Urban Forestry-related News in the Midwest (November 26, 2014)

OF POTENTIAL INTEREST TO ALL

How People Make Summer Hotter

Researchers wired Madison, Wisc., to get a better grasp of the urban heat island effect

http://www.scientificamerican.com/article/how-people-make-summer-hotter/

By Niina Heikkinen and ClimateWire for Scientific American, November 25, 2014

A lakefront view of downtown Madison, Wis. It can be hotter than it looks. Credit: Wikipedia

A recent study by researchers at the University of Wisconsin in Madison offers one of the most detailed records of the variation in temperature between cities and the surrounding rural areas, known as the urban heat island effect.

Jason Schatz and Christopher Kucharik of the Nelson Institute wanted a data set that would accurately reflect how temperatures varied in Madison at the neighborhood level. They mounted 151 temperature sensors on telephone poles in areas with varying levels of building density. Each sensor took measurements every 15 minutes for 18 months between March 2012 and October 2013.

The researchers then looked at what environmental factors could be influencing the variation in temperature from urban and rural areas.

"Our study is a step forward in terms of method—we describe the urban environment in much more detail," said Schatz, lead author of the study.

Understanding the phenomenon is becoming more important as a growing number of people are moving to cities and climate change is driving overall temperatures higher, according to the study's authors.

By 2030, about 87 percent of North America's population is expected to live in urban areas, up from 80 percent of the current population, according to 2010 data from the World Health Organization. According to the study, a lot of that urban growth is likely to happen in small- to medium-sized cities like Madison, since half the people in urban areas live in cities that have populations between 100,000 and 500,000.

They found that the density of urban development and lack of vegetation had the greatest impact on temperature variation. Warming within Madison was more pronounced during the summer, and particularly at night, under calm, clear conditions.

Higher heat retention

Cities tend to retain heat more than rural areas because dark surfaces absorb heat in the day and concrete is much slower than vegetation to release heat at night. In areas with more vegetation, plant evapotranspiration helps to cool the air.

The researchers hypothesized that the greater amount of foliage in the summer could explain the seasonal differences of the urban heat island effect.
Other variable environmental factors like wind speed, cloud cover, humidity, soil moisture and snow cover also played a part in the warming effect. Land elevation and lake proximity also altered temperatures in specific areas.

"Having better data allows us to look at a lot more variability across the metro area, not just at a period of weather," said Jason Vargo, a researcher at the Nelson Institute Center for Sustainability and the Global Environment.

Vargo was not involved in the original research but is working with Schatz on a follow-up study. They are using the neighborhood-specific temperature data to study how the urban heat island effect may relate to hospital admissions and crime in specific parts of the city.

Using the collected temperature data, along with publicly available foliage data from the National Land Cover Database, the researchers created an equation that calculated the heat island effect in different areas.
"As long as land coverage is well represented, you'll get a strong sense of what the climate is like," Schatz said.
Although the exact equation couldn't be used in other cities, the study could be easily replicated if other municipalities invested in an equivalent number of temperature sensors and used the national database for foliage coverage in their area, the researchers wrote.
They published their findings in the journal American Meteorological Society last month.
City planners undervalue tree benefits

The study did not focus on ways to help cities become cooler, but plenty of other researchers are working on tackling the problem. One method that municipalities are trying is urban forestry, a tactic Madison would be well positioned to use, said Kathleen Wolf, a research social scientist at the University of Washington.

"Madison, Wis., is one of the premier cities in the U.S. in regards to urban forestry; they've had a system in place for decades," said Wolf, who studies humans' interactions with trees in urban environments. "Other cities in the U.S. are just coming into it."
Although the field has been around for a couple of decades, broader acceptance of functional rather than decorative tree planting is fairly recent, said Wolf, who has worked in her field 25 years. About a decade ago, she started to see broadening interest in urban forestry, and in the last five years, "it's just exploded," she said.
Cities like Washington, D.C.; Chicago; Portland, Ore.; and Seattle have developed good urban forestry programs, according to Wolf.
There is still plenty of room for improvement across the country. Based on her personal experience, people who study urban planning don't get much exposure to environmental planning. "Many city planners don't think of urban forestry as a substantial solution or element they need to address," she said.

Wolf emphasized the return on investment for tree-planting cities.
"City officials are always thinking about depreciation of infrastructure. With trees, immediately when they start to grow, they appreciate," said Wolf.

It can take decades for trees to reach full maturity, so tree planting can't be a quick fix. Even so, the appeal of taking local action against warming temperatures is inspiring more collaboration. Urban planners, engineers and urban foresters have started to interact more closely with each other and think in larger systems, she said.

"Cities are a sort of laboratory of climate change effects in the future," said Wolf.
Increasing foliage cover is not the only way to help keep cities cooler. Cities can lower temperatures by incorporating reflective surfaces on roofs to deflect heat absorption. Another larger-scale approach could be to make cities more compact. According to a 2010 study from the Georgia Institute of Technology in Atlanta, urban sprawl, even in cities with relatively small populations, leads to a faster increase in the rate of extreme heat events than in compact cities.
"Here in Madison, we can grow up or we can grow out. It's worth knowing what effects that could have" on temperature, Schatz said.

A super-hot summer gets amplified
To Schatz, the summer of 2012 exemplified temperatures Madison and the rest of southern Wisconsin could see more frequently in July and August by the middle of the century.
That summer, Madison had 39 days above 90 degrees Fahrenheit. The annual average is usually 12 days over 90, according to National Oceanic and Atmospheric Administration data.
Schatz cited a 2011 report by the Wisconsin Initiative on Climate Change Impacts that predicted the southern part of the state will likely experience about 25 days above 90 F per year by 2050. Northern Wisconsin, which usually experiences about five days over 90 degrees, would likely exceed 90 F 12 times per year by midcentury.
That research did not take into account the heat island effect, so temperatures within Madison could be several degrees hotter than predicted in the report, Schatz said.
"It's really important to understand [urban heat island's] nature and its consequences, especially in light of climate change," he said.

Although the summer of 2012 was the second hottest since 1939, according to NOAA, it was an "isolated warming incident." The summer was the only time in the 21st century that Madison experienced temperatures exceeding 100 F. The three hottest days happened in a single heat wave between July 4 and 6, with highs reaching 102 and 104.

ILLINOIS

Will County Forest Preserve steps up ash tree removal

http://www.theherald-news.com/2014/11/21/will-county-forest-preserve-steps-up-ash-tree-removal/axbmptx/

$250,000 allocated in budget

By LAUREN LEONE–CROSS Herald-News (IL), Sunday, Nov. 23, 2014 11:21 p.m. CST

WILL COUNTY – Thousands of ash trees within Will County forest preserves will be cut down in 2015, when the threat of infestation from the emerald ash borer beetle is expected to reach its peak in the region.

The Forest Preserve District of Will County will spend $250,000 in cash reserves next year for ash tree removal as a way of "staying ahead of the game," said Ralph Schultz, director of planning and development for the district.

That's up from the roughly $140,000 the district will end up spending this year on ash tree removal. Dead and clearly dying ash trees along trails, picnic groves and access areas must be taken down sooner rather than later, he said, with cracking and falling trees posing a threat to preserve users.

"The approach of trying to deal with it quickly and efficiently as it's happening is better for us in the long run," Schultz said.

Tree mortality in Will County should reach its peak in 2015 and gradually decline over the next five years, Schultz said, with beetle infestation shifting southwest from southern Cook County – an area that's experienced a high ash three mortality rates in recent years.

The district's tree service contractor, Homer Tree Care Inc., has removed more than 500 infested ash trees from preserves so far this year. Another 2,000 trees will be removed through the remainder of the year.

About 4,500 trees have been identified for removal next year, and staff project to spend about $250,000 annually over the next two to three years for ash tree removal, according to an October memo. High-use areas will be prioritized.

While the infestation is widespread, areas hit the hardest include some of the district's older preserves, developed around the early 1990s and have a higher percentage of ash trees, Schultz said.

Joliet's Rock Run, Isle a la Cache and Monee Reservoir are some examples. McKinley Woods in Channahon also is among those targeted for tree removal within the district's 22,000 acres.

The district's Board of Commissioners earlier this month approved a $46.6 million budget for 2015, which includes money for the strategic replanting of trees in developed forest preserve access areas, picnic groves and trailheads.

The district awarded the Joliet-based HL Landscape company a $38,014 contract last month to replace some of the dead trees.

Some trails, trail segments and preserve access areas will need to be closed periodically during the removal process, Schultz said, but he doesn't expect there to be much impact on trail users.

Dozens of dying ash trees at Midway Plaisance to be replaced

http://hpherald.com/2014/11/25/dozens-of-dying-ash-trees-at-midway-plaisance-to-be-replaced/

By JEFFREY BISHKU-AYKUL

Mounds of mulch mark the spots where the ash trees were removed on the Midway. -Spencer Bibbs

The Chicago Park District will replace more than 100 dying ash trees along the Midway Plaisance with new species next spring.
The city began felling 102 of the park's ash trees last summer because of an infestation of emerald ash borer beetles, according to CPD spokesperson Jessica Maxey Faulkner.

"The trees will be replaced with [a] mix of mostly native shade trees with the goal that no single species of variety will make up more than 15 percent of the total trees in that park," Maxey-Faulkner said in an e-mail. "Replacement trees include multiple species and [a] variety of maples, oaks, lindens, hybrid elms, ginkgo, hackberry, horse chestnut, buckeye, catalpa, honey locust, black locust, and others."
The emerald ash borer beetle was first recognized in the U.S. in Michigan in 2002 and first spotted in Illinois in June 2006, in Kane County. The half-inch green flying beetle native to Asia threatens ash trees, where they spawn larvae that travel under the bark and prevent root water from reaching leaves.

Tens of millions of American trees have died because of the beetle since 2002, according to the U.S. Department of Agriculture's Animal and Plant Health Inspection Service. The beetle has been identified in 19 states in the Midwest and Eastern U.S.

Chicago's approximately 85,000 ash trees account for 17 percent of its trees, according to the City's Department of Forestry. About 10 percent of the city's ash trees belong to the Chicago Park District, which has said it expects all of them to be infested by ash borer beetles within the next two years.

MICHIGAN

Strong winds topple trees, power lines

http://www.clickondetroit.com/weather/strong-winds-topple-trees-power-lines/29912272

Chauncy Glover Click On Detroit (MI), Nov 24 2014 11:32:10 PM EST
DETROIT –

There's no question it was a storm that went through the Detroit-area, but it didn't have snow or lightning. Monday afternoon and evening it was all about the wind, and lots of it.

We saw toppled trees all over town, many of them taking down power lines. And right now there are more than 130,000 homes and businesses without power, mostly in Wayne and Oakland counties.
One woman arrived home after a hard day's work to find her apartment had gone up in flames. Now, dozens of families are left out in the cold without homes after a fire ripped through a Westland apartment building.

"I yelled at girlfriend and kids, 'We got to get out now,'" one resident said.
High winds caused the flames to move quickly, taking out the entire building.
"I tried to run in and get my dog but they wouldn't let me," the resident said.

The heavy winds have been wreaking havoc all day long, leaving families like Rachael Diehl's in the dark.
"They said they won't have an estimated restoration time until 6 in the morning," Diehl said.
She's boiling water to keep her 3-month-old baby boy warm.

Diehl said she fears her Thanksgiving feast she just bought will spoil and her little one's first Thanksgiving. It will be one to remember, but for all the wrong reasons.
"I am very nervous," she said. "Thanksgiving is in two days, so I'm nervous."