

The issue(s):

- * Climate change compounds stressors like the heat island effect, pest outbreaks, and drought.
- * Ecosystem services and resilience depend on a healthy diverse urban forest.
- * Well informed street tree species selection is crucial to improve the diversity and functionality of the urban forest.

Research questions:

- *Which selection criteria do tree planting professionals prioritize, and which tree species do professionals associate with valued characteristics?
- *Furthermore, what knowledge gaps exist between relevant professional groups?

Methods:

*Semi-structured interviews in the Philadelphia area as part of an in-depth case study. *An online survey of professionals in the USA and Canada. 25°N

FINDING URBAN TREES FOR A CHANGING WORLD: Exploring Public Garden Contributions to Urban Forestry

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Key findings:

* Professionals prioritize tolerance of urban stressors over other major selection criteria.

* Though ecosystem services are rated as second most important, professionals lack the information necessary to apply these concepts to tangible tree selection decisions.



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* Professionals have high disagreement on many tree species currently in use.



* The palette of tree species that professionals encourage planting varies across climate and professional fields.



* A higher percentage of trees encouraged by public horticulture professionals are "rare" in the urban forest. (p=0.003)

- Urban forestry 50%
- Public horticulture 36%
- Parks, rec, and public works 66%

 - Landscape Architecture 67%
 - Horticulture 40%
 - Ecology/ conservation 53%
 - Arboriculture 51%

Discussion:





* There is no singular perfect tree, and it is a false mission to ask professionals to choose one.

* However, given a tough urban planting site and often poor funding for maintenance (among other challenges),

professionals must optimize their daily tree planting choices. The criteria they work from are often conflicting and therefore represent a set of trade-offs of varying magnitudes. * Since the palette of street trees is limited, we must continue to search for trees that pass important tests of toughness and meet as many other criteria as possible.

* Professionals encourage and discourage a wide range of trees, and have conflicting evaluations of many of these species. Increased communication among fields would be useful to resolve the use-potential of various species. * For some important criteria, such as the ability of a tree species to provide ecosystem services, insufficient information is available to professionals.

* Additionally, the information available on new potentially good urban trees is limited. Professionals are risk-averse and avoid planting unproven trees. Public gardens and other collaborations may have a role in searching for and evaluating potential urban trees, as well as sharing applicable information on these new or rare species.