

Collaborating to Increase Urban Tree Diversity

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[00:00:00] [Conference Rewind logo on left. Video on right of speaker.]

Kathy Brennan: [00:00:00] Hi, I'm Kathy Brennan, Director of Educational Products and Services with the International Society of Arboriculture. Welcome to the ISA Conference Rewind video series. We're so happy to bring to you today a presentation on "Collaborating to Increase Urban Tree Diversity" with Deb Hilbert from the University of Florida.

This presentation was originally given at the 2020 ISA Virtual Conference. And therefore the views and information expressed are those of the presenter. So if you're interested in a fascinating case study, that takes an in-depth look at utilized trees tree diversity and urban forest collaborations. Then I am sure you will enjoy today's lively presentation. Now sit back and enjoy listening to Deb.

[Video goes to full screen and shows new speaker.]

Deb Hilbert: [00:00:50] Hello, my name is Deb Hilbert and I am a PhD student at the University of Florida. I study urban forest growth and longevity, urban tree [00:01:00] canopy, as well as urban forest species diversity, which is the focus of this presentation.

As you are aware, urban forest are vulnerable to a number of threats, like pests, pathogens, and climate change. And tree diversity can help make forest more resilient to stressors like these; however, knowing which tree species to incorporate into your planting list to create resilience can be challenging.

This presentation summarizes a framework that we created that can help guide tree care practitioners and creating for thinking planting lists. The framework is presented as a diagram in the center of the poster. Instead of reading this step-by-step, I'm going to tell you instead about a case study which demonstrates this framework in action.

In 2017, I joined a working group which consists of arborists, urban foresters, extension agents, growers, and other researchers. It's called the [00:02:00] Central Florida Urban Forest Tree Diversity Working Group. And we set out to create a list of under-utilized species for central Florida urban areas.

We also wanted to test some of these species in the field and see how they establish. First we had to actually define what "under-utilized" means. And so what I did is I looked at an unpublished tree inventory data, from seven communities around Florida and based on natural breaks in the data, I decided that trees that made up 1% or less of the inventories by tree count, were designated as under-utilized.

Then what we did is we looked at predicted climate trends for the region. We also compared it against species tolerances and natural habitat distributions. Then we also looked at the biophysical criteria based on local planting conditions, as well as the [00:03:00] professional's experiences working with different species and our specific region. Criteria for including trees in this list included things like: they couldn't be invasive obviously and they couldn't have the potential to be invasive. They also needed to have a low risk of contracting common diseases and pests, as well as emerging diseases and pest in our region.

Overall, we came up with a list of 48 species of underutilized trees for our region. I organized these into a matrix, or like a spreadsheet, and it included things like tree characteristics of mature tree size, wind tolerance, as well as notes from working group members and myself, as I went through and researched each of these species.

So then from there, we wanted to actually carry out an establishment trial on some of these 48 species and we searched for their availability. This is where things ended up getting [00:04:00]

really narrow in focus. After looking at many, many, many different nurseries, we ended up with just five species that were available in the right quantity, quality, and size that could also be planted out the same year.

Planting locations were provided by the communities that were participating in this working group and planting sites included publicly owned the street trees streets and park areas. Our locations were in Pinellas County, Hillsborough County, the City of Lakeland and the City of Orlando, Florida. Then we monitored the species health growth, as well as their mortality over the span of two years. Which is the typical establishment period for trees in central Florida.

The two best performers from our under-utilized species trial were allness allota of and viburnum ovatum. The worst performer was tax sodium ascendance. [00:05:00]

I think the biggest takeaway from this project, from the start to finish, it was only possible through a transdisciplinary partnership of not just researchers, but also practitioners who had knowledge of the area and a wide knowledge of different tree species that may not have been available.

Other communities can take this framework that is presented as well as this case study I just described and use it as a guide for creating more diverse planting list.

Furthermore, carrying out planting trials and underutilized species and different regions, as well as different planting conditions can really provide key information for improving urban forest management, because we don't have a ton of data on growth and longevity for underutilized species.

For the future we want to investigate some of the complexities behind low urban forest species diversity, as well as how do we increase this availability from growers? Because that was really a pinch point in this project was the lack of availability of many of these underutilized [00:06:00] species.

That is this project in a nutshell. Thank you so much for checking out the work. If you have more questions, please reach out to me. The question and answer portion of the app or you can email me, my contact information is in the bottom right hand corner, and I look forward to hearing from you. Email: dhilbert@ufl.edu .