



ARBOR DAY TREE CAMPUS USA CELEBRATION

MORGAN WHITE

ASSOCIATE DIRECTOR FOR SUSTAINABILITY

FACILITIES & SERVICES

APRIL 16, 2020

MEET OUR COMMITTEE MEMBERS!

Dr. Kevin McSweeney

Morgan White

Ryan Welch

Brent Lewis

Dr. Gary Kling

Andrew Lamoreux

Meredith Moore

Jay Hayek

Maddie Smith

Ricardo Zapata

Director of Arboretum, Chair

F&S Associate Director for Sustainability

Superintendent of Grounds at F&S

University Landscape Architect at F&S

Assoc. Professor of Crop Sciences

City of Champaign, Forestry Supervisor

iSEE Sustainability Programs Coordinator

UI Extension Specialist

UI student in Integrative Biology

UI student in Economics



Tree Campus USA Summary

SUMMARY

2017

BY THE NUMBERS

TREE CAMPUS USA CELEBRATING
ITS 10-YEAR ANNIVERSARY

36,349

TREES PLANTED
BY TREE CAMPUSES

NEW

FIRST-YEAR
Tree Campus
USA Schools:

40

STUDENTS ENGAGED

IN SERVICE LEARNING PROJECTS

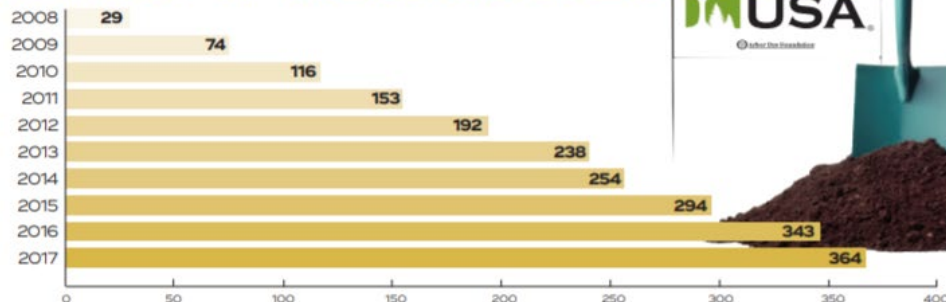
40,387

4,313,026

STUDENTS
ENROLLED

AT A TREE CAMPUS

NUMBER OF TREE CAMPUSES



94.48%

Recertification Rate

Largest

Arizona State University

103,410 STUDENTS

Smallest

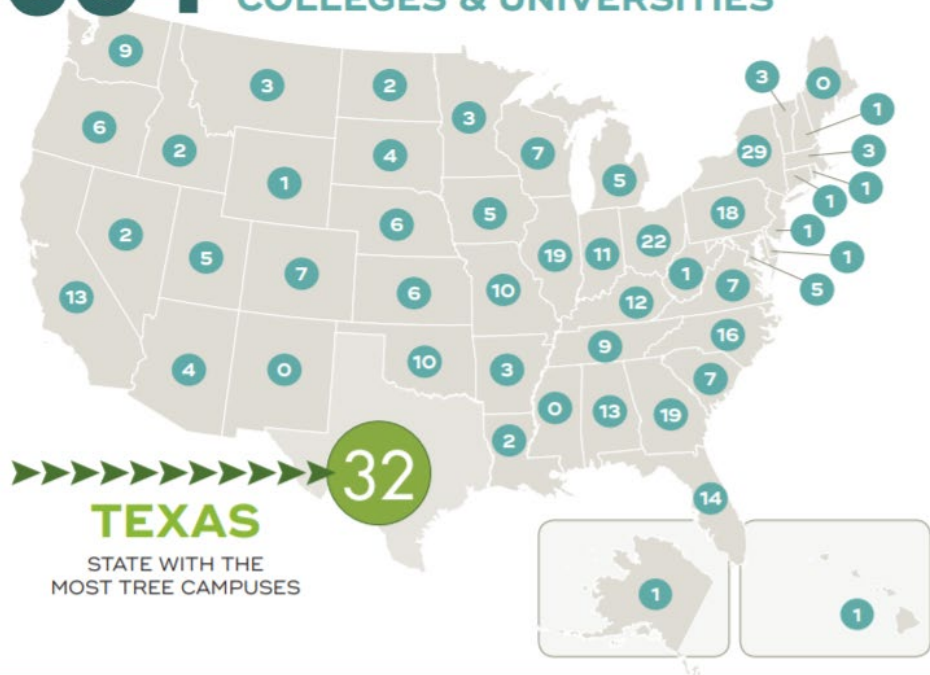
Prescott College

350 STUDENTS

\$51,297,366

spent by campuses
on tree planting,
care and management

364 TREE CAMPUS USA COLLEGES & UNIVERSITIES



Learn more at arborday.org/treecampus



Arbor Day Foundation®
arborday.org

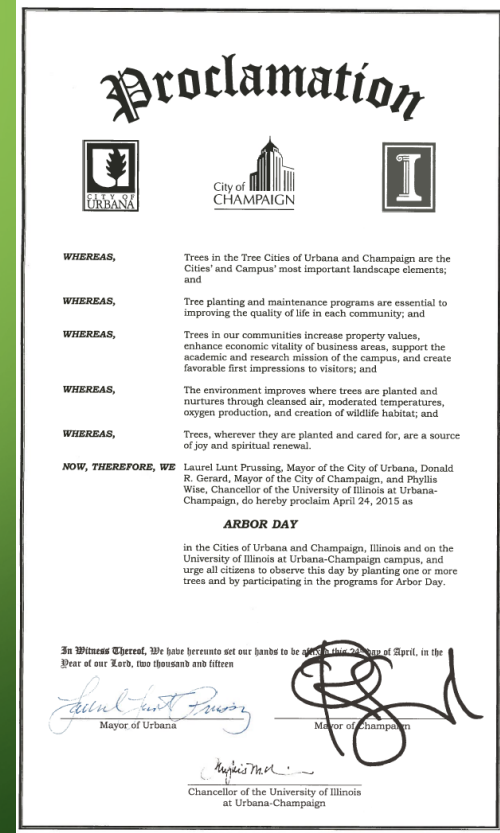
HOW TO BECOME A TREE CAMPUS

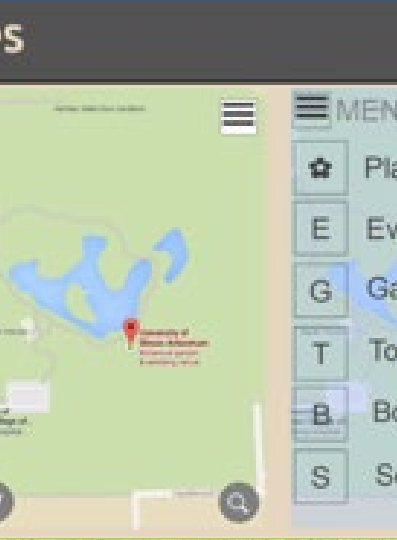
1. Establish a Campus Tree Advisory Committee
2. Complete a Campus Tree Care Plan
3. Complete a Campus Tree Program with Dedicated Annual Expenditures
4. Plan and execute an Arbor Day Observance event
5. Coordinate a Service Learning Project
6. Apply for Tree Campus USA designation



HISTORY OF TREE CAMPUS USA AT ILLINOIS

- City of Urbana
 - The city takes great pride in being the first Illinois community to receive the Tree City USA designation in 1976.
- City of Champaign
 - “It’s an honor to be recognized for our hard work and dedication to maintaining our community’s urban forest,” said Andrew Lamoreux, Public Works Forestry Supervisor “Trees are so important for the quality of life of Champaign’s residents. They improve the visual appeal of our neighborhoods, increase property values, reduce home cooling costs, remove air pollutants, and provide habitat for birds and wildlife.”





TREE CAMPUS USA 2015

Service-Learning Project:

- In fall 2014, Diane Anderson, the Research and Education Specialist at the University's Arboretum, worked with five students in Instructor Michael Woodley's senior design class in the Computer Science department to develop a mobile app for the Arboretum.
- The inventory of trees in the Arboretum was initiated several years ago through the F&S Facilities and Information Resources department.
- The students developed a mobile app that connects the UI Plants database to a GPS map for iPhones.



TREE CAMPUS USA 2016

This project was a continuation from the prior year.

- According to the project documentation, the students defined the problem statement as "The University of Illinois at Urbana Champaign Arboretum, although a beautiful place for spending your time, cannot provide essential information about the species of plants in the various gardens without cluttering up the gorgeous landscapes."



UI Plants :Woody Ornamentals

Select Plant: Choose a genus - *Quercus macrocarpa*

Quercus macrocarpa
Bur oak

A large, broad-rounded, deciduous tree with strong wide branch angles and coarse deeply ridged and furrowed bark that makes for a bold appearance.

Habit: Pyramidal in youth becoming broad-rounded with wide branch angles and bold coarse branching; picturesque

Size: 70 to 90' high

Color: Dark green


Texture: Medium-coarse in all seasons

Hardiness: Zone 3a USDA

Habitat: Newfoundland - Alabama - Texas - Manitoba

Family: Fagaceae

More Photos



(c) 2002 Gary J. Kling



Tree Campus USA 2017

Launch of the Rehabilitation The South Arboretum Woods (SAW)

- A 22 acre site formerly used to study pests and diseases of woody plants. It contains dense blocks of various tree species.
- In 2015 Dr. John Marlin, a research affiliate with the Prairie Research Institute, initiated an effort to rehabilitate the SAW, and in 2016 hundreds of students participated in efforts to continue the rehabilitation.

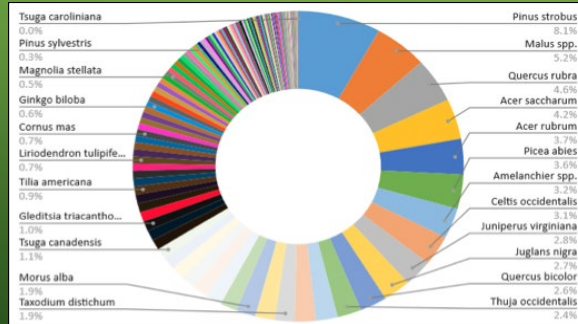
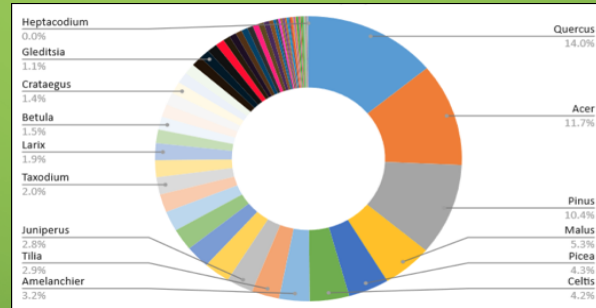
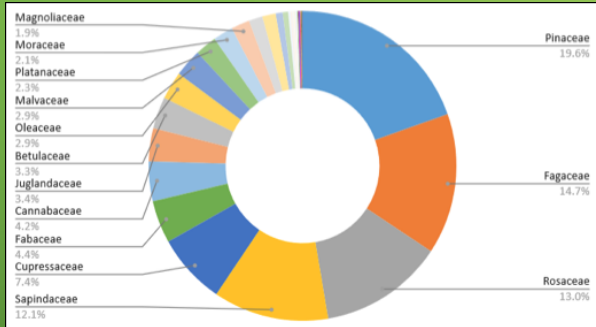


TREE CAMPUS USA 2018

Service - Learning Project:

- **South Arboretum Woods Rehabilitation (Cont.)**
 - The 22-acre South Arboretum Woods (SAW) continues to transform from a neglected
 - Research plantation into an ecologically diverse, accessible, and aesthetically attractive area.
- **Campus Rain works Challenge**
 - We are excited to share that the U of I won first place in the demonstration category of the EPA's
 - Campus Rain works Challenge in spring 2018

TREE CAMPUS USA 2019





University of Illinois Campus: Urban Forest Diversity Study

Madeline Smith

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April 16th, 2020

An 'Urban Forest'

- An urban forest describes any population of trees that grow in an area with a higher density of humans and development
- University campuses are interesting examples of urban forests because they are highly controlled and often contain large green spaces
- Just like a 'regular' forest, urban forests change over time



Biodiversity

- A measure of species richness and evenness
- Stability in the face of disturbance (pests, disease, climate change)
- Supports wider variety of insects and wildlife
- Adds visual interest



‘10-20-30’ Rule

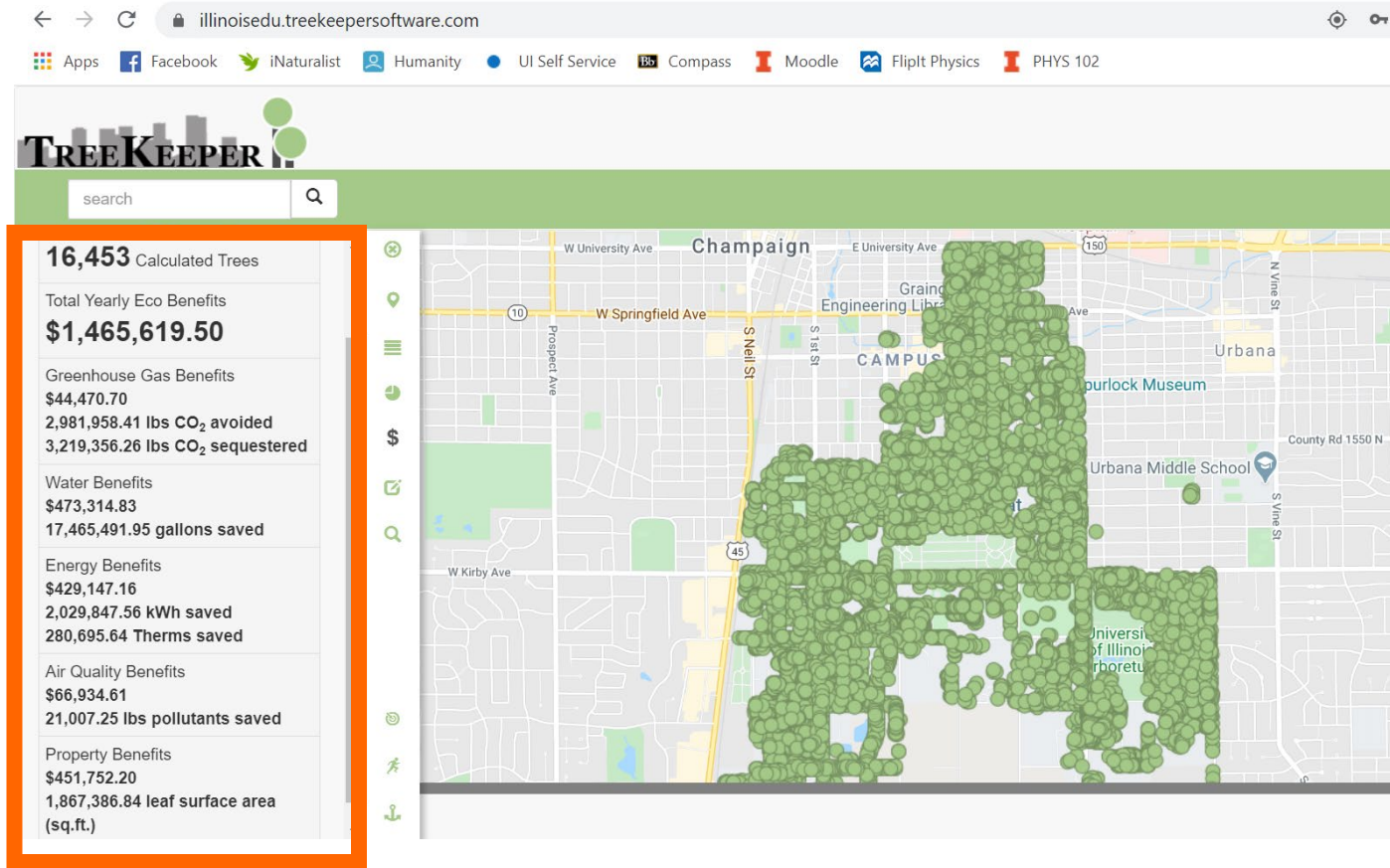
- Proposed by Frank S. Santamour, Jr. of the U.S. National Arboretum in response to the massive losses of elm trees due to Dutch elm disease in urban areas
- No more than 10% of any species, 20% of any genus, or 30% of any family
- Widely used as a benchmark for excellent diversity in urban forests

SANTAMOUR, F.S. (1990). TREES FOR URBAN PLANTING: DIVERSITY UNIFORMITY, AND COMMON SENSE. In METRIA 7: Trees for the Nineties: Landscape Tree Selection, Testing, Evaluation, and Introduction: Proceedings of the Seventh Conference of the Metropolitan Tree Improvement Alliance, The Morton Arboretum, Lisle, Illinois, June 11-12, 1990 (p. 57). METRIA.

Davey TreeKeeper Database

- Contains census of all trees on campus and plenty of useful information
- Accessible to anyone: www.illinois.edu/treekeepersoftware.com
- Great tool and resource for student projects
 - Quad Tree Walk
 - Memorial Trees
 - Ecosystem services, sustainability, biodiversity, etc.





TreeKeeper calculates ecosystem services information and displays every tree in a searchable 'google maps' format

TreeKeeper

sycamore

Site Information

sycamore, Americ

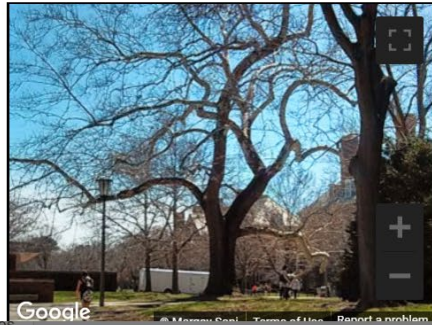
Gregory Hall

Site ID 12381
Species sycamore
Multi-stem No
DBH 54
Tree Trail Quad T
Donor



Highlighting trees that match the search term 'sycamore'

Gregory Hall



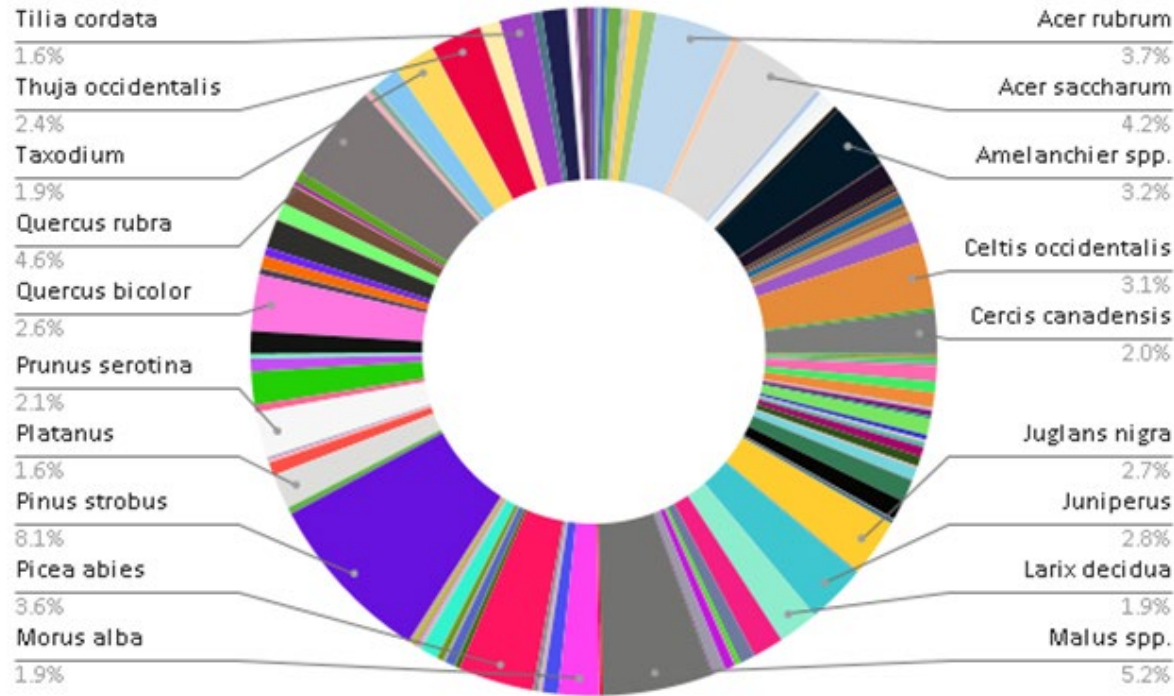
Trees

Nearest Building Gregory Hall	X 1013815.24461326
Y 1252289.3242367	Site ID 12381
Donor Tree N/A	Donor
Tree Trail Quad Tree Walk	Species <small>w</small> sycamore, American (Platanus occidentalis)
Multi-stem No	DBH 54



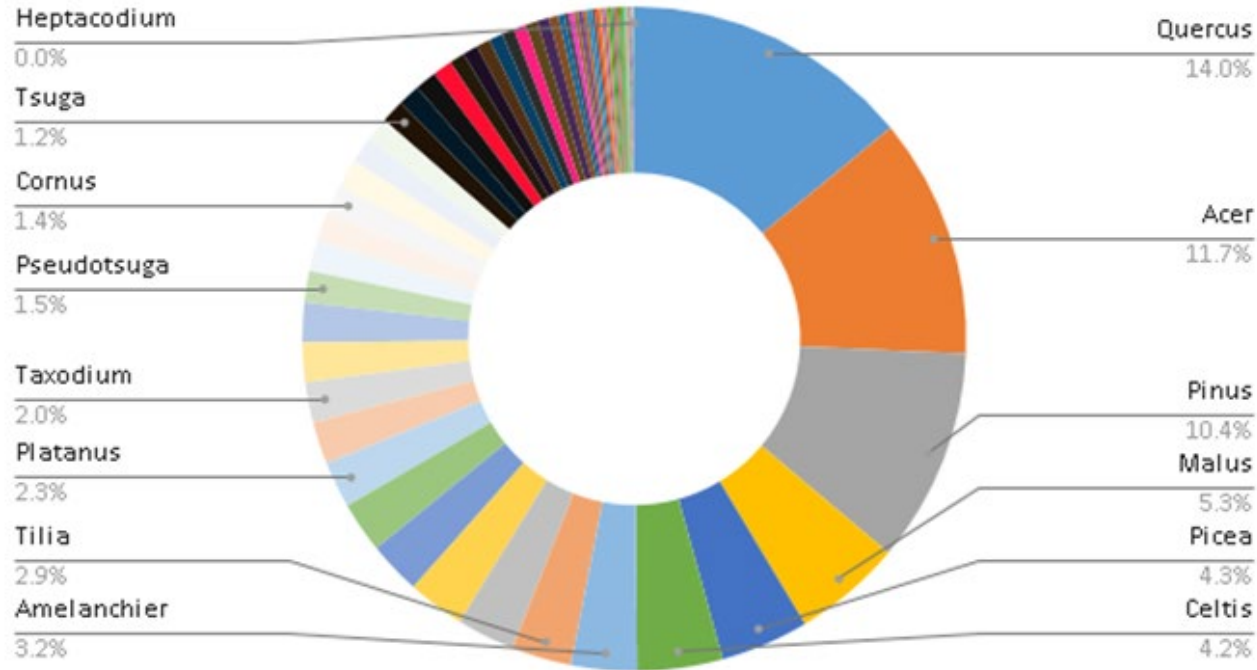
TreeKeeper pulls up information about any specific tree including DBH, risk assessment, and photos.

Tree Diversity by Species



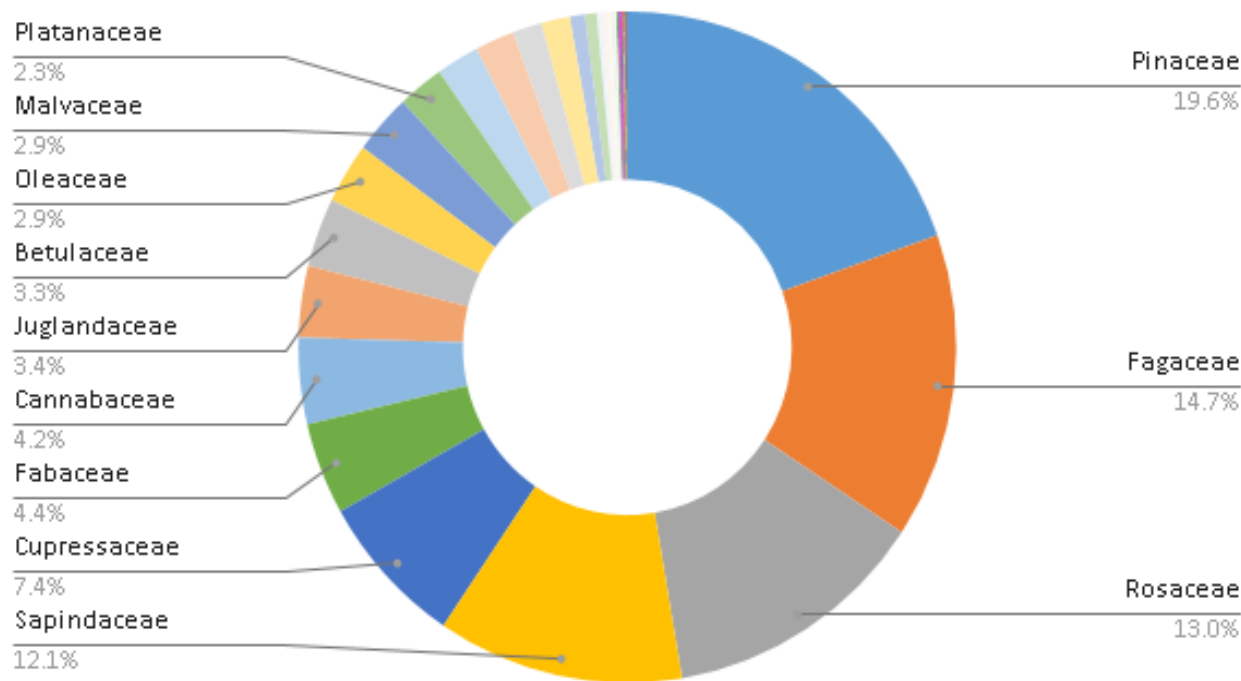
*187 different species represented on our campus. The most common species (8.1%) is eastern white pine (*Pinus strobus*).*

Tree Diversity by Genus



74 unique genera on campus. Quercus (oak) is the most common at 14%.

Tree Diversity by Family



38 families represented across campus. The most common family is Pinaceae (19.6%) which includes cedars, firs, hemlocks, larches, pines and spruces.

Diversity Summary

- Total number of trees on campus: 16,543
- Our diversity ratio is 8-14-20 (Yay! This is under 10-20-30!)
- 187 species, 74 genera, and 38 families are represented
- *Fun fact:* 1,867,387 sq. ft. of leaf surface area

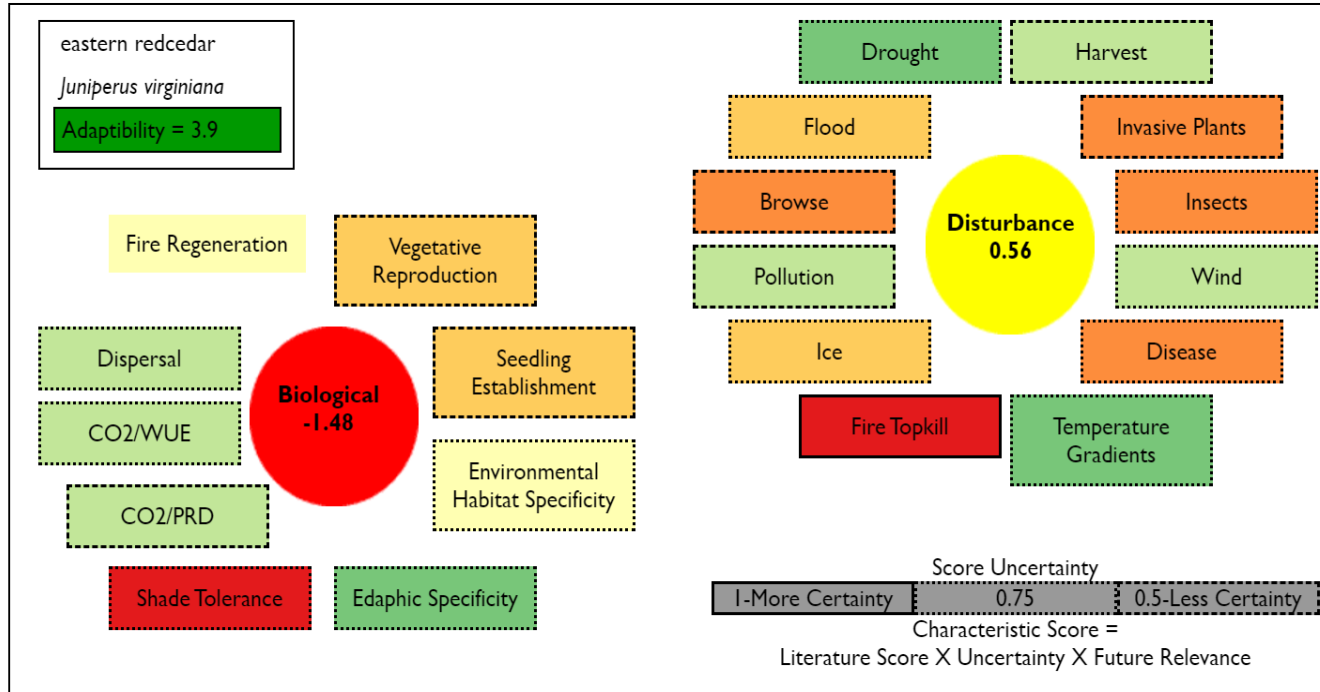


Planning Ahead



- Maintaining 10/20/30 ratio of diversity
 - Or, improving: more recent research suggest a more stringent diversity benchmark
- Climate resilience
 - Identify regional trends in tree health
 - USDA Forest Service tree ATLAS predicts tree vulnerability
 - Historical success on site and maintenance needs
- Aesthetic value
 - Preserving the beautiful appearance of our campus
 - Comfortable green environments promote productive and peaceful communities

Forest Service Tree Atlas



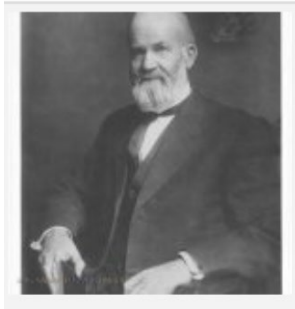
Bardeen Engineering Quad



Main Quad

“The temperature is equalized ... the air is modified as to the amount of moisture, especially in dry times in summer. The moisture of the soil is better distributed. ... The running streams are better sustained and also less subject to floods ... heavy winds are checked.”

- Thomas Burrill



Thomas Burrill,
courtesy of University
of Illinois archives



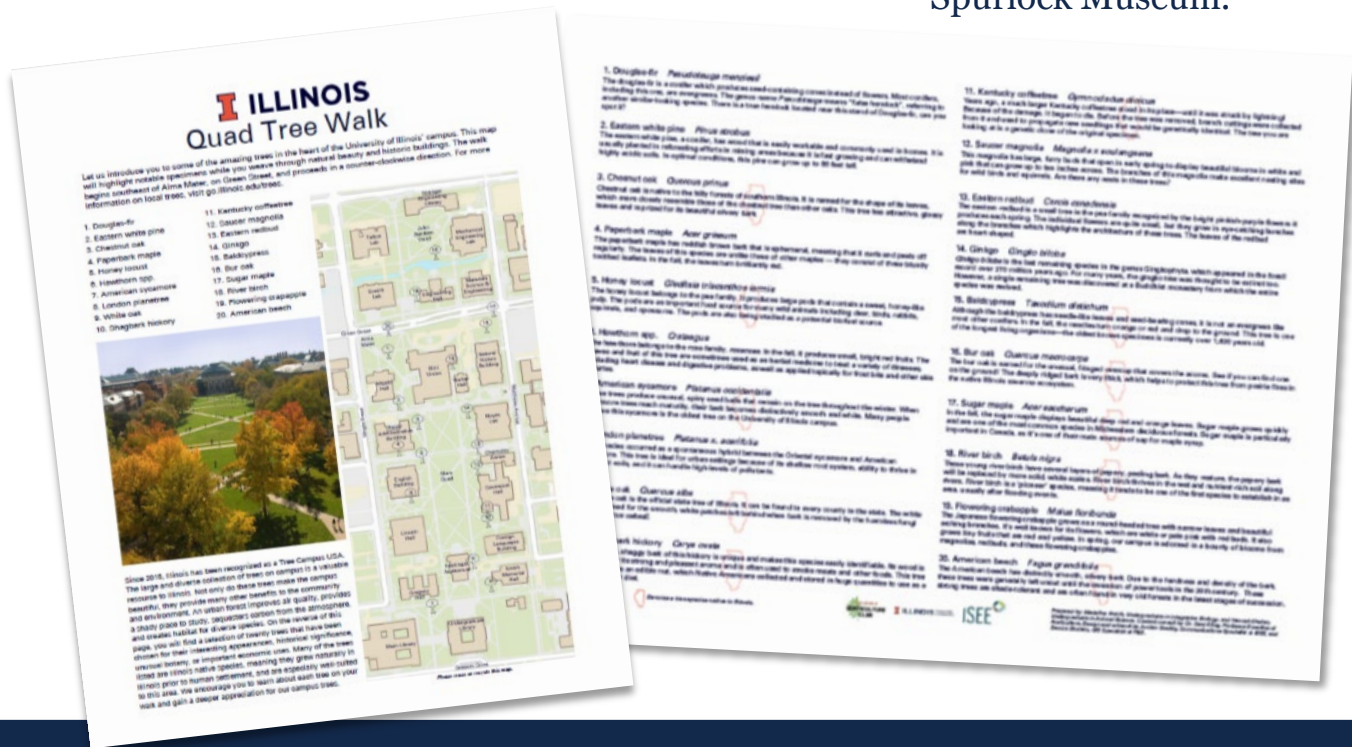
Takeaways

- A diverse and healthy urban forest contributes to a comfortable environment and confers many ecosystem services
- Our campus currently complies with the '10-20-30' diversity rule and we will aim to maintain or improve our ratio
- Urban forests are dynamic and anticipating change is a critical management strategy

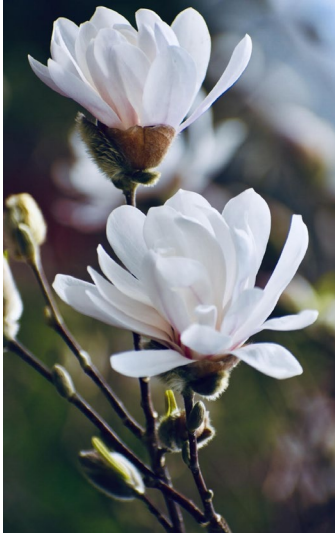


Quad Tree Walk

Get to know the trees
around the Quad! Maps
are available for free at the
Spurlock Museum.



Questions





Q & A WITH ARBORISTS

I have a line of evergreens in my backyard and the bottom half of three of them have been losing their needles over the past year. Could it be the lawn care products (weed and grub control)? Something from an old satellite dish or clothes line sitting back there? I love these trees and don't want them to die off. Anything I can do to help them re-grow their needles?

There are a lot of different trees that are part of the evergreen family. Without knowing the specifics, it could be from weed control damage. If it is a spruce, then it could be needle cast. Campus is losing several spruce trees to the needle cast disease. We recommend having a certified arborist do an assessment.



Q & A WITH ARBORISTS

Last spring/summer, on north Highcross Road (about one mile past the interstate), I noticed the trees along the road looked like their branches had been ripped off, literally. It was obvious they were trimmed but why so violently? Along the road it's as if they had a backhoe come by and just rip the branches off. They were all splintered and broken. I've seen trees trimmed before but this was something all together different. I sure hope it wasn't just to "save" time in trimming them, the poor trees. FYI: I only noticed this on the country roads around Urbana.

Highcross Road is not part of the University campus, so it is not an area we are directly involved in. We noticed this as well, but we aren't aware of what specifically is happening there. It may have been part of a utility project.

On campus, we trim our trees using the best management practices, as certified arborists. We actually sign a code of ethics saying we are performing the work to the tree's best interest.



RED OAK RAIN GARDEN TEAM

CELEBRATING THE TREES' 100TH
BIRTHDAYS

RED OAK & SYCAMORE