

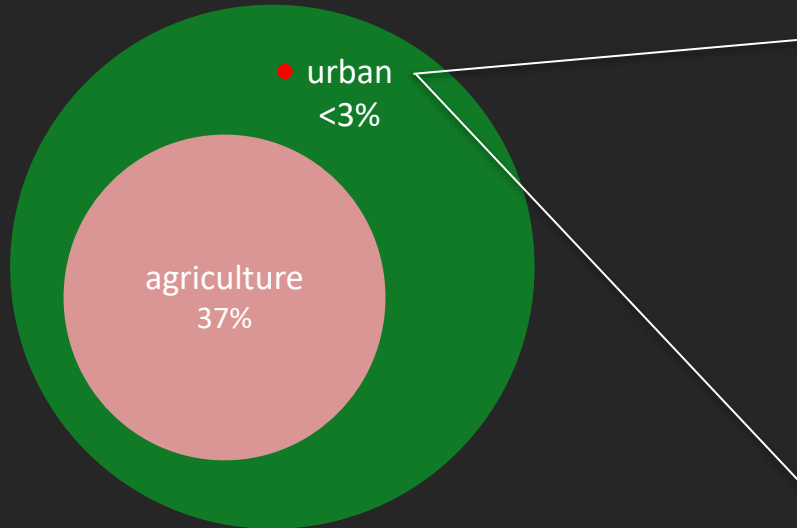
Beyond the *Golden Shovel*: Recommendations for a Successful Urban Tree Planting Initiative



I.A.M. Public Space Symposium
SLU Alnarp • June 4, 2024

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Visiting Researcher at SLU, SOL
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Department of Landscape Architecture & Regional Planning

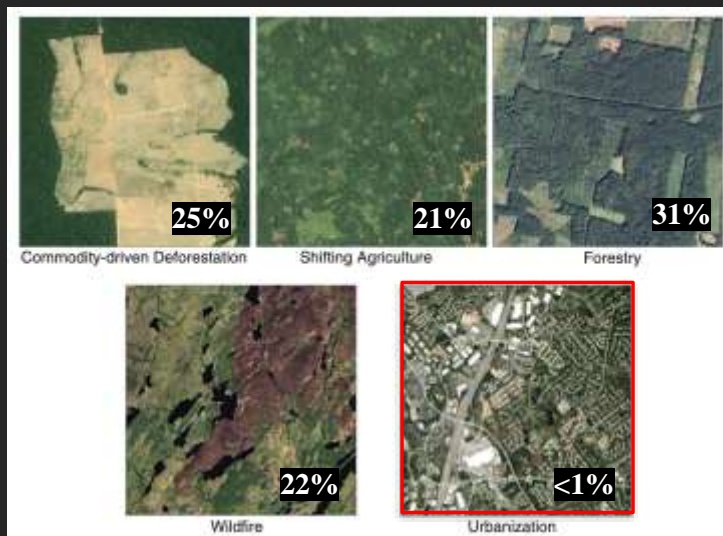
Context: Urbanization



2008: 1st time humanity more urban than rural

2100: 75% urban + end of urbanization project (Angel 2012)

Terrestrial land use (Liu et al. 2014; World Bank 2024)



Global drivers of forest loss (Curtis et al. 2018)

Context: *Cities are greening!* "frantic greening process" (Cariñanos & Casares-Porcel 2011)



Singapore: "pervasive greenery...wherever the eye [can] see" (ULI 2013)



GI for Stormwater Management

(City of Philadelphia)

A distinct chapter in the historic arc of urban greening?



Green Area Factors (Keeley 2011)



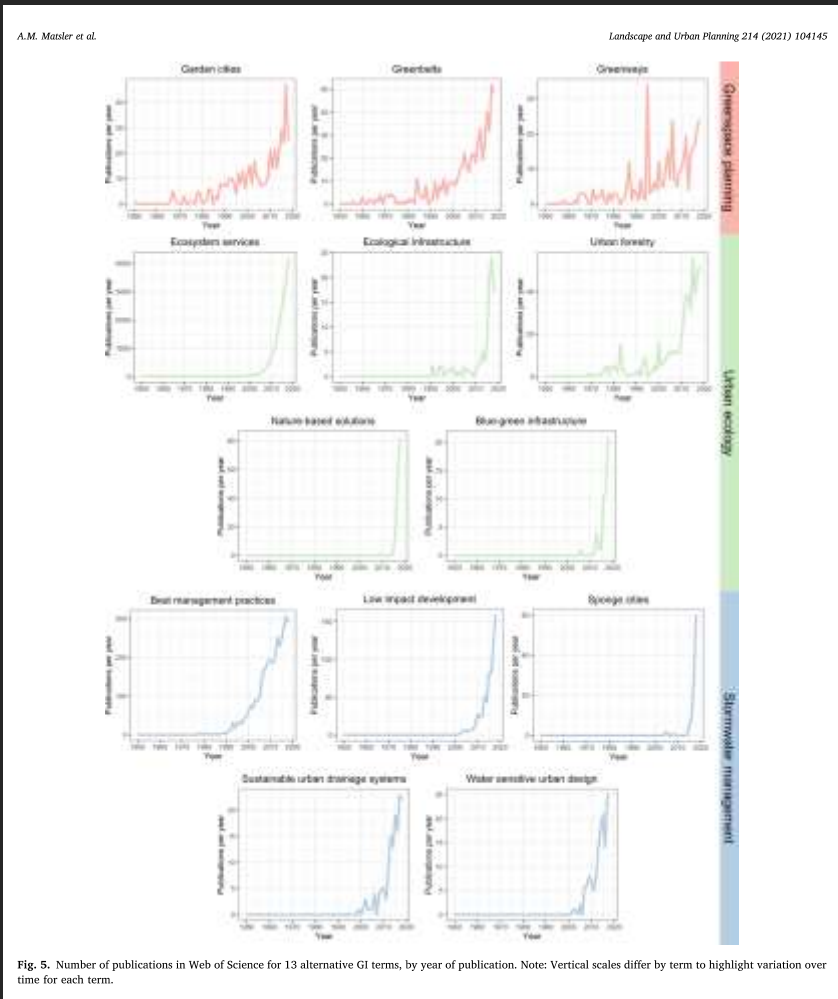
Green Roofs & Walls (GRHC 2014)



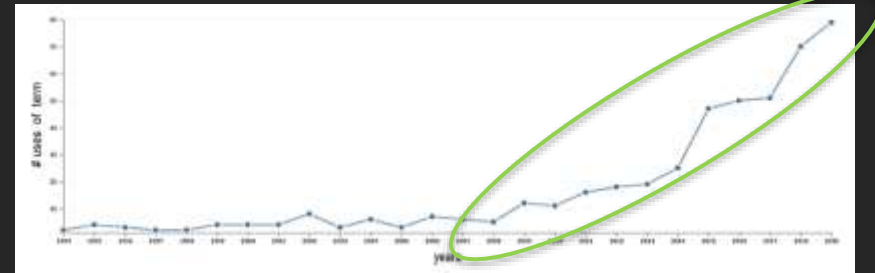
Major Tree Planting (Young 2011)

TEMPORAL CONTEXT— *UG as a Contemporary Movement*

“green infrastructure” related terms (Matsler et al. 2021)



Web of Science: “urban tree planting initiative”(TPI)



Seven-fold growth in TPI scholarship 2008-2019

(Eisenman et al. 2021)

Tree Planting Initiatives (TPIs)



Planted 1 million trees 2007-2016



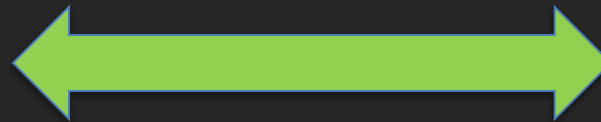
Countless TPIs globally today



- >60 cities
- >11 million trees



- Urban Tree Cover (UTC) %
- Quantitative outputs
- Monetary value \$\$\$



2006



Tree Planting Initiatives (TPIs)



← *globalizing* →

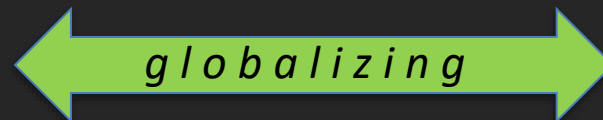
- Urban Tree Cover (UTC) %
- Quantitative outputs
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2006



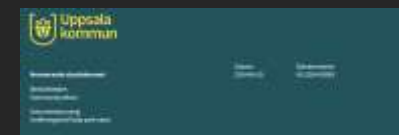
Tree Planting Initiatives (TPIs)



- Urban Tree Cover (UTC) %
- Quantitative outputs
- Monetary value \$\$\$

Uppsala Kommun: April 2024



- 30% UTC
- Public & Private Land



TPIs: Survey (*business-as-usual*)

Urban Forestry & Urban Greening 61 (2021) 127006

Contents lists available at [ScienceDirect](#)


 Urban Forestry & Urban Greening 

journal homepage: www.elsevier.com/locate/ufug

Traits of a bloom: a nationwide survey of U.S. urban tree planting initiatives (TPIs)

Theodore S. Eisenman^{a,*}, Tamsin Flanders^a, Richard W. Harper^b, Richard J. Hauer^c, Katherine Lieberknecht^d

^a University of Massachusetts-Amherst, Department of Landscape Architecture and Regional Planning, Address: 551 North Pleasant Street, Amherst, MA, 01003-2901, USA
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Definition of TPI:

“A focused tree planting campaign that is distinct from a municipality’s typical tree planting activity, such as operational or ceremonial planting.”

Sample:

41 leaders of an urban TPI in the United States

“What characteristics distinguish TPI from your municipality’s typical tree planting activity?”

→ 117 discrete traits

→ distinct cultural phenomenon & practice from typical urban forestry

Distinguishing traits

- Separate name & website
- Involvement of residents
- Public-private partnerships
- Often driven by UTC% / large planting goals

TPIs: Survey (business-as-usual)

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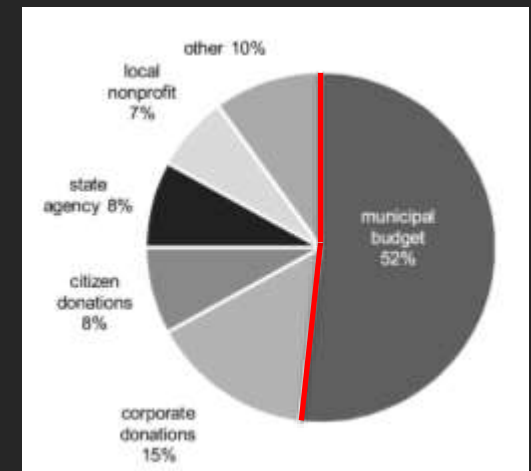
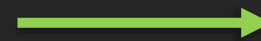
“A focused tree planting campaign that is distinct from a municipality’s typical tree planting activity, such as operational or ceremonial planting.”

Sample:

41 leaders of an urban TPI in the United States

Other findings w/ management implications

- 71% had funding separate from city budget
- 40% tracked tree survival
- 34% had a funding and administration plan



Typical distribution of TPI funds

TPIs: Survey (business-as-usual)

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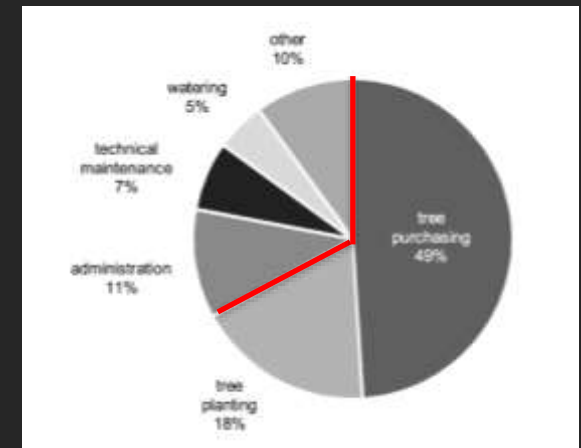
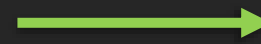
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Allocation of TPI \$\$\$

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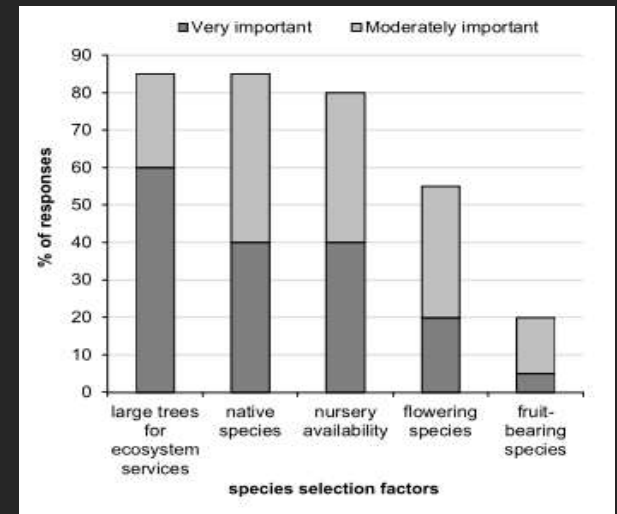
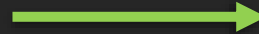
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Factors informing species selection

Viewpoint

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Fundraising event to celebrate planting of 100,000 trees in Atlanta, GA.

Source: Image courtesy of TreesAtlanta

Table 1. Recommendations for an urban TPI, including five themes across the three typical phases of a project.

	Pre-planting	Installation	Post-planting
FUND: <i>Ensure adequate funding for all phases of the project.</i>	Allocate about one-third of project funds for comprehensive planning, including community engagement, species selection, and site design.	Allocate about one-third of project funds for tree purchasing, site preparation, and tree planting, including professional staff and equipment.	Allocate about one-third of project funds for equipment and staff for regular maintenance of trees especially in the first 3 to 5 years after planting, as well as project evaluation.
PLACE: <i>Adopt place-based landscape design practices.</i>	Develop planting plans that respect the cultural and environmental contexts of a given city, neighborhood, and site and increase connectivity to nearby green spaces. Consider the range of uses for a given site and develop planting designs accordingly.	Adopt planting and governance practices that reflect local cultural and environmental context. Celebrate tree planting as a significant cultural event.	Reconsider species selection and site conditions if trees are dying or unhealthy. Manage trees in accordance with locally relevant practices.
PEOPLE: <i>Conduct deep civic engagement and invest in communities.</i>	Establish clear environmental, social, and human health planting goals with community input. Engage diverse stakeholders in the development of planting plans.	Create and promote green job career pathways that train and hire residents. Engage residents of different ages, abilities, and backgrounds during planting events.	Support ongoing local green jobs and environmental education programs. Enable and support ongoing community-centered stewardship.
PLANT: <i>Follow arboricultural best practices.</i>	Plan for diversification of species and places and for future climate. Develop relationships with local or regional nurseries to enable supply of high-quality trees.	Plant the right tree in the right place and for the right reason. Follow regional standards for planting techniques.	Actively maintain recently planted trees, including staking, mulching, watering, structural pruning, and pest/disease management.
LEARN: <i>Evaluate performance of trees and outcomes of planting and adapt management practices accordingly.</i>	Develop environmental, social, and public health performance metrics. Create protocols, procedures, and databases for monitoring. Produce public-facing systems for gathering community requests, complaints, and input.	Record baseline data for planting locations and species. Track volunteer and partner engagement in the initiative.	Monitor tree health, growth, and survival. Assess environmental (e.g., temperature, stormwater), social (e.g., resident perceptions, stewardship, green jobs), and public health outcomes. Revise planting, maintenance, and management approaches based on learning.

Funding

Roughly equal allocation of funds across all phases of a TPI



Marginalized groups
excluded from planning
process resist new trees
(Carmichael & McDonough 2019)



50% of new trees
typically die 13-18 years
(Hilbert et al. 2019)

\$500–\$3,500 / tree
(Duseau 2022, Ostapiuk 2022)

Place: *climate & culture*

Aesthetic norms + Urban Form



Washington, DC

7.3 trees/100m of street



Paris

4.9 trees/100 m of street

 **frontiers**
in Ecology and Evolution

ORIGINAL RESEARCH
published: 03 November 2015
doi: 10.3389/fecol.2015.00034

Street Tree Density and Distribution: An International Analysis of Five Capital Cities

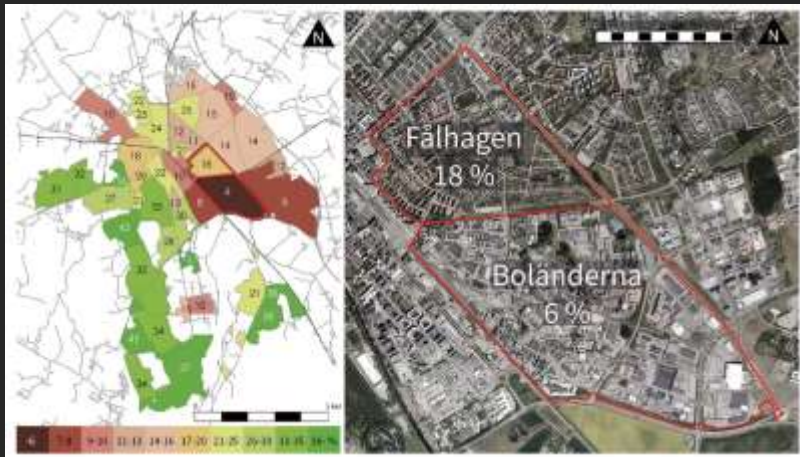
Nicholas Smart^{1*}, Theodore S. Eisenman^{2*} and Andrew Karvonen^{2*}

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Place: *urban form*



- SEPA: 2% UTC increase
- 3-30-300 (Konijnendijk 2022)



- 14,297 trees to meet 30% UTC (500/yr Uppsala)
- Comprehensive changes in land use required
- Private property and residents essential

Place: *cultural norms*

Uppsala



species preferences



management practices

People:

Distributional Justice → *where* trees are planted

Procedural Justice → *process* whereby TPIs are planned and implemented

Recognitional Justice → incorporating different cultures, worldviews, and experiences in TPI planting goals and practices



Los Angeles, community planning meeting by City Plants.



Los Angeles, Boyle Heights neighborhood celebration of planting

Planting: *tree supply*

- Local nurseries run by municipality or nonprofit
- Advance procurement contracts



Our City Forest,
San Jose, CA



Greenland Nursery,
Philly Parks & Rec

Planting: *tree selection* → *values*

Monetizable ecosystem functions?



Human interaction?



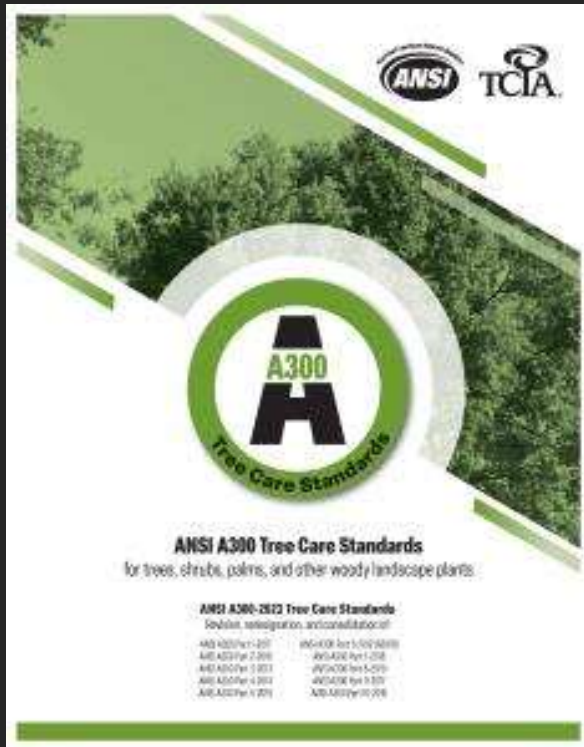
Wildlife habitat & biodiversity?



Placemaking?



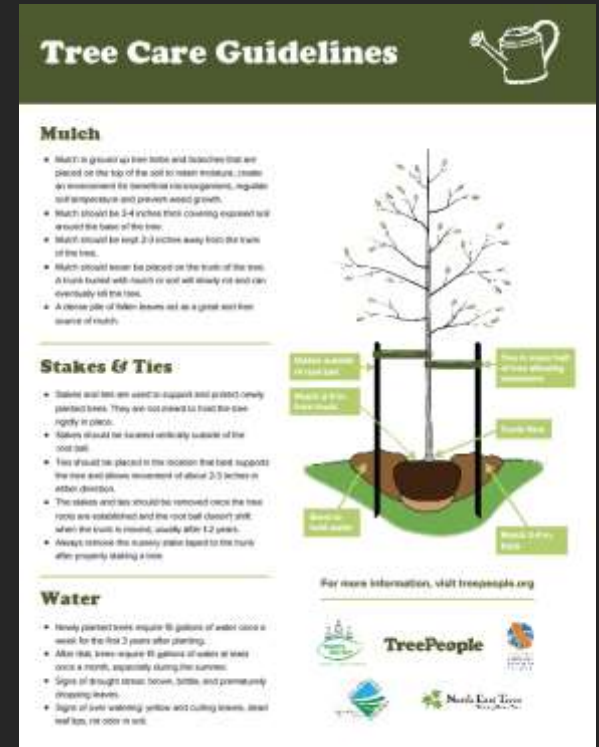
Planting: standards



International Society of Arboriculture

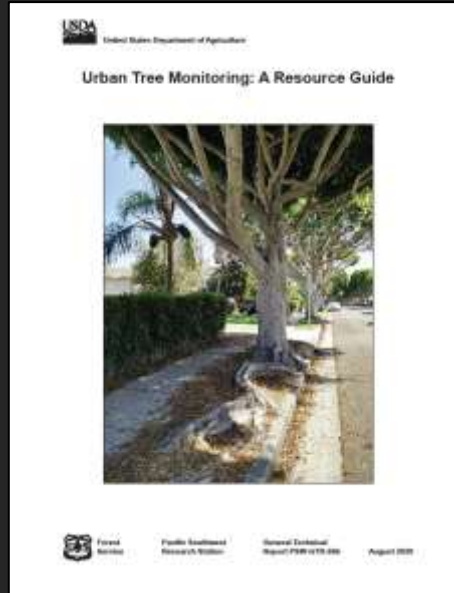
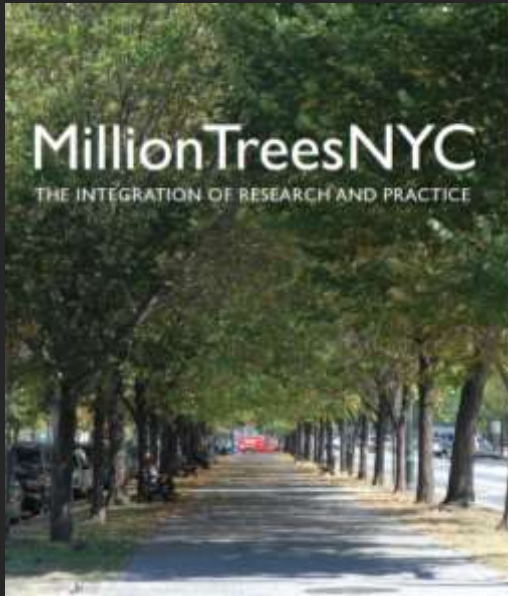


International Society of Arboriculture



TreePeople
(NGO in Los Angeles)

Learn: *monitor tree health & outcomes*



U.S. Forest Service



Survival & Health

Outcomes: Before & After?

- Temperature?
- Resident perceptions?
- Psycho-social outcomes?
- Workforce development?

Ongoing Research

Urban Greening in a Globalizing World

- *plantable space?*
- *landscape preferences?*
- *governance norms?*

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