

Partnering for Primates

Nature Play Branches Out

> Gardens for Animals

A MAGAZINE FOR MEMBERS OF LINCOLN PARK ZOO



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FEATURES

Partnering for Primates / 6

Lincoln Park Zoo collaborates for the care and conservation of chimpanzees and gorillas.

Playing for Keeps / 12

The zoo is nurturing lifelong conservationists by connecting young children with nature.

To-Zoo List / 16

There's always something happening at the zoo. Get out your calendar and save the dates for these exciting events.

Chewing the Scenery / 18

From diets to habitats, plants grown on grounds enrich animal lives and make the zoo's gardens more earthfriendly.

X Look for this icon to find great gifts from Lincoln Park Zoo.

Our Impact Depends on You

Who funds Lincoln Park Zoo? You do! Zoo members, donors and visitors help cover around 80% of our annual capital and operating costs necessary to keep this non-profit, privately managed institution open and free every day and support its mission of wildlife conservation, animal care and learning. Support the zoo at *lpzoo.org/donate*.

DEPARTMENTS

Perspective / 3 Wild File / 4 Take Action With Us / 11 Zoo Family Album / 22 Field Note / 23

Cover: Female chimpanzees Nana (foreground) and Chuckie (background) are part of a family group that supports their social needs at Regenstein Center for African Apes. Learn about the zoo's leadership in great ape care and conservation on page 6. Photo by Todd Rosenberg.

LINCOLN PARK ZOO MAGAZINE

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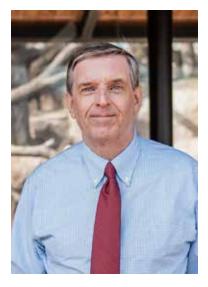
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special web-only features including photos, video and blog posts—inspired by the stories in this issue.



Great Expectations

Spring is an inspiring time at the zoo. As grass and flowers emerge from thawing soil, animals head outside to bask in the sun. Morning joggers return, speeding past penguins, gibbons, and hundreds of other animals in our care.

It's a time of life and rebirth that calls us to think about our planet and our impact on it. As we plan a summer celebration of Lincoln Park Zoo's 150th anniversary, we're also considering the next 150 years of environmental stewardship. As we grow our local and global wildlife conservation programs, how can we do more in our operational efforts to be green?

For many years, we have taken on basic conservation efforts: recycling, LED lighting, encouraging staff to use public transportation, and eco-friendly cleaning products. But we're looking to raise our ante.

We've looked at "big-ticket" items like entire animal exhibits and how we can be greener in building them. We have green roofs incorporated into Walter Family Arctic Tundra, Robert & Mayari Pritzker Penguin Cove, Flamingo Dome, Regenstein Center for African Apes, and Pritzker Family Children's Zoo. Currently under construction, Searle Visitor Center will also have a green roof and is seeking LEED (Leadership in Energy and Environmental Design) certification with energy-saving HVAC, responsible storm water management, and repurposed construction materials including stone from the former East Gate plinths.

Our Green Team, an internal group of passionate environmentalists, is exploring how to reduce single-use plastics on grounds; we already switched from plastic to paper straws in all our food venues. Our next step is phasing out plastic bags in our retail operations.

When the zoo rebranded last year, the Green Team went to work to recycle materials with old branding and made 3,037 animal "toys" from old uniforms, then donated them to 14 dog and cat shelters and one chimpanzee sanctuary. They repurposed staff IDs as guitar picks and gave paper goods to schools (see "Wild File", page 4).

On a global scale, we're looking at our use of palm oil and partnering with Forest Stewardship Council-certified companies on sustainable logging practices benefitting chimpanzees and gorillas in the Republic of Congo. We're building the Urban Wildlife Information Network to ensure wildlife thrives in our urbanizing world.

Your support makes these efforts possible today and sets an example for generations to follow for another 150 years.

16 Bell

KEVIN J. BELL PRESIDENT AND CEO

BY EMILY ALTIMARI



Rebrand, Reuse, Recycle

In April 2017, Lincoln Park Zoo rebranded with a new logo and tagline. In with the new meant out with the old. Pre-brand uniforms, nametags, ID cards, signs, and stationery were no longer usable. Enter the Green Team, a group of zoo employees (including Julie Somor and Lisa Raimondi, left) who hatch and implement environmentally conscious initiatives within zoo operations. Their low-waste solution: Rags to Enrichment.

With the help of staff and volunteers, corporate members, and even camp participants, the Green Team gave these items new life in novel ways. Old uniforms were refashioned as dog and cat toys donated to local animal shelters and as enrichment items for chimpanzees at Chimp Haven (left, bottom), the national chimpanzee sanctuary in Louisiana with which the zoo partners. The final toy tally: 1,175 dog toys and 1,862 cat toys, plus 12 boxes of zoo jackets local cat and dog shelters will use as blankets.

Old buttons, name tags, and other items found new homes with local artists and crafters. As it turns out, one man's ID badge is another's guitar pick.





Left: Purchase a Green Team pet toy at Wild Things gift shop to help support the zoo's conservation efforts.

Fair Feather Friends

Last fall, Hurricane Maria wreaked havoc on Puerto Rico, upending lives, leveling buildings, destroying the power grid, and flattening scarce rainforest habitat that's home to the Puerto Rican parrot, one of the world's most endangered species.

By 1975, habitat loss, poaching and hurricanes had lowered its wild population to a mere 13. Today, however, an aviary population is perched at more than 240 individuals. Roughly 60 birds have been reintroduced into the wild.

The success springs from a breeding program spearheaded by the U.S. Fish and Wildlife Service and Puerto Rico Department of Natural and Environmental Resources at aviaries in El Yunque National Forest and Rio Abajo Forest Reserve. For many years, Lincoln Park Zoo population biologists have helped analyze demographic and genetic trends used to match breeding pairs.

While the parrots benefit from the pristine tree canopy, the remote sites present challenges for disaster recovery. Herbie Diaz (far left in group photo, right), the zoo's Director of Buildings and Grounds and a Puerto Rican native, recently provided a different sort of support, traveling to our partner aviaries to help with physical repairs.

"While the hurricane thankfully did not affect the aviary populations, it felled power lines, crushed nest boxes and stripped away parrot habitat," says

Diaz. "I worked alongside aviary personnel to repair damage and remove dangerous branches and trees. Although the damage seems severe, these aviaries are dedicated to Puerto Rican parrot recovery, and the conservation biologists have high hopes for continued success as the birds enter breeding season this spring."









Meet a Penguin

A black and white figure emerges. It turns its head. You see a beak. Slowly it approaches...well, waddles. It's Phil! He's an African penguin, a member of the cozy colony at Robert and Mayari Pritzker Penguin Cove, and a voluntary participant in Malott Family Penguin Encounters. He's back for the program's second season, and you can meet him!

From April to October, get toes-tobeak with endangered African penguins inside the exhibit. Guided by a learning interpreter and penguin keepers, you'll learn what daily life is like for the species at the zoo and on Africa's southern coast. You'll get a bird's eye view of the penguins as they waddle at your feet and leave inspired to help these endangered birds in the wild by making environmentally conscious decisions.

Encounters take place at 10 a.m. and 3 p.m. Friday, Saturday, and Sunday from April 1–May 27 and September 4–October 31. From Memorial Day to Labor Day, the schedule changes to 3 p.m. Monday–Thursday and 10 a.m. and 3 p.m. Friday–Sunday.

Participants must be at least 6 years old; children between ages 6 and 17 must be accompanied by an adult. The experience is \$60 per person (\$50 per person for Lincoln Park Zoo members), and participants can bring a small camera. The experience lasts approximately one hour.

Learn more and register at *lpzoo.org/ penguinencounter*.

Snow Doubt About It

Akita, you are *not* the father. A paternity test revealed that mid-ranking male Miyagi, not alpha male Akita, is the father of all four Japanese macaques born at Regenstein Macaque Forest. Miyagi has sired Otaru (female, born April 2016), Iwaki (female, born March 2016), Nagoya (female, born April 2016), and Obu (male, born May 2015). Obu now resides at Minnesota Zoo.

Keepers had previously surmised as much while observing how often Miyagi (above with Iwaki and mother Izumi) interacted with the youngsters in the troop. They even nicknamed him "Mr. Mom," now scientifically validated.

How did Miyagi manage to successfully mate more than alpha male Akita? Frequency.

Using ZooMonitor—a Lincoln Park Zoo-developed app that records and analyzes animal behavior to promote animal welfare—scientists at the Lester E. Fisher Center for the Study and Conservation of Apes recorded the amount of times male macaques engaged in mating behaviors.

Miyagi far outperformed other adult males Akita and Kuma. He was responsible for roughly 65 percent of the mounts observed during the 2015 breeding season when Otaru, Nagoya, and Iwaki were conceived.

So why hasn't Miyagi overthrown Akita as top-ranking male? Curator of Primates Jill Moyse explains that breeding is just one of many factors that determine rank among Japanese macaques. Others include access to food and preferred spaces, physical prowess, and matrilines (the rank of an offspring's mother). For now, at least, Akita—the troop's largest member—still holds the advantage in those first few.

Partnering for Primates

Lincoln Park Zoo collaborates for the care and conservation of chimpanzees and gorillas

BY KATE SILVER

In the first installment of our year-long magazine series on the care and conservation of primates, discover three partnerships dedicated to improving welfare and protecting habitats for great apes: Chimp Haven, Project ChimpCARE, and the Goualougo Triangle Ape Project.

A Match Made in Haven

Keithville, Louisiana, is a long way from Lincoln Park Zoo. But there, nearly 900 miles south, Lincoln Park Zoo staff is conducting extensive research at a national sanctuary that will help improve care for chimpanzees in Chicago and beyond.

At Chimp Haven (pictured below), sunlight streams through 200 acres of peaceful pine forests, and chimpanzees swing from branches and poke sticks into a faux termite mound. This chimpanzee sanctuary is a kind of Sun City for the animals, most of which are retired from laboratories and research facilities throughout the United States.

Chimpanzees are the closest genetic relative to human beings. Those who live here were bred by the U.S. government to test vaccines, therapies, and medical procedures. In



2000, President Bill Clinton signed the Chimpanzee Health Improvement, Maintenance, and Protection (CHIMP) Act, which paved the way for Chimp Haven to become a national sanctuary, and started building the momentum that would, in time, put a stop to conducting invasive biomedical testing on chimpanzees. Today, more than 230 chimps live at Chimp Haven, and there are expansion plans to accommodate a long waiting list of chimps still living in labs.

Chimp Haven was founded in 1995 by two researchers with the goal of creating a permanent home for chimpanzees no longer used in biomedical research. That the home is surrounded by nature means they can spend their days tumbling through the forest, using tools, developing relationships and social groups, and napping in the sunshine.

Stephen Ross, Ph.D., who is director of the Lester E. Fisher Center for the Study and Conservation of Apes at Lincoln Park Zoo, became involved in Chimp Haven in its early days, first as a member of the advisory board of directors and later as chair of the board of directors. Ross is the matchmaker behind the first-ever partnership between an accredited zoo and an accredited chimpanzee sanctuary. He saw the potential for the two to benefit from one another: the sanctuary could use the zoo's extensive research and education expertise with both animals and visitors, and the zoo could learn from the management of such a large population of chimps (more than 20 times the number that live at Lincoln Park Zoo), contributing science-based insights that could improve the understanding of and care for the animals.

"We're committed to the welfare of the animals here at our zoo, and we're committed to the welfare at other likeminded organizations as well,"

organizations as well says Ross.

With a grant from the Arcus Foundation, Lincoln Park Zoo hired research fellow Bethany Hansen, Ph.D., who is based at Chimp Haven and studies the animals on a daily basis. In recent months, Hansen (pictured right) has been studying how chimpanzees use





their space. While there are regulations that dictate minimum space requirements for captive chimpanzees, "No one really knows what's optimal," says Hansen. She's been using ZooMonitor—a data collection system developed at Lincoln Park Zoo—to better understand chimpanzees' preferences at the sanctuary.

"I collect data on where they choose to go in their enclosure," she says. By analyzing choices like how high are they off the ground and what type of material are they putting their weight on, researchers could learn how to design enclosures best suited to a chimpanzee—as chosen by the chimpanzee itself.

In addition, Lincoln Park Zoo researchers investigated whether visitors onsite for public programs had an effect on behavior and welfare of chimpanzees. "We found some changes during public programs (chimps fed more and moved around more), which was likely due to the fact the chimps often get food and puzzles during public programs," says Hansen. "We did not find evidence that the chimpanzees behaved more aggressively or abnormally around visitors, so it does not seem that public programs impacted their welfare in a negative way."

Chimp Haven's expertise in chimpanzee introductions is an unrivaled resource. "Their success rate is unbelievable," says Hansen. At the same time, expertise from Chimp Haven staff could one day influence procedures at Lincoln Park Zoo. Their experience in introducing a new chimpanzee to an existing group, for example, is unrivaled. "There are few organizations in the world that have this many chimps and have done this many introductions," says Hansen. "Their success rate for introductions is unbelievable."

Lincoln Park Zoo has also shared its own expertise on visitor behavior, and worked with Chimp Haven to create signage about the history of chimpanzee research and the need for sanctuaries. Chimp Haven is only open to the public six days a year, but each of those days presents an opportunity to leave an impression.

Though not by their own choice, the animals at Chimp Haven have lived a life of service. Even in their retirement, they're playing an important role, helping scientists conduct non-invasive research that will improve the way the chimps are cared for, today and in the future.

Better Homes and Guardians

Behind a staff door at Lincoln Park Zoo's Regenstein Center for African Apes, away from public view, a chimp sticks out his tongue at Ross.

"I'm not playing your tongue games," Ross gently chides. Ross, who is director of Lincoln Park Zoo's Project ChimpCARE (Communication, Advocacy, Research and Education), an initiative that seeks to improve the lives of chimpanzees, understands why Zach is acting like this. He and another chimp, Pat, came here from an unaccredited facility

where they were encouraged to do silly things that would make people laugh. Here, in this quiet, behind-thescenes sanctuary, Zach and Pat are encouraged to be themselves, thanks to Project ChimpCARE.

Until a few years ago, no one knew how many chimps lived in the United States. There was no registry, no map. Ross sought to create a population database, and, supported by a grant from Arcus Foundation, set off across the country, visiting homes and roadside zoos, conducting a nationwide



census. Of the nearly 2,000 chimps he counted, only 15 percent lived in accredited zoos. Many had been raised to be in the entertainment industry, or coddled as pets. He met dozens of people who, after adopting a chimp, couldn't give it the care it needed. In time, they asked Ross for help. Through Project ChimpCARE, he's facilitated the transfer of nearly 50 chimps to accredited zoos or sanctuaries.

Relocation—like with Zach—is just the first step. Recent research by Ross and Fisher Center scientists, published in the scientific journal *Royal Society Open*, indicates that chimps raised around humans as pets or performers carry a higher level of stress long-term and can be difficult to integrate with other chimpanzees. "They don't really know how to be a chimp," says Ross. That's why Ross discourages behavior like Zach's tongue wagging and rewards behavior like grooming and interactions with other chimps.

The public may never see Zach, but that, says Ross, is okay. He's spent enough time pleasing humans. Now is his chance to be a chimpanzee.

Influencing Attitudes in Africa

David Morgan, Ph.D., set out to protect forests and study chimpanzees and gorillas in Africa. Lately, though, it's humans who are surprising him.

The Goualougo Triangle is in a remote region of the northern Republic of Congo. There, chimpanzees spend time in the towering 200-year-old trees, and western lowland gorillas trawl the flora and fauna of the forest floor. Since 1999, Morgan, a Lincoln Park Zoo research fellow, and his wife and research partner, Crickette Sanz, Ph.D., have been studying the apes through the Goualougo Triangle Ape Project (GTAP), a collaborative project founded by Morgan and supported by Lincoln Park Zoo, Congolese government officials, wildlife biologists, university students, and others.

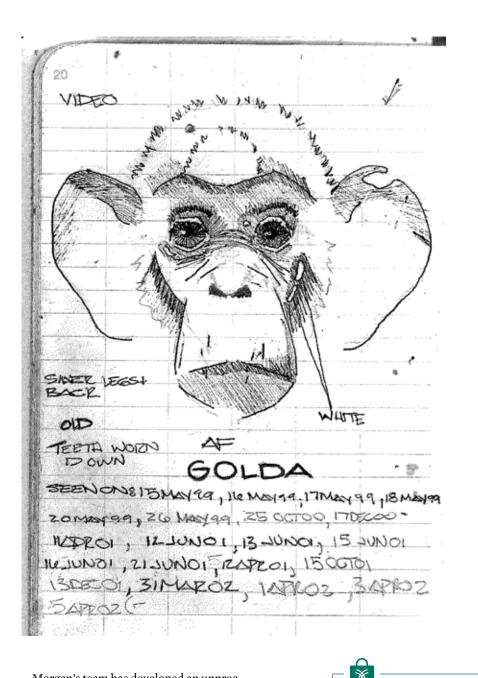
"We knew this area was special because people haven't been in it for hundreds of years we think," says Morgan. "And the chimps responded that way. They're very curious about humans."

Logging has become big business in the neighboring forests of Goualougo Triangle, and one of the goals of GTAP is to protect wildlife and also study the impact of the industry on chimpanzees and gorillas within the forest. Over time,





Opposite page, top: Chimpanzees use sticks to probe for insects in a faux termite mound at Chimp Haven; bottom: Lincoln Park Zoo resident chimpanzee Zach. <i>Above, top: Lincoln Park Zoo Research Fellow David Morgan installs a motiontriggered trail camera used to help monitor wild apes in northern Congo; **bottom:** *Morgan's team studies forests before, during, and after logging with cooperation from the local logging company.*



Left: Sketches and notes on physical traits and sightings of chimpanzees and gorillas in the Goualougo Triangle fill Dave Morgan's field research journals. Right: Habitat and foraging locations of the area's chimpanzees and western lowland gorillas are recorded by GTAP team members—who include Congo's indigenous Baka—and shared with a logging company to reduce the impact of timber extraction on wild ape populations.

before, during, and after logging, and authored a study which was published in November in Biological Conservation. The study found that logging has a greater impact on chimpanzees, which rely more on closed canopy forests formed by their preferred food resources, while gorillas, which are "generalists," can find the bulk of their diet on the forest floor. Chimpanzees are also territorial, so they can't just move into another part of the forests with the ease of gorillas. With these new insights, Morgan and his colleagues continue to improve recommendations that can help minimize the impact of logging on apes in the future.

"They're going to exploit these forests," he says. "So we're trying to come up with the best way to do that which will have the least impact on the apes."

Other surprises have come about closer to home. Home base camp, that

Morgan's team has developed an unprecedented data-sharing relationship with Olam, a logging company that adheres to Forest Stewardship Council (FSC) certification practices. Representatives from Olam have shared timber inventory and road development plans, and GTAP has shared hot spots where chimpanzees and gorillas live, along with botanical information on food resources important to their survival.

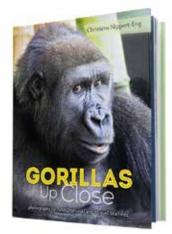
"To understand how these forests change with logging takes quite a lot of effort," says Morgan. "It requires a longterm monitoring of the forest itself and then the recovery after logging and how the animals respond to it."

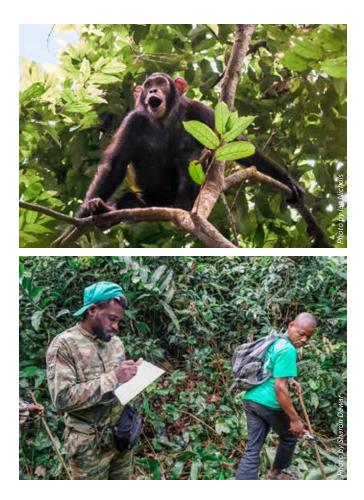
GTAP researchers collected data

Gorillas Up Close

Filled with facts and photos, *Gorillas Up Close* takes us into the daily lives of the western lowland gorilla family troop at Lincoln Park Zoo's Regenstein Center for African Apes. Readers will marvel at the similarities gorillas share with humans while finding out how scientific inquiry supports expert care for gorillas at the zoo.

Get your copy today at Wild Things gift shop or online at *lpzoo.org/shop.* \$19.99.





is. Morgan works on a team with a number of local residents, including research assistants from the local university and indigenous people—known as the Baka—who act as trackers, porters, and cooks. They help locate the chimpanzees and gorillas while steering the team of researchers to avoid other animals, like elephants, which can be dangerous.

"They're the most important aspect of the work, because they help us find the animals, track them, and share observations about them," says Morgan.

Morgan says that working with the Baka, he's seen, firsthand, a change of heart. He says this group of people generally doesn't embrace—or protect—wildlife, which is more often valued as a source of food. "Conservation isn't taught at the university," says Morgan. "Wildlife is looked at as something to exploit."

He's watched attitudes shift in trackers on his team as they've become more familiar with the animals they observe and the goals of the long-term project. They've developed a connection, he says, with chimps like Theresa—named for Mother Theresa—a dominant female who has given birth to seven babies; and Fiona, a female who has never had babies herself, but follows Theresa around and helps care for her offspring.

Morgan says the project can feel like watching a soap opera every day. He believes this work has taught the locals they can find stable employment conserving wildlife instead of exploiting it. And that, he says, is a lesson he hopes lasts long after his work with GTAP is done.

Take Action With Us

BY MEGAN ROSS, PH.D. EXECUTIVE VICE PRESIDENT



Living in a highly urbanized world, it's easy to have the perception that virtually everything is made from industrial glass, steel, and plastic. While these modern manufacturing materials play a large role in our lives,

the truth is that even today, so much of our everyday life is made of something much more natural: trees. In fact, the United States has long been the largest importer of wood products in the world.

Humans are not the only ones reliant on timber. Thousands of animal species rely on trees in their natural habitat for survival and, as such, caring for the forests comes hand-inhand with caring for animals.

In the remote forests of the Republic of Congo, the forests look a lot different than in the U.S. and are home to a range of very special animals. It's one of the only places in the world where you can see chimpanzees and gorillas hanging out in the same forest canopy.

Dave Morgan, Ph.D., a research scientist with Lincoln Park Zoo's Lester E. Fisher Center for the Study and Conservation of Apes, has spent years studying how these apes use their arboreal habitat, as well as how logging in the region can affect these endangered species. His studies have demonstrated the long-term impacts of logging, and how to make it more "ape-friendly". Those companies that are carefully considering the conservation value of forests are part of the Forest Stewardship Council (FSC), and products made from responsibly harvested wood bear their logo.

Whether you are buying printer paper or picking out construction materials, look for products with the FSC logo. You can also use recycled paper products and reclaimed or



repurposed wood to reduce the demand for new products. It's an empowering feeling to know that even here at home we can make responsible consumer choices supporting practices that consider the value of wildlife.

Playing for Keeps BY CRAIG KELLER

hoto by Julia Fullei

The zoo is nurturing lifelong conservationists by connecting young children with nature



Primates to Pine Cones

The ape house is hopping. At the gorilla family exhibit an individual is manipulating bark-rimmed discs sectioned from tree branches. Nearby, at the chimpanzee troop's habitat, sticks are being whacked on hollow wood boxes. Farther on, four individuals are scooping and sifting multicolored beans that fill a small bin. Hoots and hollers reverberate off the walls and ceiling.

"It looks like chaos," says Emily Van Laan, calmly surveying the scene inside Regenstein Center for African Apes, "but this sort of self-directed play is developmentally appropriate learning for toddlers."

Human toddlers, she means. Van Laan (above, left), the Early Childhood and Family Programs Coordinator in Lincoln Park Zoo's Learning Department, is supervising a Thursday morning session of LEAP (Learn, Explore And Play), a nine-week, paid program for little ones ages 2–3 that takes place in cordoned-off animal exhibit spaces in spring, fall, and winter.

Grounded in nature play—a surging educational movement that kindles connections to the natural world through selfguided exploration—LEAP features activity stations that kids and their adult caregivers delve into at their own discretion and pace. From pine cones to rhino-shaped clay cutters to hand drums, the objects clustered at these nature play stations help develop imaginations, motor skills, confidence in choices, and

Take Action!

→ Want to help us facilitate nature play at the zoo? Apply to become a Play Assistant volunteer at *lpzoo.org/volunteer*! social interactions.

"It's nice the kids get to direct what they want," says Jennifer Thomas, who brings her daughter, Cate, to LEAP. "I think play-based activities are better than structure at their young age."

Today, these activities are arrayed next to glass-walled

habitats where western lowland gorillas and chimpanzees interact in their own social groups. That close proximity has led to remarkable moments between the zoo's three, female gorilla toddlers and their human counterparts as they tumble about and eye each other.

"At one session the kids were making a fort with sheets, and one of the little gorillas tried to get their attention by waving around her own sheet," says another mom, Kate LaMantia, joining the fun with her son, Peter. "It was an amazing interactive experience."

Nature play can be a key first step along a lifelong path of concern for wildlife and the environment.

"It's so big picture," says Van Laan, "but the goal is that these kids—by spending time in nature, especially with adult mentors—will become conservation-minded adults who take actions that benefit the environment and animals."

The growth and success of LEAP, launched as a four-week program in 2012, has provided a template for the expansion of free nature-play programming for early learners at the zoo and beyond its borders.

Branching Out

LEAP's first offshoot was Wild Sapling Play Forest (above, right), a leafy playground in Pritzker Family Children's Zoo that sprouted in spring 2017. It's also used by zoo educators during occasional LEAP sessions, but is otherwise open and free every day. Starting this spring, volunteer Play Assistants will provide guidance to public visitors on select days.

"This is about spreading nature play to everyone who comes to the zoo," says Early Childhood and Family Programs Manager Becky Lyons. "LEAP is a wonderful, intimate experience, but it's inherently limited to a smaller group, and cost and convenience may also be factors for some people. So we're excited to make this free and accessible for everybody all year long."

Family Nature Days

Join Lincoln Park Zoo and the Chicago Park District at these free early-childhood programs across the city. Learn more at *lpzoo.org/ family-nature-days*.

Wednesday, April 11, 5-7 p.m. Bosley Park, 3044 N. Bonfield St.

Saturday, May 19, 4–6 p.m. Cornell Square Park, 1809 W. 50th St.

Thursday, June 14, 4–8 p.m. River Park, 5100 N. Francisco Ave.

Friday, June 29, 9–11 a.m. International Mud Day! Wild Sapling Play Forest, Pritzker Family Children's Zoo Lincoln Park Zoo

Friday, July 20, 5-7 p.m. Smith Park, 2526 W. Grand Ave.

Wednesday, August 22, 5-7 p.m. Washington Park, 5531 S. King Dr.

Saturday, September 8, time TBD West Pullman Park, 401 W. 123rd St.

Saturday, October 13, 10 a.m.-noon Shabbona Park, 6935 W. Addison St.

Saturday, November 3, 10 a.m.-noon Calumet Park, 9801 S. Ave. G **Opposite page:** *Play Assistant volunteer Judy Kenning invites kids to scoop objects in a sensory bin during Play Days at the Farm. The free nature-play program happens at the Farm-in-the-Zoo.*

Tucked into a secluded corner of the children's zoo next to the black bear exhibit, Wild Sapling Play Forest blends into its woodsy surroundings with an organic design that includes fixed and movable features.

Kids can climb a log tower, burrow through an above-ground tunnel of sculpted metal vines, and help each other navigate a zigzagging balance beam interspersed with tree-stump platforms. A large dig pit is filled not with sand but finely grained dirt, as befits a forested hideaway. Kids can make mud pies or, during facilitated play sessions, grab buckets and other objects from one of the wooden bins on the pit's periphery to wield as tools. Even loose sticks and exposed tree roots—which provide safe challenges during exploratory rambles—were considered as part of the design.

"We wanted to emphasize rugged, natural elements," says Van Laan. "Clark Street is a block away, but kids feel like they're playing in a forest."

Lyons' and Van Laan's team worked with the zoo's creative Facilities and Horticulture departments to bring their design sketches to life. Providing accessibility was a key consideration. So while there's a narrow "rock walk" that may hinder a visually impaired child or wheelchair user, the fencing next to it has sensory panels that provide that experience to all. The textured, map-like panels—embossed with leafy sprigs, pebbles, sand, pine cones, and shells—were inspired by the wooded topography of the black bear exhibit.

"This nature-play space helps develop fine motor skills, social cooperation, and imagination," says Lyons. "Its possibilities are limitless."

Across the Zoo

Nature play is woven into other programming at the zoo as well. Parent & Toddler Yoga classes at Nature Boardwalk, held May through September, include time for a sensory bin, stories, music making, and a group song. Zoo educators provide activities at family-oriented, ticketed events and zoo members-only events, such as Members-Only Morning (taking place May 20 this year).

It has also cropped up at the Farm-in-the-Zoo. Play Days at the Farm, a free program that debuted in late 2017, takes place from 10 a.m. to noon on Tuesdays and Saturdays, with Thursdays a likely addition. Facilitated by Play Assistant



volunteers, it combines activity aspects of LEAP with play and agricultural amenities already in place.

During winter and inclement weather, the program takes place inside the Main Barn, where a kid-sized chicken coop prompts arm flapping and cock-a-doodle-doos and a sensory wall lets kids slide and spin assorted wood pieces. In warmer weather, play stations are set up around the barnyard and its Edible Garden.

Nature Play on the Road

Can't make it to the zoo? Not a problem. Lincoln Park Zoo and the Chicago Park District (CPD) have teamed up to host Family Nature Days at neighborhood parks across the city from spring to fall (see schedule on opposite page).

"This is the perfect next-step partnership for us," says Lyons. "CPD is also passionate about nature play and has been building nature-play spaces around the city. They want us to help activate the programming."

CPD-selected communities expressed a desire for more opportunities for outdoor programming. Working with CPD facilitators, zoo educators will provide activities for families with toddlers to preteen kids. In addition to LEAP-type stations, there will also be, for example, binoculars for bird watching, plant-identification games, and nature hikes.

"A lot of kids may know about gorillas but not cardinals," says Van Laan. "We want them to notice and care about animals they share space with every day in their communities."

Initiating such direct connections to nature has also become more imperative as children spend more time indoors and with their eyes glued to digital screens.

"There are lots of studies documenting the detrimental effects of not spending time in nature," says Lyons. "Playing "Playing in nature is vital to physical, social, and emotional health."

in nature is vital to physical, social, and emotional health." Sometimes that starts by handing a child a pine cone.

To-Zoo List

BY JILLIAN BRAUN

There's always something to do at the zoo! From kid-friendly to adults-only events and happenings it's time to wake up and smell the roses—or the tulips—around zoo grounds. Head to *lpzoo.org/calendar* to check out the full list and register for events.

> Being a Member Has Its Benefits!

Lincoln Park Zoo members receive reduced ticket rates for most events.

ad das Safari Stampede

Malott Family Penguin Encounter

Fri.–Sun. April 1–Oct. 31; daily May 28– Sept. 3. 10 a.m. & 3 p.m. (only 3 p.m. Mon.-Thurs.), ages 6+, \$60 (\$50 for members)

Waddle you waiting for? Experience the zoo from the inside with penguins right at your feet! Get a personal introduction to some of the African penguins at Robert and Mayari Pritzker Penguin Cove, and learn about the daily life of this species at the zoo and on the southern African coast. Waterproof feathers not required, but gear will be provided.

Fitness at the Zoo

Various dates and times, May 2-Sept. 20, all ages (class-dependent), \$20/class with multi-class passes available (10% off for members)

From downward dog to bear crawls, experience a wild, new take on your daily fitness schedule. Guests can choose from more than 100 professionally taught classes including Power Vinyasa Yoga, Happy Bodies Yoga, Parent and Toddler Yoga, Zumba, meditation and more.

Zoo-ologie: Walk on the Wild Side

Sat., May 12, 8 p.m.-midnight, ages 21+, tickets begin at \$110

The Auxiliary Board of Lincoln Park Zoo hosts Zoo-ologie: Walk On The Wild Side. Enjoy an unforgettable evening on the zoo's beautiful grounds with an auction, dining, and dancing with upbeat music! Proceeds from Zoo-ologie go toward the Auxiliary Board's efforts in supporting the zoo's The Pride of Chicago capital campaign. Now that's something to roar about.

Food Truck Social

Sat., May 19, 6:30–9:30 p.m., all ages, \$10 (20% off for members)

Where can you enjoy artisanal twists on grilled cheese, pierogis, tacos and more in one place? At the zoo's Food Truck Social! Experience Chicago's finest meals on wheels after hours at the zoo. In addition to dozens of food trucks (and doughnuts!), there will be fun activities, live music, and drinks available for purchase.

Members-Only Morning

Sun., May 20, 8–10 a.m., all ages, FREE! (members invite only)

Celebrate Lincoln Park Zoo's 150th anniversary at a special, sesquicentennial-themed Members-Only Morning. The zoo will open early just for members, with a full program of family-friendly activities, games, and animal viewings across the south area of zoo grounds. Get an exclusive look at how keepers and animals—including chimpanzees, flamingos, and zebras—start their day! Learn more at *lpzoo.org/ special-member-activities*.

Music at the Patio

Wed. & Thurs., May 30–Sept. 17, 5:30–7:30 p.m., all ages, FREE!

Visit one of the greatest hidden gems in the city: The Patio at Café Brauer. Wednesdays and Thursdays get better with the best in local music and food in the landmark setting. Take in spectacular views of the skyline and Nature Boardwalk while enjoying food and drink specials paired with live music from different local musicians each week! Did you know The Patio is dog-friendly? Enjoy your fare with Fido!

Run for the Zoo

Sun., June 3, 6:30–11 a.m., all ages, registration begins at \$25 (members receive \$5 off 5/10K)

Run for the Zoo is a highlight of the Chicago racing calendar, featuring a 10K run, 5K run/walk and a Safari Stampede mini obstacle course for kids ages 6 and younger. The courses have been updated in celebration of the race's 40th anniversary and wind through zoo grounds, allowing participants to fly past birds, powerwalk past primates, and celebrate with a post-race party on the zoo's Main Mall.

SuperZooPicnic

Fri., June 8, 5–8:30 p.m., all ages, \$10 (members invite only, ages 5 and under are free)

Join us for an exclusive, after-hours celebration where Lincoln Park Zoo members and their guests get the entire zoo to themselves for an evening of fun. A DJ? You bet! Free rides on the AT&T Endangered Species Carousel and Lionel Train Adventure? Of course! Pie eating contests? Wouldn't be a SuperZoo without one! Members: check your mailboxes in April for your invitation. Hope to see you there.

Craft Brews at the Zoo

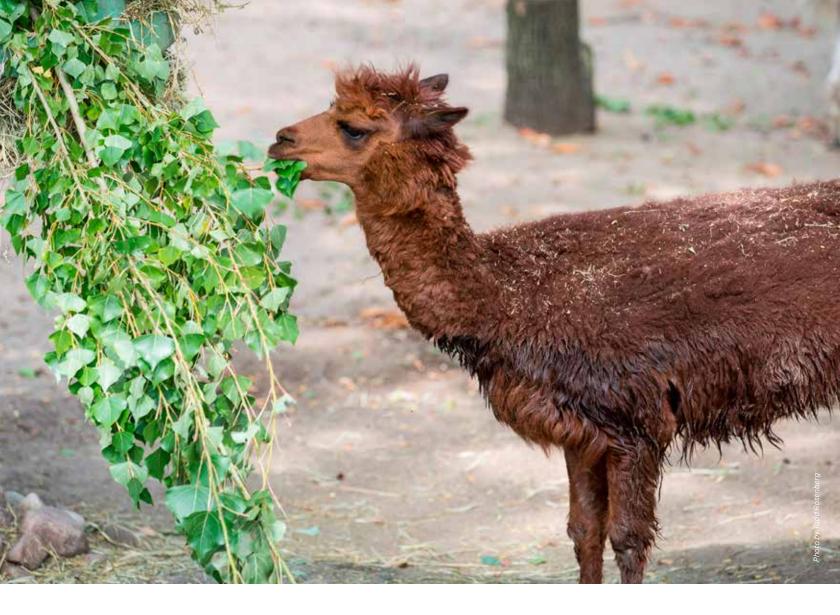
Fri. & Sat., June 15–16, 6–10:30 p.m., ages 21+, tickets begin at \$49 (10% off for members)

Suds is the word. Savor a selection of 120+ specialty brews from 35+ local and regional breweries at this one-of-a-kind craft beer fest. Beer-tasting stations will be set up throughout the zoo's beautiful gardens during this after-hours experience just for adults. Plus, enjoy food for purchase, DJ entertainment, lawn games, and unique, after-dark viewing of the zoo's animals. Cheers!

Adults Night Out

Thurs., June 21, Oct. 18, Nov. 29, 6:30–10 p.m., ages 18+, \$15 (20% off for members)

Grownups at Adults Night Out roam the zoo, forage for beer and wine, and receive cognitive enrichment at informal chats by zoo scientists, educators, keepers, and horticulturists. Special animal enrichment viewings, carousel rides, and DJ tunes complete the scene. That buzz you're getting? Wildlife knowledge. Feel the learn.



Chewing the Scenery

BY BETH BOTTS

From diets to habitats, plants grown on grounds enrich animal lives and make the zoo's gardens more earth-friendly Springtime brings human locavores to the farmers market to browse for fresh greens. Meanwhile, Lincoln Park Zoo's chameleons, chimpanzees, and alpacas are eating right from the back yard.

Chimpanzees and gorillas enjoy mulberry leaves, willow branches, and grapevines. Tortoises go nuts for homegrown hibiscus flowers. And the alpacas and camels? "They'll eat pretty much anything," says Joseph Rothleutner, Director of Horticulture.

Providing fresh leaves and other plant parts—what zookeepers call "browse" has been a priority for Rothleutner and Karina Carbo, who manages the zoo's Nutrition Center, since they arrived at the zoo in 2016. Carbo hopes to supplement the grain-based food most zoo animals eat with at least 1 or 2 percent of fresh greenery. "It has higher fiber content," she says. "It takes longer to eat. It's a more wild type of diet."

In the past, keepers fed animals browse when they got the chance—for example, when shrubs were being pruned. Now, improving the natural relationship between animals and plants is part of the garden plan. Small browse gardens are being expanded. Rothleutner is working with Carbo; Allison Kao, Manager of Enrichment and Behavioral Husbandry; and the zookeeping staff to grow appealing plants that improve the animals' diet and help enrich their lives.

Plants for Habitat

The gardens already supply habitat. In the Helen Brach Primate House, black and white colobus monkeys scamper up branches from trees on the grounds. In the McCormick Bird House, nests are built from local twigs and wisps of greenery. Peccaries—wild pigs—like to root around stumps. "Stumps have lots of nooks and crannies," Rothleutner says. "It gives the animals more complexity to explore."

New plants to smell, touch, and taste are a stimulus for the animals. Even Siku the polar bear enjoys leafy branches in his enclosure, although "he likes playing with them more than eating them," Carbo says.

Keepers often spread browse around an enclosure or tuck it in out-of-the-way places so the animals have the mental challenge of finding it. In the Regenstein Center for African Apes, each new stick is a new tool for chimpanzees as they fish for hidden food.

"When you see the animals engaging in natural behaviors and eating, it's very satisfying," Rothleutner says. He recalls the thrill of watching Sassy, a beaver in the Pritzker Family Children's Zoo, settling in to chew through a log.

Using wood and leaves for the animals also helps avoid the need to discard waste from the gardens, an important tenet of sustainable gardening. "Whatever we can't use, we grind up for mulch," he says. "We want to recycle and reuse everything."

Finding a Way

There are challenges to growing plants for the sake of animals. One is figuring out which animals like to eat what, Rothleutner says. Keepers are now keeping track of which plants animals seem to prefer, so he can try to figure out how to grow or **Opposite page:** An alpaca at the Camel & Zebra Area forages on leafy greens grown at the zoo. **Below, top:** Keeper Michael Richlak distributes browse for the Bactrian camel herd; **bottom:** A stick doubles as a toothpick and insect-foraging tool for a chimpanzee at Regenstein Center for African Apes.







scrounge more of them.

He can't plant whatever he likes. All browse plants must be approved by Kathryn Gamble, D.V.M., the zoo's Dr. Lester E. Fisher Director of Veterinary Medicine, to make sure they are safe for consumption.

She also reviews ornamental plants for the gardens and the exhibits to guard against the chance that a harmful plant might find its way into an animal's habitat. For example, any plant in the allium family—such as onions, garlic, or the huge purple globe alliums that bloom just after the tulips—are potentially toxic for some carnivores. Plants to be grown in or near an exhibit—such as trees and shrubs a 19-foot-tall Baringo giraffe is able to reach from Regenstein African Journey's Kovler African Savanna—are carefully screened.

Even if a plant grown for browse is safe, it may not be appetizing. Rhinos did not evolve to eat plants that grow well in the Chicago climate, Rothleutner points out. Yet evolution is not necessarily a reliable guide. Animals from around the world seem to enjoy the tender little leaves of honey-locust, although it's a Midwestern native tree.

Everything Rothleutner plants at the zoo must be able to survive Chicago's erratic springtimes, hot, humid summers, and cold winters. Those winters shut down the fresh browse supply. Instead, animals get frozen grape leaves and other plants, kept in a walk-in freezer. "The animals don't love it as well as fresh browse, but they will eat it," Carbo says. A crew of volunteers helps greatly with the time-consuming work of packing browse for freezing.

Growing for browse changes the way the horticulturists care for plants. "Constantly removing plant material depletes the soil," Rothleutner says, because the plant has to absorb more nutrients to regrow the leaves and branches that were harvested. Like farmers, the horticulturists must replenish the soil's fertility. They apply a mulch of composted leaves, collected from the zoo's trees. The mulch layer will be slowly broken down by soil organisms to resupply nutrients. Meanwhile, it also suppresses weeds that would compete with the browse plants.

A Small Urban Garden

One big limitation for browse growing is Lincoln Park Zoo's small size. Some zoos have entire farm fields, but here, browse gardens are small patches among the formal garden beds. Several kinds of hardy bamboo, beloved of red pandas and gorillas, now grow near the carousel and behind the Regenstein Birds of Prey exhibit.

To supplement what the horticulturists can grow on site, they harvest willow branches from the Diversey Driving Range just north of the zoo. They also are experimenting with pollarding and coppicing—traditional pruning techniques used to push trees to increase production of new, tender twigs and branches.

Growing for the animals shapes the plans for the zoo's entire grounds. "In the gardens, whenever we can add a plant, we try to make it something we can harvest for browse," Rothleutner says.

From the stately leaf-eating walking



Opposite page: Zoo horticulturist David Lutz prunes plants in a browse garden; the Volunteer Enrichment Group's Barb Jackson and Jenna Lieblich process browse for frozen storage, which allows apes such as herbivorous western lowland gorillas to receive it year-round.

Below: Red-footed tortoises forage on fragrant hibiscus flowers at Regenstein Small Mammal-Reptile House.

stick insects in the Children's Zoo to the 12-foot-long black rhinos, animals all over the zoo benefit from its plants. Yet the zoo gardens must be lovely for people too—which makes it so handy that tortoises go nuts for beautiful hibiscus blooms.



An Inn for Insects

BY CRAIG KELLER | ILLUSTRATIONS BY ASHLEY BEDORE

Lincoln Park Zoo cares for the smallest of creatures too. Local insects that pollinate and defend the zoo's gardens can book a room at the "insect hotel"—if there's a vacancy.

The unusual structure, located near Walter Family Arctic Tundra, was planned and designed by teens in the zoo's Conservation Ambassadors Board program and built by Rick Cortez, Special Projects Manager in the zoo's Facilities Department (see "Zoo Family Album," page 22). Its divided compartments are filled with logs, bricks, sticks, cardboard tubes, and rocks. Various holes (some drilled) and spaces provide nests for insects. These "hotel rooms" are available to insects year-round, providing useful shelters during cold months for insects that overwinter, hibernate, or deposit gestating larvae in them.

Mason bees use mud in a masonry-like manner to construct their nests. Females fill the cavities in logs and rocks with pollen and nectar, lay their eggs on top, and separate nests with mud partitions to create a complex nursery.

"People usually think about honey bees, but mason bees are solitary," says Jamie Herget, Coordinator of Learning Exploration in the zoo's Learning Department. "So this is a nice way to display and bring attention to an important native pollinator."

The hotel's other pollinating insect guests include green lacewings. Its garden defenders include predatory mud dauber wasps and aphid-eating ladybug beetles.

During winter, mud and clay cappings on holes concealed the insects' identities. "We'll know who's in there as they emerge this spring," says Herget.

"Insect hotels are easy to implement at home, and provide habitat for pollinators in your own backyard," she adds. "They can be simple or complex. A recycled soup can with paper straws works just as well. If you build it, they will come."



→ Get DIY instructions to make your own insect hotel at *lpzoo.org/magazine*!



BY CRAIG KELLER



Photo by Chris Bijalba

Rick Cortez

Special Projects Manager, Facilities Department

What's your role at the zoo, Rick?

Our team handles maintenance, remodeling, and installation work across the zoo, from animal exhibits to public spaces. We also operate a small assembly shop where we do carpentry, welding, and metal fabrication. All our guys are tinkerers. I don't think there's anything we can't do in some form or fashion.

How did you get into this line of work?

I started at the Field Museum, assisting a taxidermist with dioramas. I layered backgrounds and painted murals to make environments—deserts, rainforests, riverine systems. I also worked in exhibit services at Brookfield Zoo for 15 years and have done exhibit contract work for zoos across the country. Lots of immersive design that tells the story of a habitat.

The Wild Sapling Play Forest (see page 13) your team built at the children's zoo is immersive.

We salvaged lumber from other projects for that. We're big on recycling and repurposing materials. The playground's organic sensory panels are similar to other projects I've done. I once made a mural—like a textured scratch board in the shape of a cypress tree—so blind kids could have a picture in their minds about its branches, moss, even a perching bird.

You also collaborated with the Learning Department on the zoo's insect hotel (see page 21).

I'm also a trained sculptor and an artist-in-residence for a school district in La Grange. Using those skills to help teach new viewpoints is fulfulling. This is a living-cycle piece of functional art that works.

Linda Swanson and John Seely

Zoo Members

What motivated you to support the zoo?

Linda: I've always loved animals. We both worked as scientists at Abbott Laboratories. I have a doctorate degree in reproductive endocrinology with a focus on animal behavior.

Have you volunteered at the zoo's endocrinology lab?

Linda: No, instead I assisted with scientific literature research on animals for the Japanese macaque, African penguin, and polar bear exhibits when those were being planned. It was rewarding to see the exhibits come to fruition, knowing my work contributed to their designs.

Did that broaden your view of the zoo's conservation efforts?

Linda: I've always thought of the zoo as a conservation leader. I've since learned how population biologists here guide breeding recommendations for genetic diversity in species across zoos—very impressive.

You've also encountered wildlife on trips around the world. Any highlights?

John: Hundreds of thousands of penguins in different colonies in Antarctica. Hard to miss them!

We hear you also met African penguins in South Africa as well as here at the zoo.

John: We enjoyed the Penguin Encounter experience inside the new exhibit and met the intrepid Phil, who waddled right up to our group.

Have you passed along your passion for wildlife to younger family members?

Linda: My granddaughter told me she wanted to be a zoo keeper. I said that's fine, honey. Now she wants to be president of the zoo.



Crossing Guards for Cats

The Ngorongoro Crater in east Africa's Greater Serengeti Ecosystem is home to nearly 80 African lions. The isolated population risks inbreeding unless lions can freely move between the Crater and nearby Serengeti National Park.

Growing communities of Maasai pastoralists reside in a narrow area between the two. When lions, lacking natural prey, turn to livestock, Maasai warriors often hunt them in retaliation—conflict that threatens to cut off this important wildlife corridor. Lincoln Park Zoo's Serengeti Research Scientist, Dennis Rentsch, Ph.D. (right), is discussing strategies to conserve these corridors with Ingela Jansson, director of Kope Lion, a conservation initiative. Jansson works with Maasai scouts called Ilchokuti to monitor and protect lions. A proposed Conservation Incentive Payment program may build upon the collaboration, providing tangible benefits for people living with lions—and safeguarding a crucial link between lion populations. ■

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Support the zoo's conservation efforts by purchasing the same hat Dennis is wearing! Available at Ipzoo.org/ shop and Wild Things gift shop.



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By printing this issue on 100% postconsumer, recycled paper, we are saving:



40,474 gallons of water

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4,141 pounds of waste

13,605 pounds of CO2

Zoo Calendar

March

Friday, 23 Teen summer program application deadline

Monday, 26-Friday, 30 Spring Break Camp

Saturday, 31 Easter Egg-stravaganza

April

Tuesday, 3 (members only) Tuesday, 10 (general public) Campout at the Zoo registration opens

Friday, 6 Malott Family Penguin Encounters resume

May

Wednesday, 2-September 30 Fitness at the Zoo

Saturday, 5 Cinco de Mayo Piñata Party

Monday, 7 Member pre-sale for Summer Wine Fest

Friday, 11 Young Researchers Collaborative Science Celebration

Saturday, 12 Zoo-ologie: Walk on the Wild Side *Hosted by Lincoln Park Zoo Auxiliary Board*

Sunday, 13 Mother's Day Brunch Wednesday, 16 Volunteer Information Session

Friday, 18 Partners in Fieldwork application deadline

Saturday, 19 Food Truck Social

Sunday, 20 Members-Only Morning: Sesquicentennial Edition

Lincoln Park Zoo 150th anniversary kickoff and exhibition opening

Wednesday, 30-September 27 Music at the Patio

June

Go to *lpzoo.org/calendar* for details on upc<u>oming events.</u>

Sunday, 3 Run for the Zoo

Friday, 8 SuperZooPicnic

Monday, 11-August 24 Summer Camps

Saturdays, 9 & 23 Campout at the Zoo

Friday, 15 & Saturday, 16 Craft Brews at the Zoo

Sunday, 17 Father's Day Brunch

Thursday, 21 Adults Night Out