

OVERTON PARK

notes

december 2016

Research paints a picture of the forest and the trees

The Old Forest is a rare gem--more than 100 acres of old-growth woods surrounded on all sides by urban development. This proximity to so many people makes it unique among State Natural Areas in Tennessee and presents invaluable opportunities for education.



Dr. Rachel Jabaily's botany class studies wildflower specimens from the Old Forest.

As Overton Park Conservancy comes to the end of its fifth year managing the Old Forest, we wanted to share some of the insights we're gaining about this special place thanks to our academic and community partners.

Urban Forestry Fellowship

Under the direction of Dr. Kimberly Kasper and our Director of Operations Eric Bridges, two students from Rhodes College are chosen each semester to conduct research in the Old Forest. Their focus this semester is the replication of a 1987 study by University of Arkansas professor James Guldin. That initial study revealed problems in the regeneration of the oak and tulip poplar trees that dominate the forest. Because these are the tallest-growing species here, the Old Forest will look much different in a few decades if a new generation fails to establish itself. As the oaks and poplars fall, they will be replaced by much shorter trees.

The fellows expect to complete their research in 2017 and will seek to publish the results. You can read more about this study on page 5.

In addition to this work, fellows have documented the ages and locations of remaining old-growth trees. They have also mapped many invasive species with the hopes of understanding their

modes of establishment and spread. The Old Forest has nearly 80 non-native species, with 14 of those classified as invasive. Some, like wisteria, have had very little impact on our forest, while others, like English ivy and wintercreeper, have become firmly established. It will be interesting to see if our research establishes a link between the presence of invasive species and the difficulty of new native species in re-establishing themselves.

Seedling Dynamics

Because healthy regeneration is so important to retaining the Old Forest's character, Dr. Tara Massad of Rhodes College is also studying this issue. Last year she began a seedling dynamics study, installing seed traps throughout the forest. She and her students periodically collect seeds, document the species mix, and germinate them in City of Memphis greenhouses. She will then

(continued on page 2)

compare the regeneration success of the greenhouse seedlings with those growing in the forest near the seed traps. If the seeds germinate more successfully in a greenhouse, that could mean the forest seeds aren't getting enough sunlight to germinate, that there's too much leaf litter for the seedlings to push up, or that insects are over-consuming the foliage of the plants that do germinate. That might also mean that the greenhouses can offer at least temporary assistance in establishing the next generation of trees.

Herbarium Collection

In 2009, botanist Tom Heineke undertook a yearlong project to document the number of flowering plant species in the Old Forest. That survey has formed the backbone of much of our research, as well as the Field Guide to Plants we created on the iNaturalist web platform. We wanted to build on that survey by creating an herbarium collection, and Dr. Rachel Jabaily of Rhodes College agreed to partner with us on that project.

Dr. Jabaily's students periodically collect voucher specimens of plants in the Old Forest, adding them to the Rhodes herbarium in a special collection for Overton Park research. These specimens establish a baseline from which we can monitor change, and they're also a valuable source of genetic information. Specimens can only be collected from the Old Forest with the permission of the Tennessee Department of Environment and Conservation, which approved this project because of its long-term value to understanding the health of the forest.



Dr. Tara Massad collects seeds from one of her seed traps to see if they germinate more effectively in a greenhouse.



Summer Rhodes fellows Helen Hope and Mac Wilson collect data on an area inhabited by a female copperhead.

Copperhead Research

Under the advisement of U of M professor Dr. Judith Cole and Memphis Zoo Curator Dr. Steve Reichling, researcher Malle Carrasco-Harris is conducting a multi-year study comparing the population of copperheads in Overton Park with those in other local forests. Her goal is to understand the effect of urbanization on snake populations.

The population of copperheads in the Old Forest has likely been isolated for more than a century. As Memphis became more developed, there was nowhere near the forest for the snakes to relocate. While birds and mammals can be quite mobile, it would take a snake a long time to move to another wooded habitat. Perhaps because their gene pool has been so isolated, Malle has found that the average size of an Overton Park copperhead is about four times smaller than one found at Meeman Biological Station in Millington.

Malle conducts her research by collecting snakes and bringing them to the Memphis Zoo to be microchipped. She returns them to the same location and then tracks their movements via radio equipment. This allows her to analyze the same snakes over time, to see if their weight and length have changed, if they're reproducing, and if they're making significant moves across the forest.

Copperheads are the top predator in the Old Forest, and they enjoy mice, amphibians, small birds, and especially cicadas. Because they use camouflage as a defense mechanism, you're more likely to run into them in leaf litter off-trail. You can avoid this by keeping yourself--and your dogs--on marked paths.

tina's message

Nobel Peace Prize Laureate Wangari Maathai wrote in her book *Replenishing the Earth* that we must experience nature in order to love it. "Nature – and in particular, the wild – feeds our spirit, and a direct encounter with it is vital in helping us appreciate and care for it. For unless we see it, smell it, or touch it, we tend to forget it, and our souls wither. This is particularly true in urban settings."

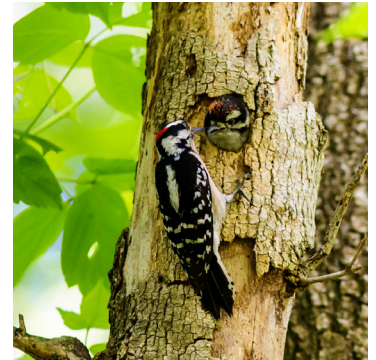
A large and vital part of Overton Park Conservancy's work is focused on the Old Forest State Natural Area. For years before we assumed management, it was left alone, growing over with privet and kudzu and garnering a reputation as a dangerous place. That has now changed.

The Conservancy has begun to restore the forest to good health through research, planning, removal of invasive species and other threats, and a strong collaboration with our partners at the Tennessee Department of Environment and Conservation (TDEC).

Most importantly, we've set the stage for visitors to feel ever more comfortable exploring the forest. With an army of volunteers, donors, scientists, and other partners, the Conservancy has restored and maintained miles of trails, installed new trail markers, and established localized field guides to flora & fauna. Now, thanks to a generous gift from the Turley and Deupree families, we've begun to transform the main entrances into inviting gateways that tie the forest seamlessly and beautifully to the park's picnic and play spaces.

The result is a continuous flow of changing experiences from one side of the park to the other, with a wide diversity of park visitors meeting on the forest's paved and unpaved trails. Our goal is for visitors to feel invited into the forest and curious about its features and inhabitants – to see it, smell it, touch it, and to help us care for it. As Maathai indicated, these experiences are a critical step in growing the next generation of conservationists.

The Conservancy was established by visionary civic leaders and philanthropists who invested heavily in the park's restoration, with seed funding to help establish our new growth. **As we close out our fifth year of operation, our initial grants are ending.** While we craft a management plan for the next 100 years, designed to protect the park and the forest for generations to come, we will need every nature lover whose spirit is fed through visits to the forest to participate in the stewardship of this important asset. **Please make a gift today to help us continue protecting our civic treasure.**



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Welcome gateways sprouting up



Tylur French and his team at Youngblood Studio work to weld the pieces of Old Forest Arch together; Ben Butler's team assembles a model of Growth in the studio.

The Old Forest has always been full of treasures. But until recently, the metal gates that keep it closed to vehicles have thrown up a roadblock for cyclists and pedestrians as well – particularly those who might be visiting for the first time.

Enter Bill and Becky Deupree and Henry and Lynne Turley. They envisioned a way to welcome visitors into the forest, while adding to Overton Park's rich tapestry of public art. Their generous gift, in honor of their parents, allowed Overton Park Conservancy to enlist three local artists to create a one-of-a-kind welcome gateway at each entrance to the forest.

Yvonne Bobo's *Rhapsody*, which depicts a flock of migrating birds, was the first to go up this summer. Visitors who enter the forest near the golf clubhouse were treated to watching Yvonne's progress, as she and her team installed 200 birds (150 made of steel, 50 of bronze) and created a different patina on each to give them character. In the summer, standing back from the sculpture gives the effect of viewing the forest through a green eye. Like the other two gateways, *Rhapsody* doesn't obscure the beauty of forest, but offers a new lens through which to appreciate it.



Yvonne Bobo's *Rhapsody* was completed this summer.

Old Forest Arch, the gateway created by Tylur French and his team at Youngblood Studio, is currently nearing completion at the entrance adjacent to Overton Bark. For this arch, his second in the park (Tylur also designed *Bike Gate*), he took as his inspiration the Art Nouveau style that was dominant when Overton Park was founded in 1901.

Old Forest Arch will have some extra features for park visitors: a park map engraved into the concrete at the base of the structure, a rack that will accommodate up to 10 bikes, and a bike pump and repair station. Tylur expects construction to be completed by the end of the year.

Also in progress is Ben Butler's *Growth* at the East Parkway entrance. Meant to recall the annual growth rings of trees, Ben's design honors the natural processes that sustain an ecosystem like the Old Forest. Heavy construction on this gateway needed to wait until after December 3's St. Jude Marathon, which crossed the construction site. Starting in January, visitors to East Parkway will begin seeing this unique arch rise up and provide a window through one tree into many others.

How has the Old Forest changed in 30 years?

When he began researching Overton Park's Old Forest 30 years ago, University of Arkansas at Monticello professor Dr. James Guldin called it "as spectacular a stand of old-growth hardwood as you are likely to see." But his findings left him concerned.

Any visitor to the Old Forest will notice that certain trees tower over all the others. These large specimens are primarily 11 species of oaks and Tennessee's state tree, the tulip poplar. Other types of trees – maples, hickories, box elders – do not reach such great heights. "The oak component is the major contributor to the large-tree character for which Overton Park is renowned," Guldin wrote. "Yet, as important as the oak component is in the overstory, oaks are extremely poorly represented in the understory."

Guldin determined this by doing systematic sampling of the forest. He chose about 80 sample points and recorded the presence of four different tree classes within predetermined distances from those points:

- Trees with a diameter 10 inches or greater
- Trees with a diameter between 5 and 10 inches
- Trees with a diameter under 5 inches but taller than 2 feet
- Saplings less than 2 feet tall

Two-thirds of the large trees Guldin identified were oaks. Yet, at lower levels, the much smaller pawpaw tree dominated. Pawpaws are a fine native tree, but they typically only reach 15-20 feet tall, whereas a red oak can achieve heights of 70-80 feet. Guldin was alarmed to see that oak saplings, which should be readily visible in areas where a sun-filled gap had been created by large tree fall, were apparent in very low numbers. If the oaks and poplars never pushed up through those gaps, eventually the older generation would die off and the new dominant species would be significantly smaller types of trees.

That was then...but what about now? This semester's Rhodes Urban Forestry Fellows, Ethan Williford and Mac Wilson, have been recreating Guldin's study using the same methods, with an assist from the professor himself. Now, though, the fellows are using GPS to map their plots, which will make this study much easier to replicate for future researchers. They've taken data from about 70 plots this semester, and will use the winter for analysis. They hope to issue a report next summer comparing their findings to Dr. Guldin's in order to see what's changed over the past 30 years. Stay tuned for a look into whether our oaks are on the rebound or still in distress.



Ethan and Mac collect data in a canopy gap.

Why Urban Forestry?

Urban forestry is a relatively new subdiscipline that has grown as the world has become increasingly urban and developed. Broadly speaking, it is primarily concerned with management of tree and woodland populations in urban systems. This includes planting and maintaining street trees, studying urban ecosystems, and the conservation and management of urban woodlands.

The Urban Forestry Fellowship is a collaboration between Rhodes College and Overton Park Conservancy, established in 2014 by Dr. Kimberly Kasper, Assistant Professor of Anthropology at Rhodes and Eric Bridges, the Conservancy's Director of Operations. The fellowship is mainly focused on the study of the Old Forest State Natural Area and understanding how it is regenerating and its general health. Additionally, the fellows work with the college to maintain and improve its accredited arboretum.

Urban forestry is critical for the preservation of city trees and green spaces in an urban environment. Ecosystem services such as recreation, clean air and water, shade and wind protection, and carbon sequestration are just some of the benefits that they provide. However, these services are threatened by consequences of urbanization such as invasive species and land development. Therefore, the study of and management of these systems is vital to ensure their longevity and health for the enjoyment of people within the city of Memphis and the world at large.

- Ethan Williford and Mac Wilson

June 3: Save the date for Merrymaking 2017

This year's Day of Merrymaking family festival was our most successful yet, netting over \$35,000 for the park and bringing thousands of Memphians together for an afternoon of fun in the sun. We had music, bubble balls, water slides, games, lots of local food vendors, and a fabulous beer garden

built by our friends at Echo Systems and stocked with beer donated by Memphis Made Brewing Company.

We're already making plans for next year's festival, which will unfold on **Saturday, June 3, 2017**. We can't wait to tell you more about all the fun in store as the event approaches!

Special thanks to our presenting sponsor, Methodist Le Bonheur Healthcare, for making the event possible. And thanks to all our other sponsors: The Commercial Appeal, The Daily News, Hollywood



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If your company would like to sponsor 2017's Day of Merrymaking, please contact our Director of Development, Susannah Barton, at 901-214-5450 or sbarton@overtonpark.org.

Stay up to date on the parking reconfiguration



Rugby tournaments were held on the Greensward this year.

On July 19, Memphis City Council approved a plan that would reconfigure the Memphis Zoo's main parking lot, with the ultimate goal of eliminating overflow parking on the Greensward. Since that date, a steering committee has been created with representatives from the City of Memphis, Overton Park Conservancy, the Memphis Zoo, and the community. That group will lead the process of selecting a design firm, holding public meetings to move toward a final design, and overseeing construction.

At the steering committee's first meeting, the team agreed that the construction project will come in phases, so that the Zoo's main parking lot will never be completely closed. Work will also take place primarily in the off-season when demand for parking is lower. To develop a tree care plan, the City will consult with the Memphis Tree Board, an advisory group that makes recommendations for the care and maintenance of public trees.

To stay up-to-date on the plan's progress, including meetings where you can offer your feedback, visit www.memphistn.gov/parkingplan.

Join our new Canopy society and donate a day

Did you know that Overton Park Conservancy spends about \$1,000 a day on park maintenance? That's what it takes to keep our managed area of the park--the Greensward, Veterans Plaza, the Old Forest, and the East Parkway and Rainbow Lake playground and picnic areas--clean and welcoming. That number doesn't include staff salaries, research, administration, or capital projects.

We can anticipate basic operational expenses year after year. Planning for those expenses means identifying a steady source of revenue to meet our needs. We've enjoyed tremendous support from the community, and we wanted to offer some special benefits to those who help us with our operating costs.

With that in mind, we're excited to announce Canopy, a new giving society for donors who give \$1,000 or more annually. Canopy members will have the opportunity to attend roundtable discussions with Conservancy leadership, as well as two social gatherings during the year, such as the recent Flashlights in the Forest, a nighttime tour of the Old Forest for families. Canopy members will also receive invitations to exclusive events, such as park tours with scientists and researchers.

In addition, Canopy donors may also choose to designate their gifts as a sponsorship of A Day in Overton Park. These sponsorships will be acknowledged through temporary signage in the park, recognizing the donor or a person of the donor's choosing. Members will receive a certificate of sponsorship.

Canopy is the newest addition to our membership program, which includes levels from \$25 annually all the way to \$1,000. Members of \$50 and above receive an exclusive Overton Park t-shirt, with a new design each year. Our 2017 t-shirts will feature an image of one of the park's most distinctive trees, the bulbous Kentucky coffee tree in the formal gardens. It is artist Martha Kelly's favorite tree in the park, and it has inspired many of her watercolors and block prints.



Donors of \$1,000 may direct gifts toward sponsoring a day of operations at Overton Park.



A sneak preview of 2017's membership t-shirt design, featuring artwork by Martha Kelly.

So where does that \$1,000 a day go? The bulk of the expense is for groundskeeping, including mowing, landscaping and gardening, and leaf removal. Mowing alone costs around \$125,000 per year. Another significant expense is operating the restrooms, which cost about \$60,000 to keep cleaned and stocked for a year.

The remainder of those operating funds go toward cleaning up tree debris after storms, maintenance on projects like Rainbow Lake Playground and Overton Bark, removing invasive species in the Old Forest, keeping things like mulch and limestone refreshed, and general repairs.

Your membership--at any level--helps Overton Park Conservancy provide for the park's future. A steady source of funds is the foundation on which we build all the capital and maintenance improvements to the park. We also love seeing those gorgeous park shirts all around town!



Sign up for Canopy or any other membership level at www.overtonpark.org/membership.



VERTON PARK CONSERVANCY

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Birds of Overton Park's Old Forest, Memphis, TN

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Info about the birds who live in or migrate through the Old Forest of Overton Park in Memphis, TN. Data points thanks to whatbird.com. For more information, visit www.allaboutbirds.org or www.whatbird.com. [less](#) ↑

All 105

A - PRESENT

fall 97

spring 105

summer 63

winter 53

B - SIZE

large (16-32 inches) 9

medium (9-16 inches) 17

small (5-9 inches) 61

very small (3-5 inches) 18

C - PRIMARY COLORS

black 25

blue 5

brown 32

buff 5

gray 39

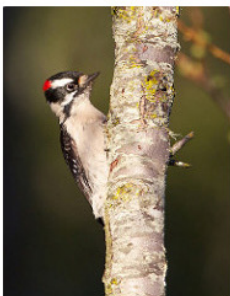
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Downy Woodpecker¹
Picoides pubescens




Hairy Woodpecker²
Picoides villosus



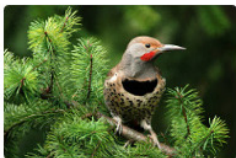
Pileated Woodpecker³
Dryocopus pileatus




Red-bellied Woodpecker⁴
Melanerpes carolinus




Red-headed Woodpecker⁵
Melanerpes erythrocephalus



Northern Flicker⁶
Colaptes auratus



Yellow-bellied Sapsucker⁷
Sphyrapicus varius



Barred Owl⁸
Strix varia

Hey, what's that bird? Our new field guide to the more than 100 birds that live in or migrate through the Old Forest is now live! Access it at <http://www.inaturalist.org/guides/3776>.