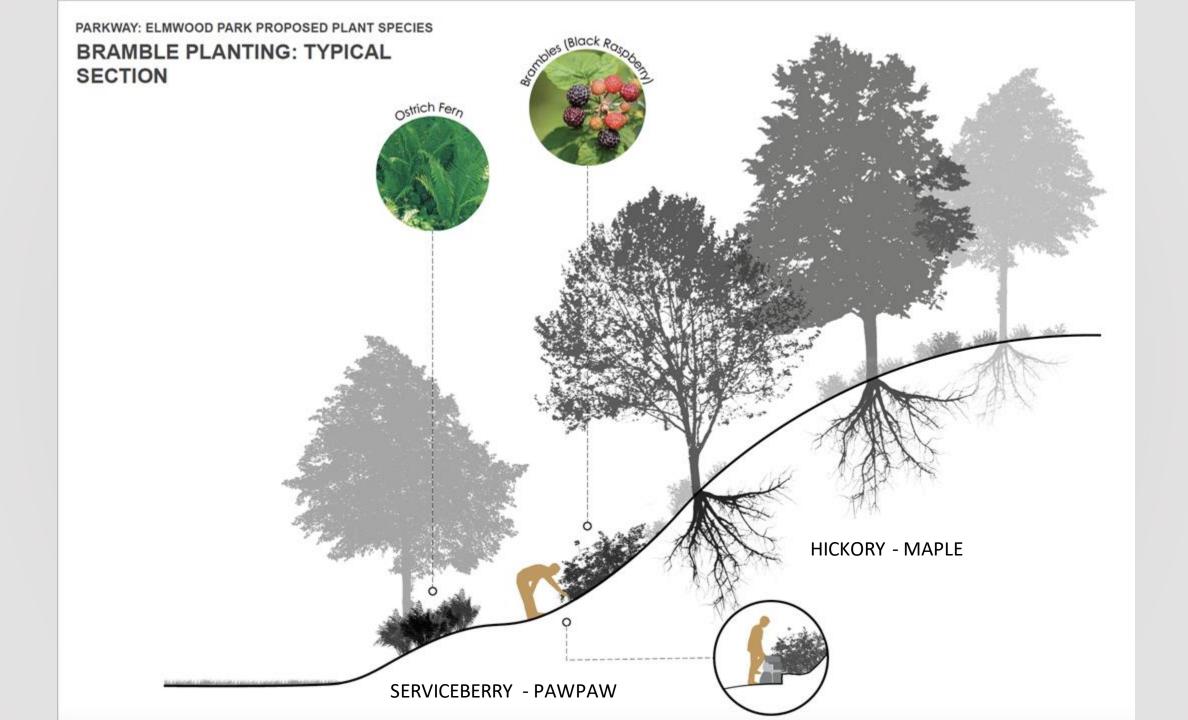












Shagbark Hickory (Carya ovata)



Kingnut Hickory/ Shellbark Hickory (Carya laciniosa)





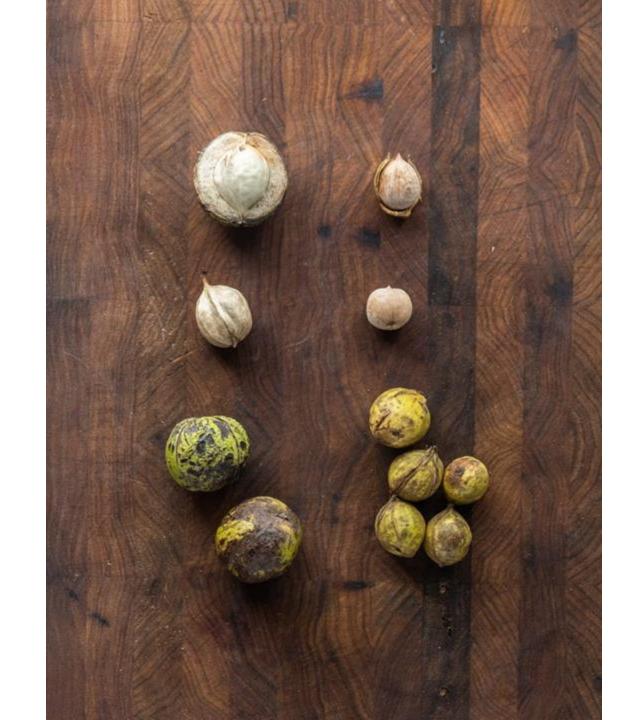
Bitternut Hickory (Carya cordiformis)



Shagbark Hickory Nuts



Nut Weasel

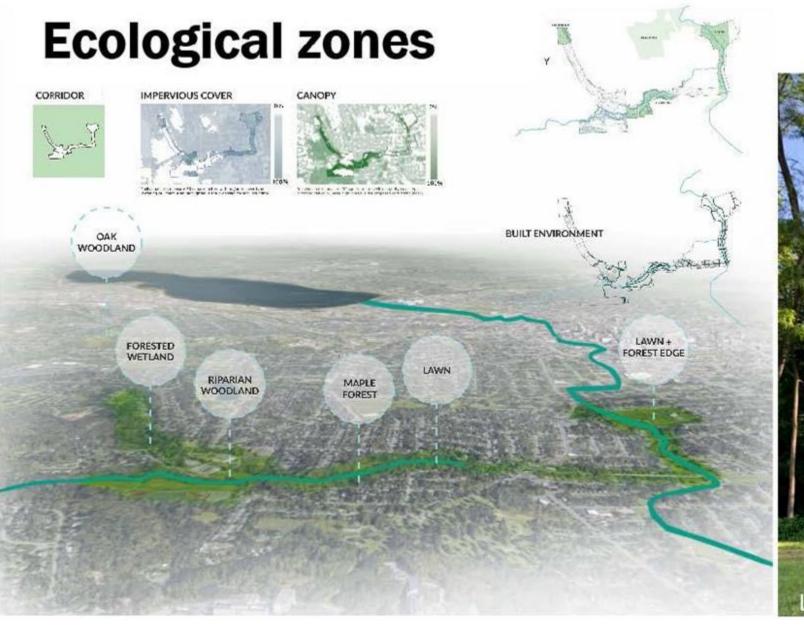


Bitternut Hickory Nuts



Bitternut Hickory Oil

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





HUDSON & RICH LOTS

- Lindera benzoin Spicebush
- Vaccinium angustifolium Lowbush Blueberry
- Ribes rubrum
 Red Currant
- RU 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





Oxford St. Vacant Lot



ONONDAGA EARTH CORPS





Kat Korba, Kanopy Works LLC Kat.Kanopy@gmail.com

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

2nd World Forum on Urban Forests 2023







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



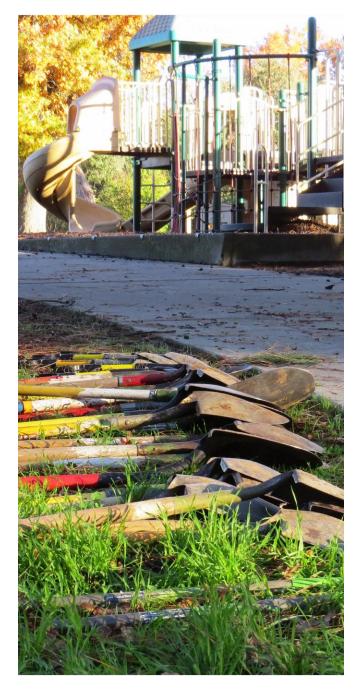
Presented by

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





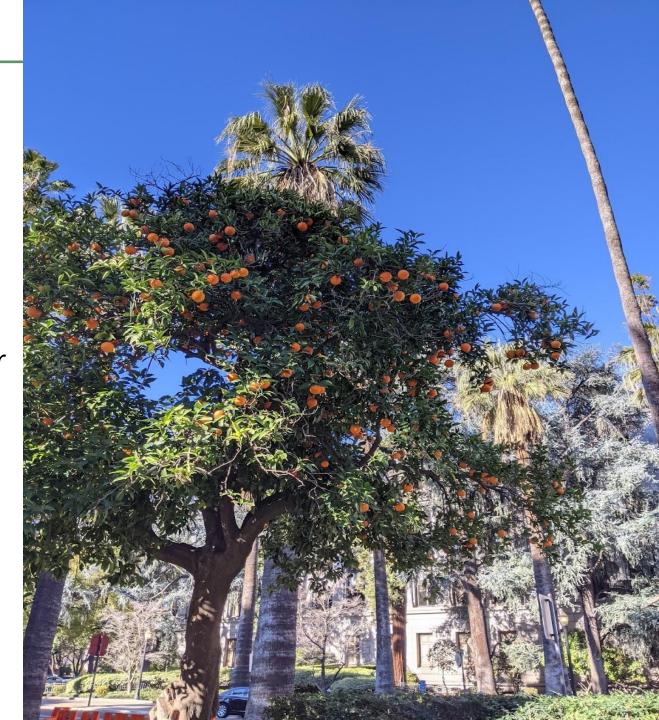


Placemaking for communities with trees



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**



■ Jessica@sactree.org

















2nd World Forum on Urban Forests 2023







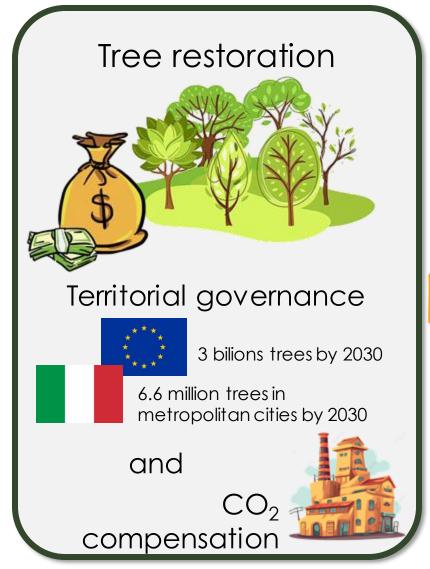
An ongoing study:

Priorities for afforestation areas on a national scale



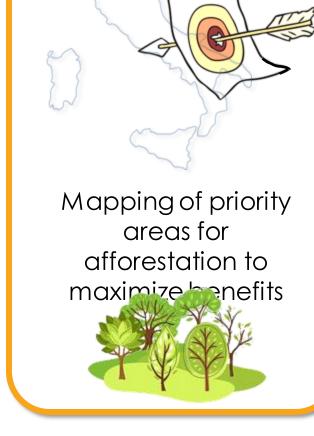
Presented by
Chiara Gibertini
Giorgio Vacchiano, Fabio Salbitano, Maria Chiara Pastore
Livia Shamir, Luis Pimentel and Simone Marchetti











What is missing?



Objective

Mapping of priority areas for afforestation on a national scale

Main goals of afforestation projects

Environmental and social variables

Suitable areas





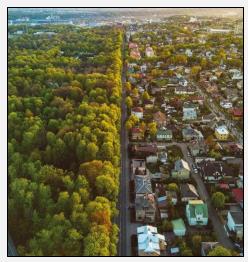
Suitable areas

Excluding:

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

- Agricultural areas → agroforestry and/or planting along field edges
- Urban areas







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



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

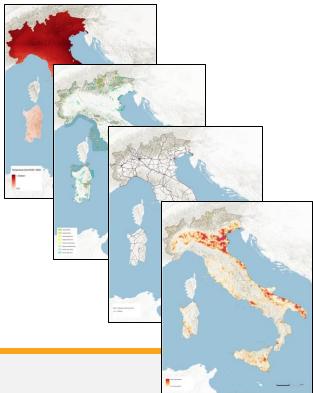


Environmental and social needs



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

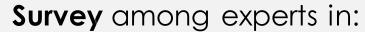
There are others?



Variables

There are others?

What are their wheights?



- Forestry
- Agronomy
- Ecology from all regions of Italy

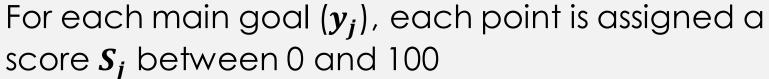
Structured interview

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

Distribuited online



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



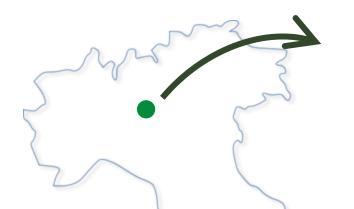
$$S_j = \sum_i x_i \cdot w_{ij}$$







A raster file made with a resolution of 1 km



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

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

Each variable x_i can take values between 0 and

The weight w_{ij} of variable x_i for the main goal y_j . $0 \le w_{ij} \le 100$

From the survey responses: high = 3, medium = 2, low = 1 weight of variables

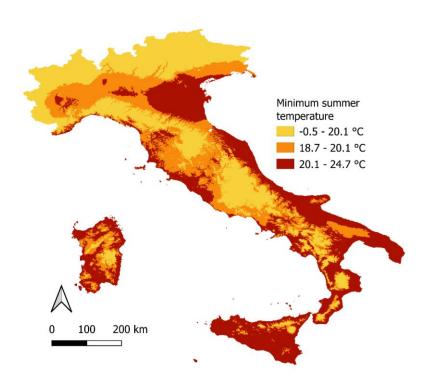


Square of mean value



Percentage value on the total sum



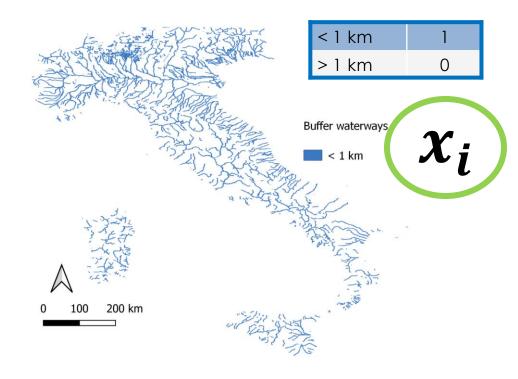


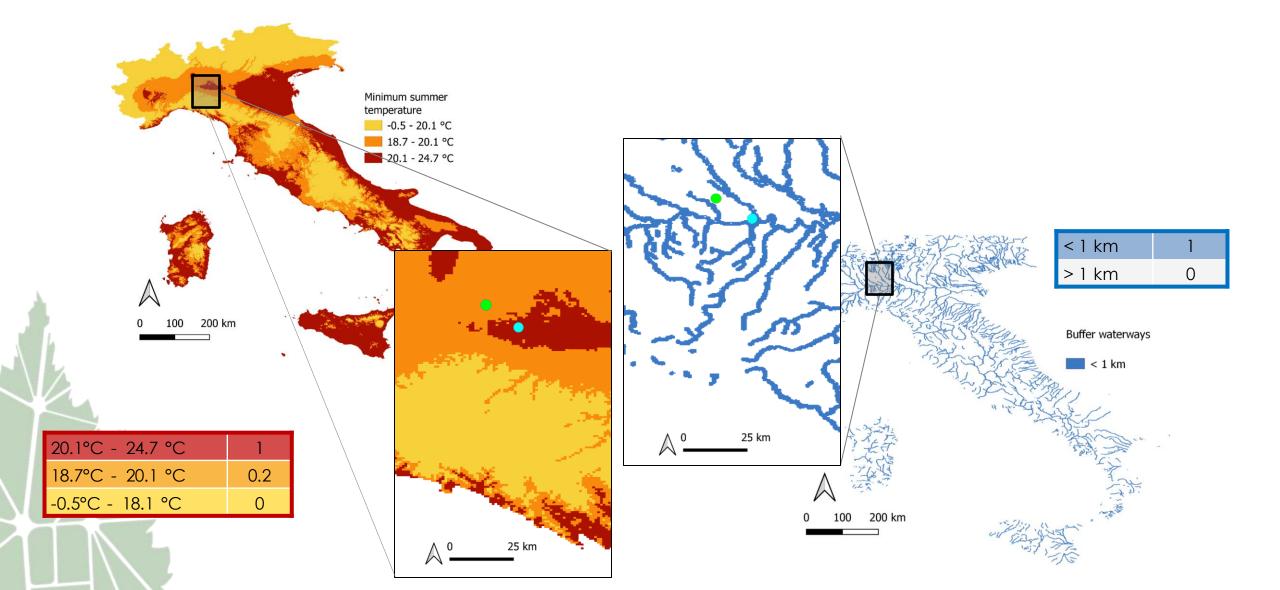
20.1°C - 24.7 °C	1
18.7°C - 20.1 °C	0.2
-0.5°C - 18.1 °C	0



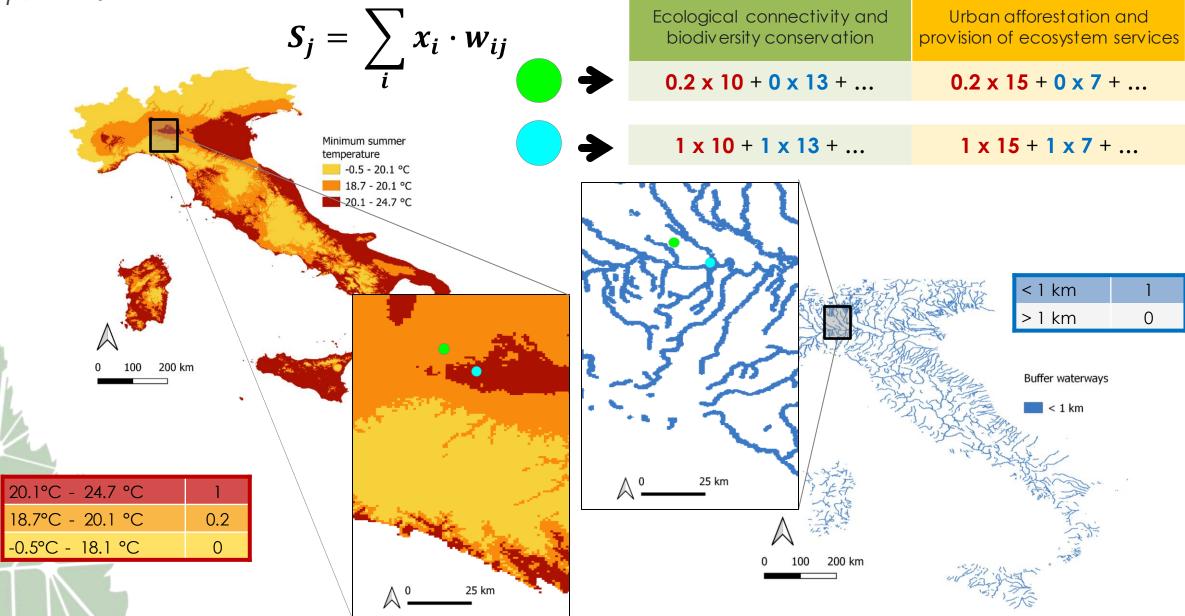


	Ecological connectivity and biodiversity conservation	Urban afforestation and provision of ecosystem services
Minimum summer temperature	10	15
Proximity to waterways	13	7











Survey results

- > 200 responses
- From all regions of Italy

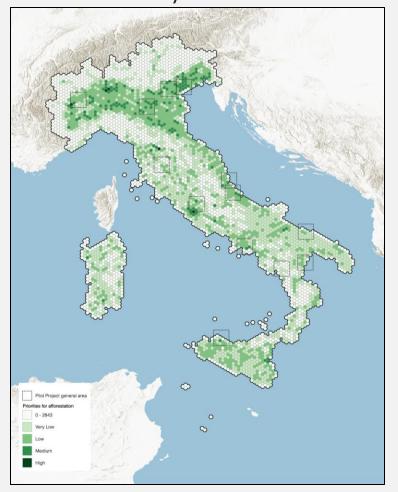
	connectivity and biodiversity conservation	Urban afforestation and provision of ecosystem services	
Habitat fragmentation	17	8	
Proximity to roads and railways	7	9	
Presence of tourist/cycling itineraries	7	11	
Minimum summer temperatures	8	13	
Future temperature trend	10	13	1
Exceeding the daily PM 10 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	

Ecological

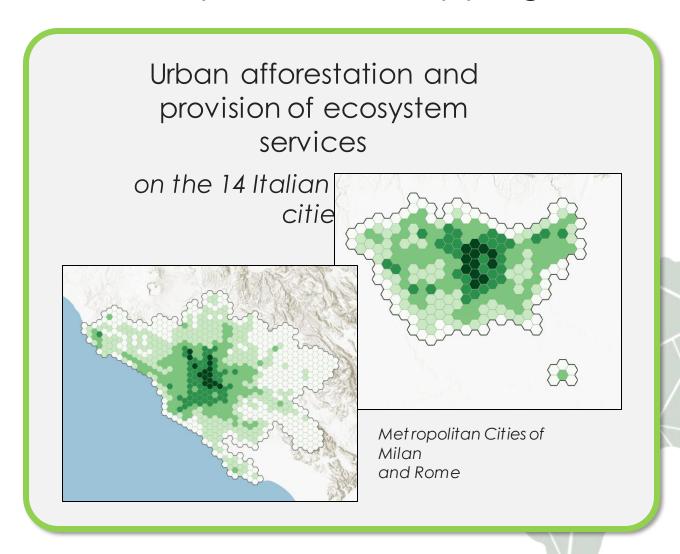




Ecological connectivity and biodiversity conservation



Preliminary results of mapping



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 → 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 Gibertini¹, Giorgio Vacchiano^{1,2}, Fabio Salbitano^{2,3}, Maria Chiara Pastore⁴, Livia Shamir⁵, Luis Pimentel⁵ and Simone Marchetti⁵













¹ Department of Agricultural and Environmental Sciences, Università degli Studi di Milano, Italy; ² Fondazione AlberItalia ETS, Santa Sofia, Italy;

³ Department of Agriculture, Università degli studi di Sassari, Sassari, Italy; ⁴ Politecnico di Milano, Milan, Italy; ⁵ Stefano Boeri Architetti,















2nd World Forum on Urban Forests 2023





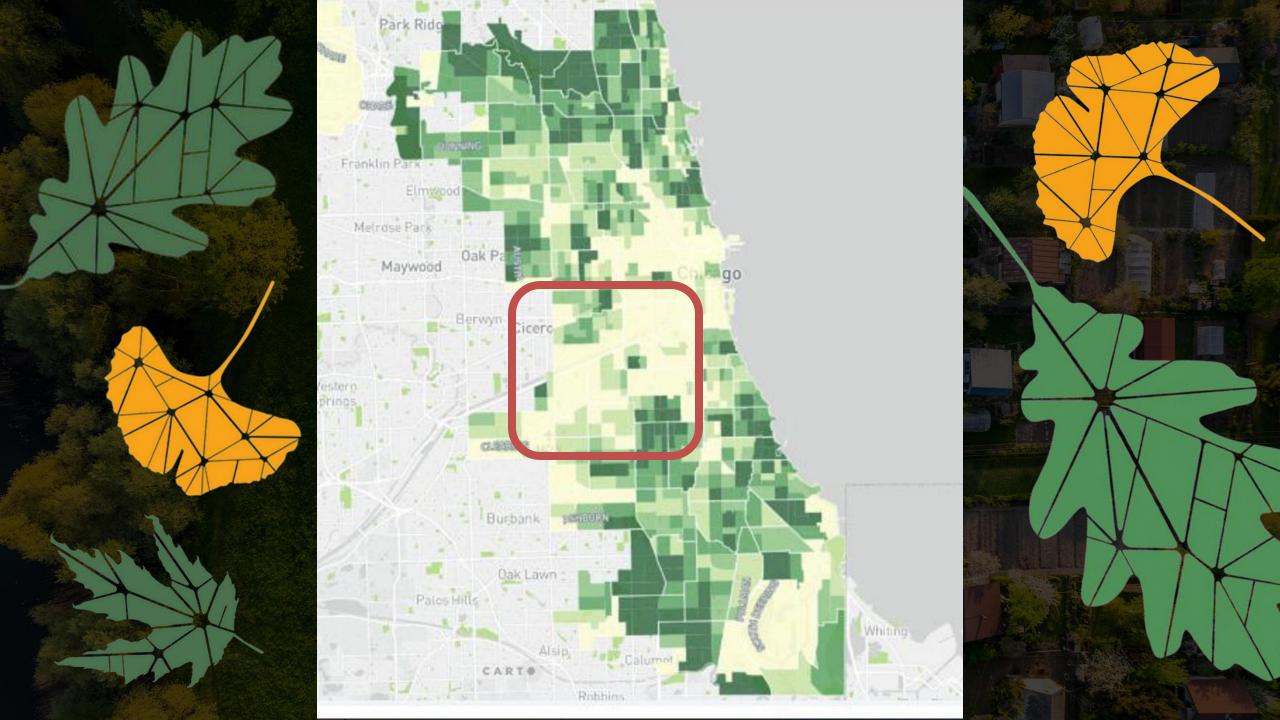


Overcoming Barriers to Community Tree Planting in Chicago, Illinois, USA



Presented by
Tom Ebeling
Community Arborist
Openlands









Over 9,000 trees to date

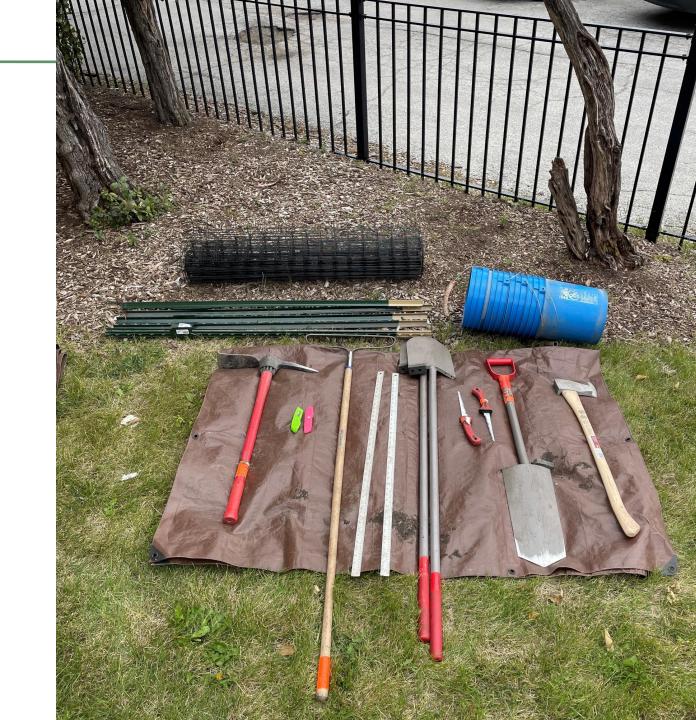
Over 1,900 TreeKeepers trained

Greater than 90% success rate for trees



Barriers to Tree Planting

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

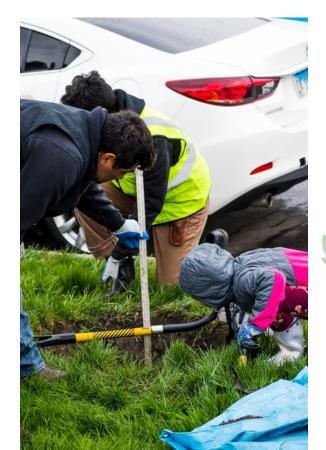


Barriers: Access to land, tools, trees or expertise; prohibitive city ordinances

Addressing barriers: Openlands TreePlanters Grant













Barriers: Maintenance; expertise

Addressing barriers: Openlands TreeKeepers;

Arborist Registered Apprentices



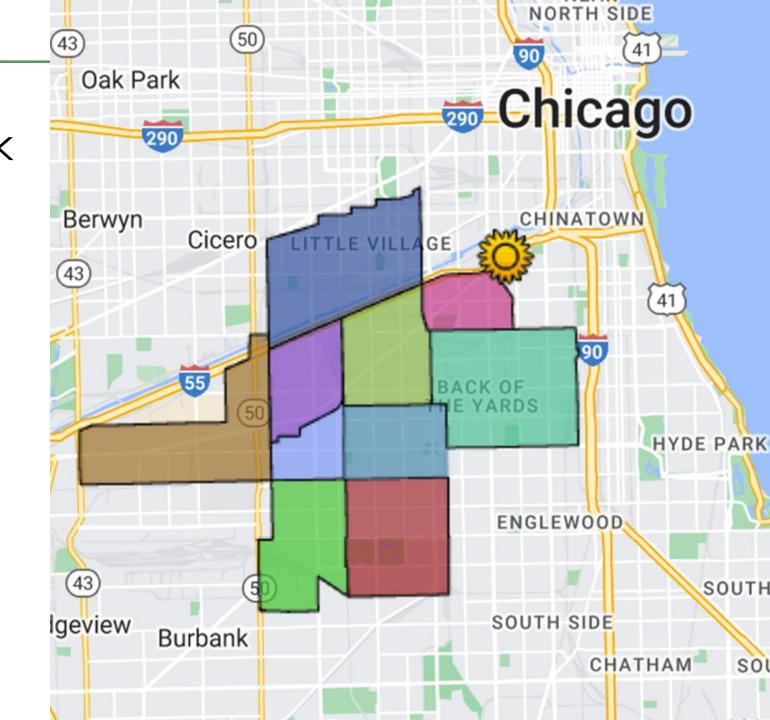




Barriers: Language, lack of free time, maintenance ability

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

TEbeling@openlands.org



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



Thank you

Tom Ebeling | Openlands tebeling@openlands.org





















CEUs

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



PP-23-3565

