



WINTER 2017

LINCOLN PARK ZOO®

FOR WILDLIFE. FOR ALL.



**Holiday Fun
at the Zoo**

**Caring for Animals
in Winter**

**A Zoo App Taps
Its Potential**

A MAGAZINE FOR MEMBERS OF LINCOLN PARK ZOO

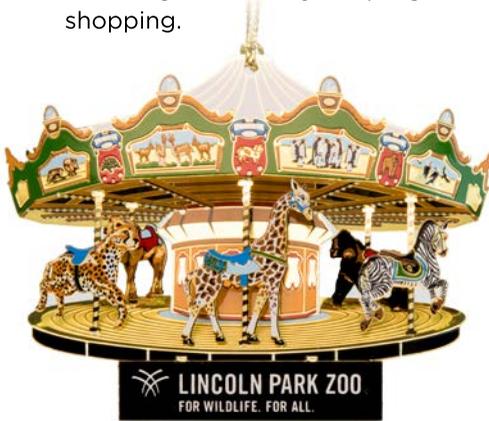
WINTER 2017

VOLUME 16, NUMBER 3 •
FOR MEMBERS OF LINCOLN PARK ZOO

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The zoo offers plentiful ways to celebrate the holiday season, from enchanting illuminations to special event nights to wildly unique gift shopping.



Brass 3D Carousel Ornament \$26.
See page 11 for purchasing details.

Chill Factors / 12

What goes into caring for the zoo's animals during a Chicago winter? The zoo's General Curator shares his team's tactics for different species when the mercury drops.

Our Impact Depends on You

Who funds Lincoln Park Zoo? You do! Zoo members, donors and visitors help cover around 85% 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.



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Technology created at Lincoln Park Zoo is fostering a deeper understanding of animal welfare and health here and across the globe.

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A riveting sculpture project welds art and science to forge community connections to wildlife.

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Cover: Female lioness Zalika rests atop a rock at the Kovler Lion House. Rocks in the lion pride's outdoor exhibit contain heating elements that can be turned on during cold weather. Learn more about wintertime care for the zoo's animals on page 12. Photo by Chris Bijalba.

LINCOLN PARK ZOO MAGAZINE

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Visit lpzoo.org/magazine for special web-only features—including photos, video and blog posts—inspired by the stories in this issue.



Setting a Shining Example

We're well into fall, and looking forward to a brightly lit holiday season at Lincoln Park Zoo. In this issue, we'll share how best to experience the holidays at the zoo, explore the unique behaviors of animals in winter, and tell you all about ZooMonitor, an app we developed to inform animal care decisions by tracking animal behavior.

Lincoln Park Zoo recently received renewed accreditation from the Association of Zoos and Aquariums. This means we adhere to the highest standards of animal care and management, operational excellence, and global conservation work. We take great pride in our work and appreciate your support, which allows us to continue doing it.

Many folks are surprised to learn we are not fully funded by the Chicago Park District. Around 85 percent of our operating and capital costs are covered by contributions from members and guests. The zoo's global conservation work can be another eye-opener. Our Population Management Center facilitates Species Survival Plans® to help ensure critically endangered species in our care do not become extinct. We partner with the Serengeti National Park to preserve ecosystems across Tanzania, and in Congo our researchers are forming unique partnerships to mitigate the impact of logging on local ape populations.

So, this season, if you're looking to support an organization with a strong tie to its community and a global reach in its impact, we hope you'll consider Lincoln Park Zoo. Here are a few ways you can help:

- ➔ **Gift a membership:** Invite friends or family to enjoy benefits like free parking, early registration for summer kids' camps, members-only events, and retail discounts.
- ➔ **A.D.O.P.T.:** It stands for Animals Depend On People Too. Make a contribution to support care and conservation of your favorite species. And look around the zoo for A.D.O.P.T. signs in front of many animal exhibits. Select A.D.O.P.T. packages also include a highly huggable plush as a bonus.
- ➔ **Attend an event or buy a gift:** Your ticket or retail purchase helps fund our daily operations, learning programs, and more.
- ➔ **Give a gift to a zoo animal:** Our holiday Wish List lets you purchase special enrichment for Lincoln Park Zoo residents, from bamboo for red pandas to a bubble machine for penguins. See the full list at lpzoo.org/wish-list.
- ➔ **Donate to the Annual Fund:** A contribution to the zoo's Annual Fund supports the zoo's greatest needs—from food for flamingos to veterinary care for camels and more. Make an immediate impact with a gift to the Annual Fund.

Thank you for your support, and happy holidays from all of us at Lincoln Park Zoo. ■

KEVIN J. BELL
PRESIDENT AND CEO

BY JILLIAN BRAUN AND
EMILY ALTIMARI



Photo by Chris Bijalba



Photo by Todd Rosenberg



Photo by Chris Bijalba

If the Shrew Fits, Weigh It

Scientists at Lincoln Park Zoo’s Urban Wildlife Institute (UWI) have collected millions of urban wildlife photos, conducted bird counts, and monitored bat populations across Chicago. The metro area’s smallest mammals, however, had evaded the zoo’s research—until now.

UWI and the zoo’s Davee Center for Endocrinology and Epidemiology recently teamed up to conduct small-mammal trapping over 27 days at four different sites: Nature Boardwalk, Burnham Wildlife Corridor, Palmisano Park, and Northerly Island (far right).

Researchers used small, baited boxes, which safely close upon the animal entering, to trap voles (prairie and meadow, right), mice (white-footed, deer, and house), shrews (least and northern

short-tailed), eastern chipmunks, and a thirteen-lined ground squirrel.

They document the species, weigh it, attach ear tags for tracking purposes, and ensure the animals are healthy and tick-free. Hair and fecal samples are also collected. Hormones extracted from the samples are used to measure long- and short-term stress. The zoo will use all this information to better understand our urban ecosystem and the impacts urbanization has on small mammals’ stress levels.



Photo by Jillian Braun

Chicks, Please

The zoo is now home to three lucky ducks. The first Baer’s pochard chicks ever to hatch here arrived July 29 at the McCormick Bird House and were hand-reared by keepers behind the scenes. The ducklings (top, left), who will gradually acquire their parents’ dark plumage, represent a critically endangered species native to eastern Asia, where habitat loss and hunting have impacted its survival.

In other news from the nest, the zoo also welcomed several Chilean flamingo chicks (top, right), in early July. Keep an eye out for them at the Waterfowl Lagoon as the chicks have been gradually introduced to the adult flock while growing in size and strength.

When it comes to exciting avian announcements at the zoo, a male Guam kingfisher chick (left), hatched May 29, also fits the bill. This cavity-nesting bird is extinct in the wild due to predation by the brown tree snake, an invasive species on its native island of Guam. Roughly 100 individuals remain in accredited zoos. Cooperative breeding is increasing the population, and may one day make possible a reintroduction of the species at a protected wild-release site.

Additional hatches this summer included a Nicobar pigeon, snowy owls, golden-breasted starlings, swan geese and one white-headed buffalo weaver.



Photo by Jillian Braun

Rendering by Ross Barney Architects



Stripe Hype

This past summer, two male plains zebras were introduced to female giraffe Etana and now reside at the Regenstein African Journey's Kovler African Savanna. This beautiful landscape, evoking Africa's natural ecosystems, is designed to exhibit multiple species. It was recently renovated as part of The Pride of Chicago capital campaign.



Photo by Veronika Hernandez

The zebras, both 3 years old, were born at Lion Country Safari in West Palm Beach, Florida, and transferred to Lincoln Park Zoo earlier this year. The move was made through the Plains Zebra Species Survival Plan (SSP), which collaboratively manages the zoo-based popula-

tion, and recommended by the zoo's Population Management Center (PMC). The PMC uses genetic and demographic analyses, along with social observations from SSP Coordinators, to recommend the most suitable housing and social structure for different species.

Plains zebras, native to eastern and southern Africa, live in highly social groups. Harems are led by a stallion and alpha mare, but bachelor groups are also common in the wild.

A Welcoming New Site

The zoo prides itself on creating a welcoming environment: For Wildlife. For All. To support our mission, starting this fall the zoo will break ground on a new Visitor Center, the next piece of The Pride of Chicago capital campaign. The sleek, state-of-the-art Visitor Center will feature an atrium, streamlined guest services and rentals, restrooms, and a membership area including a dedicated member lounge.

Construction is expected to begin after the late fall demolition of the Gateway Pavilion, built in 1995. Until the Visitor Center is complete, member and guest services will be available at an Information Center inside Kovler Lion House. And once the new Visitor Center is complete, the zoo will begin work on the final phase of The Pride of Chicago campaign: renovating Kovler Lion House itself.

During this time the zoo will continue to place top priority on the care and welfare of the big cats (and red pandas!) at Kovler Lion House. Some animals will be transferred to other accredited zoos per their respective Species Survival Plans. While we know our members, visitors, volunteers, and staff will miss our big cats through this transition, these changes will ultimately modernize our services and greatly enhance animal habitats. We look forward to sharing more on the Kovler Lion House renovation in a future issue of this magazine.

In the meantime, while we build the Visitor Center, the zoo's East Gate (main gate nearest the parking lot) may be closed for some time. A temporary entrance will be installed near the East Gate, so keep an eye out for directional signage.

Learn more about the campaign at lpzoo.org/pride.



Merry & Bright

The zoo offers plentiful ways to celebrate the holiday season, from enchanting illuminations to special event nights to wildly unique gift shopping

BY CRAIG KELLER

Season's Greetings

A festive holiday zoo scene adorns Lincoln Park Zoo's official holiday greeting card. Custom imprinting available. Illustration by Petra Zeller. 10 for \$18, 25 for \$40, 50 for \$76. See page 11 for purchasing details.

MEMBERS
SAVE
10%



Photo by Julia Fuller



MEMBERS
SAVE
10%

Here We Glow Again

ZooLights Presented by ComEd and PowerShares QQQ by Invesco, the centerpiece of the zoo's holiday festivities, dazzles during select nights from November 24–January 7, with an exclusive preview on November 17 just for zoo members. Ever wonder how this vast spectacle comes together? Get enlightened by Scott Parrish, owner of Illuminight, the Highland Park-based lighting design company that puts every bulb in place.

When do you start work?

We begin installing service panels and power lines in August. By mid-September we're installing lights. But planning and inventory orders start as early as February.

How big is your crew?

We use two crews of five to six guys each. People are surprised to learn a dozen individuals accomplish all this. We also have a fleet of nine bucket trucks and rent additional lifts to get really high up.

Do you know the total number of lights?

I have not counted every bulb, and I'm not going to! We have about 30,000 sets of lights for around 150 different displays—all of which were recently updated to LED rope light.

Any new themes or features this year?

Above the main mall we're suspending a solar system of planets and a large sun—illuminated spheres close to scale. Nine planets—we brought Pluto back into the mix.

How often do you update displays?

Some of the iconic displays people love go back quite a bit. The octopus family has been here since the first ZooLights 23 years ago. But we're always introducing new displays, including more abstract designs in recent years.

Elegant ones too, like wintry chandeliers in the ape house.

The zoo's architecture and gardens can be represented with class and panache. My style is not to compete but to work with what's here to enhance its natural beauty.

Any favorites?

Winter Wonderlawn on the South Lawn is one. It's a sophisticated setup that requires proprietary software, 40 computerized light-box controllers, and hours and hours of programming to synchronize the lighting and music.

Are the holiday lights at your own home amazing?

I'm so busy this time of year that I don't hang one light. I have one crazy Christmas tree, that's it. But it stays up until about April.

Origami Ornaments

Celebrate urban wildlife with our beautiful origami animal-shaped glass ornaments on your tree this year. New arrivals include a raccoon, owl, deer, rabbit, and mouse. \$18.50. See page 11 for purchasing details.



Photo by Todd Rosenberg

“Our family always goes to Members-Only Night at ZooLights. It's less crowded, and the kids love the crafts and hot chocolate. It's also our annual visit to see Santa early in the season, so we have time to get our orders in to him.”

—Tanya Albert Henry, Lincoln Park Zoo member since 2009

We're Making a List, Checking it Twice...

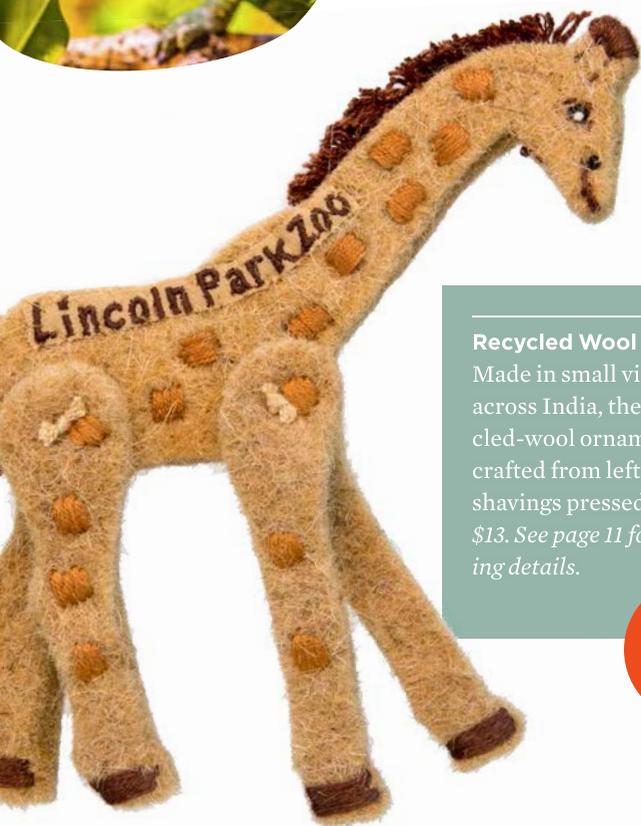
...turns out all the animals at Lincoln Park Zoo are nice!

*So we've loaded our sleigh with gifts they'll savor,
From marvelous toys to treats with flavor.
A meaty bone for lion Sahar, king of the zoo,
A swinging hammock for little snow monkey Otaru.
Mirrors for gorillas Nayembi, Patty, and Bella,
A boomer ball for rhino Maku—a big, tough fella.
Crickets to snack on for Meller's chameleon Rango,
A nest box for snowy owls Stanley and Freya (takes two to tango).
A bubble machine for curious penguins Robben and Dudley,
Plenty of fish to keep polar bear Siku looking studly!*



Shop the zoo's Holiday Wish List at lpzoo.org/wishlist and buy your favorite animal some extra special enrichment!

Photo by Chris Bijalba



Recycled Wool Ornaments

Made in small villages across India, these recycled-wool ornaments are crafted from leftover carpet shavings pressed into felt. \$13. See page 11 for purchasing details.



Photo by Julia Fuller

Search Light Challenge

ZooLights includes about 150 displays, including these 10. Can you find them all when you visit?

- Loch Ness Monster
- Waving gingerbread couple
- Hanging gibbons
- Rainbow zebras
- Fairy godmother
- Frogs jumping on lily pads
- Flamingos with palm trees
- Chameleon catching fly
- Giant Santa
- Igloo with sliding penguins



Photo by Julia Fuller

2 million

ESTIMATED
INDIVIDUAL
LIGHT BULBS
AT ZOOLIGHTS

Bright Turn Ahead

The zoo's Fall Fest corn maze gave families a fun, navigational challenge. For ZooLights, we're amped to present our **Light Maze Presented by PowerShares QQQ by Invesco**, a dazzling delight adorned with 30,000 glowing lights. The new experience will be open at Foreman Pavilion by the Waterfowl Lagoon during free ZooLights nights and ticketed ZooLights special events.

It's a family-friendly adventure. "We're always thinking about the kids," says Scott Parrish, whose Illuminight company (see page 7) designed the gleaming labyrinth with 4-foot-tall panels—far too short to conceal a lurking minotaur. Purchase tickets on-site. \$3 per person.



LINCOLN PARK ZOO.
LIGHT MAZE

PRESENTED BY **POWERSHARES QQQ**
by Invesco

The Fairest of Them All

Chicago has lots of holiday arts and craft fairs, but there's only one where you can buy whimsical ceramics next to lions, letterpress greeting cards near chimpanzees, and vintage jewelry in front of Rio Fuerte beaded lizards.

The zoo's **Holiday Market**, basking in the glow of ZooLights illuminations, returns on Giving Tuesday, November 28, with an array of local artisans, shops, and boutiques plying unique wares next to and inside animal houses.

"Nature and creation go together, and so do zoo animals and art—they bring joy to people," says Studio Giverny's Yoshiko Kozawa, a participating ceramic artist who crafts air-plant vases in the shapes of llamas and whales. "The zoo's holiday market is really community-oriented and a happy place to be."

Tuesday, Nov. 28, 6:30–10 p.m.; \$10; tickets: lpzoo.org/holiday-market.

MEMBERS
SAVE
20%



55,000

CUPS OF HOT CHOCOLATE WERE SOLD AT
LAST YEAR'S ZOOLIGHTS



Photo by Todd Rosenberg

Members-Only Night: Nov. 17

Star Treatment

Lincoln Park Zoo members and their guests get exclusive access to ZooLights for an entire evening before it opens to the public! Join the fun during **Members-Only Night at ZooLights** on Friday, November 17, from 4:30–9 p.m. Plus, free carousel and train rides and a 20 percent discount on Wild Things gift shop purchases! Learn more at lpzoo.org/zoolights.

Hoppy Holidays

Welcome to a beer fest where everybody looks radiant. Hoist a Delirium Noel dark ale or Stiegl Goldbrau lager at the fourth annual **BrewLights Presented By Louis Glunz Beer, Inc.** on Thursday, December 7.

Hosted by the Auxiliary Board of Lincoln Park Zoo, this festive salute to fermented brews takes place against the backdrop of ZooLights. Taste local craft, seasonal, and imported beers on tap across the zoo. Pair those pours with free carousel rides, music inside the Kovler Lion House, and mug shots with Santa.

Thursday, Dec. 7, 5:30–9:30 p.m.; prices vary; tickets: lpzoo.org/brewlights.



Photo by Julia Fuller

Did You Nadeau?

Five questions for Jim Nadeau, owner of Forest Park's Nadeau's Ice Sculptures

How long have you been doing the ice-carving demos at ZooLights?

Since the very first year of ZooLights 23 years ago!

What's your process?

It takes four days to make each air-free, 300-pound block of ice. One carver and one assistant work with four blocks each night, using power saws, chisels, and computer-controlled cutting machines. They first etch the designs from a drawing or supplied rendering. Each piece usually takes one to three hours to complete.

What about more complex sculptures?

Those take a lot longer. We always donate a large display for the opening day

of ZooLights. We've made Noah's ark and a 10-foot-tall Olaf snowman. This year we're building a huge, ornate ice throne that three to four people can sit on for photos.

Anything else new planned this year?

We've hired some Second City actors to work the crowd while we sculpt. Think game show. Very family-friendly. They'll share fun facts about our work and the zoo.

Do you take requests?

All the time, although not every design suggestion is feasible. Send us the art work and we'll take it into consideration!



Photo by Todd Rosenberg

Have a great idea for a ZooLights ice sculpture? Email us at events@lpzoo.org, include a drawing or rendering, and we'll pass it along to Jim!

40,500

POUNDS OF ICE THAT CARVERS USED—
EQUIVALENT TO ONE FULL 40-FOOT-LONG
TRAILER TRUCK—DURING ZOOLIGHTS ICE-
SCULPTING DEMOS LAST YEAR



Photos by Julia Fuller

All Kids Aside

Grown-ups get ZooLights to themselves—plus a full program of expert chats and animal-enrichment viewings and crafting—on Thursday, November 30, at **Adults Night**

Out: Holiday! Get the details at lpzoo.org/adults-night-out.

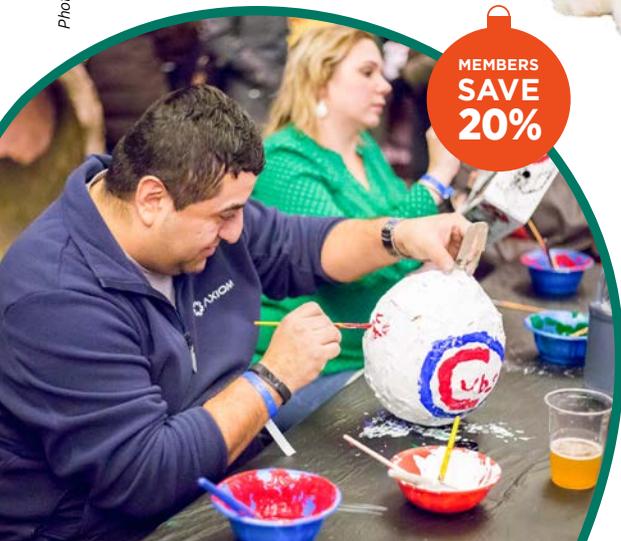
MEMBERS
SAVE
20%

A.D.O.P.T.: Animals Depend On People Too

Holiday ADOPTs make wildly unique gifts. They also support the zoo's animal care efforts, so you'll make a difference for wildlife conservation too! This season's featured ADOPTs star cuddly polar bear, western lowland gorilla, and red panda plushes with ADOPTion certificates, magnetic-frame photos, and fun fact sheets. Add a zoo membership for a truly zooper-duper gift package.

Shop ADOPT at lpzoo.org/ADOPT, 312-742-2322 (Monday–Friday, 9 a.m.–5 p.m.), or Wild Things! gift shop at the zoo.

Photo by Julia Fuller



Animals After Dark

Most of the zoo's animal houses are open during ZooLights nights—ideal for viewing nocturnal species more active after-hours. Here are a dozen to look for during your visit. See lpzoo.org/animals for exhibit locations.

- Hoffman's two-toed sloth
- Dwarf crocodile
- Red panda
- Snow leopard
- Puma
- La Plata three-banded armadillo
- Moholi bushbaby
- Pygmy slow loris
- Snowy owl
- Aardvark
- Green tree python
- Egyptian fruit bat



Harbor Seal Brass Ornament \$16.

Porcelain Ornaments
Hand-painted by Jan Heyn-Cubacub, these are her 27th anniversary edition! \$36.

Carousel Glass Ball
This year's edition features an ostrich and is packaged in a satin box. \$24.



Sequined Ornaments
Hand-stitched in small

villages, these will put the sparkle into this holiday season! \$16.

How to Shop
Purchase this season's ornaments, holiday card and more at lpzoo.org/holidayshop, WildThings! gift shop during your next zoo visit, or by calling 312-742-2265.



Photos by Julia Fuller

ZooLights Festivities

For more details, visit lpzoo.org/calendar

November

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

December

SUN	MON	TUE	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

January

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Open and free to all

- ZooLights Evenings
- Family Nights

Special events: Open to visitors with tickets only

- Members-Only Night
- Adults Night Out: Holiday!
- Holiday Market
- BrewLights



Chill Factors

What goes into caring for the zoo's animals during a Chicago winter?

BY CRAIG KELLER | ILLUSTRATIONS BY ASHLEY BEDORE



Clockwise from left: Akita, a male Japanese macaque, explores his troop's woody habitat; Bactrian camels; General Curator Dave Bernier.



Photo by Todd Rosenberg

Holiday events aren't the only reason to visit Lincoln Park Zoo in winter. The season also offers a unique perspective on how zoo animals handle Chicago's coldest months of the year. For some with natural adaptations to cold climates—polar bears, Japanese macaques, snowy owls—it's an easy transition. But even species native to warmer parts of the world can enjoy a day outside in the snow when the conditions are right.

We chatted with Dave Bernier, the zoo's General Curator, about how winter shapes the Animal Care staff's management of different species.

When can visitors see a black rhino play in the snow?

All the animals that go outside have temperature guidelines. The veterinarians help us put those together, and we update them every year. Keepers work with those ranges after consulting the National Oceanic and Atmospheric Administration's website for the weather forecast.

If it's below the minimum temperature in their range, the rhinos can't go outside that day, no matter what, for their safety. But there's a range where they can be outside for a short period of time if it's sunny, the wind is low, the temperature is in the right place. We've got these different parameters. That's why on some days we can get a snowfall and the rhinos can go outside if they choose. Or it's a cloudy day but colder than before, so they remain indoors.

How about Etana, the rhinos' giraffe neighbor at Regenstein African Journey?

She's not likely to be outside when it's below 40 degrees. Age also comes into play with her, because she's 19 now. Keepers must use discretion for her outdoor access if there's snow on the ground.

Because she might slip?

Yes, slip and falls are a consideration for hooved animals, especially those with harder hooves like giraffes and zebras. Snow can be fine for some, but they can't get good traction on icy areas. Keepers have to go out and evaluate their exhibits.

The Bactrian camels and Sichuan takins, however, seem fine in wintry conditions.

They're adapted to that environment. The takins' hooves are softer and spread out, so they get better traction on a variety of surfaces.

Photo by Todd Rosenberg



Can keepers use salt to melt icy areas?

The only place we can use salt is at the Kovler Seal Pool, because the harbor and gray seals have salt water. We have to use sand as a friction material every other place.

How much snow shoveling is required?

Keepers do a lot of shoveling in the outdoor bird exhibits. The vultures and storks can handle a lot of snow by perching up higher, but we have to shovel out paths on the ground for them to come down to eat and walk around.

Bird keepers also put on waders and break up ice in the Swan Pond and Waterfowl Lagoon.

Those folks are super hardy. Keepers spend a lot of time ensuring the water remains open and free of ice. This allows the birds to be comfortable during the coldest of days. Despite the frigid air temps, the waterfowl are able to remain outside all year long as long as there is open water.



Photo by Julia Fuller

Visitors are often surprised to see flamingos outside in winter.

People always think of flamingos as tropical birds. Years ago, we had Caribbean flamingos, but every fall they got marched inside the building and had to stay there for four months because they couldn't handle the temperatures outside. Now we have Chilean flamingos, which are native to a higher altitude and cold-tolerant.

Regenstein Macaque Forest was planned for a cold-tolerant species from the get-go.

If you want to provide outdoor access year-round, you pick a four-season animal or you make the exhibit a four-season space. We have a bit of both with the snow monkeys. They're hardy enough to handle the weather, but there are heated rocks and fan-cooled and sheltered areas so they'll be comfortable outside and choose to be there even when they have indoor access. Giving

all the zoo's animals voluntary choice and control over their environments is important.



Photo by Chris Bijalba

Can you share another example of animals choosing how they use their exhibit?

The African penguins are good in cold weather, but they have a certain temperature threshold. If it drops to minus 15, let's say, we wouldn't want them outside. We can keep them inside or give them voluntary access to a holding area. We tested this out, and once they realized they could choose their location, they freely moved between those two spaces and made good choices. It also helps that the entire penguin deck is heated to prevent it from getting icy or accumulating snow. We also make sure they eat a lot in winter because they're burning more calories then.

Do the polar bears eat more in winter here too?

Females without cubs come into breeding season around January. Kobe was in estrus a few times after her arrival, and Siku would eat very little during these times. In the wild, food availability is at its lowest in late winter at the beginning of the breeding season, when their time is split between hunting and seeking out a mate. Siku just wanted to be with Kobe, the female. By March or April, his weight loss was noticeable by the looseness of his skin. After he started eating again it took him until about June to put that weight back on. That's a normal fluctuation that we anticipate, so we let him put on extra weight in fall.



Left, bottom: Keepers break ice to provide open water for trumpeter swans and other waterfowl. Left: Chilean flamingos are adapted for cold climates. Below: Male black bear Kitai remains active during winter.

Speaking of bears, do the zoo's black bears hibernate in winter?

There's no reason for us to facilitate hibernation. It's risky, you'd have to watch them constantly, and the conditions have to be right. Our bears reduce their activity level but will keep eating all the way through winter.

We only have a few animals for which we purposefully encourage hibernation—those are reptiles—and they need that biologically to be reproductively successful.



Photo by Chris Bijalba

Wildlife at the Zoo in Winter

South of the zoo's main grounds, wild animals adapt to winter by relying on natural habitat at the zoo's Nature Boardwalk. In this prairie pond ecosystem, grasses and other native plants are brown and dry in winter, but that doesn't mean the place has shut down.

"To us it may seem dead, but for the animals it's providing a resource," says Maria Jazmin Rios, Coordinator of Wildlife Management at the zoo's Urban Wildlife Institute. "It provides different habitats to support different animals."

A wide variety of birds—from downy woodpeckers to white-breasted nuthatches—find shelter among stalks and shrubs and forage for berries, dried seeds and insect larvae among plants, from snowberry to juniper.

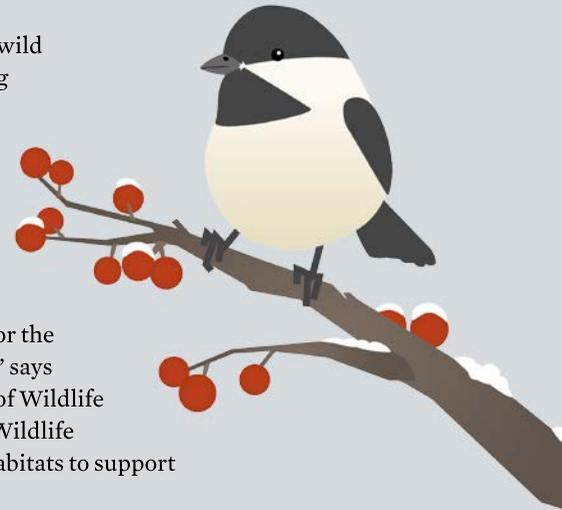
Meanwhile, a surprising number of mammals are hard at work. "The only mammal that hibernates here is the chipmunk," Rios says. Other animals, such as deer mice, slow down and doze in their nests and burrows, but rouse periodically to eat. Squirrels and rabbits are wide awake, hustling for a living throughout the cold months. "Rabbits will eat the roots of the plants," Rios says. "They don't hide food like squirrels. They have to forage."

Small animals make meals for bigger animals. Coyotes, red foxes, and red-tailed hawks hunt along the boardwalk.

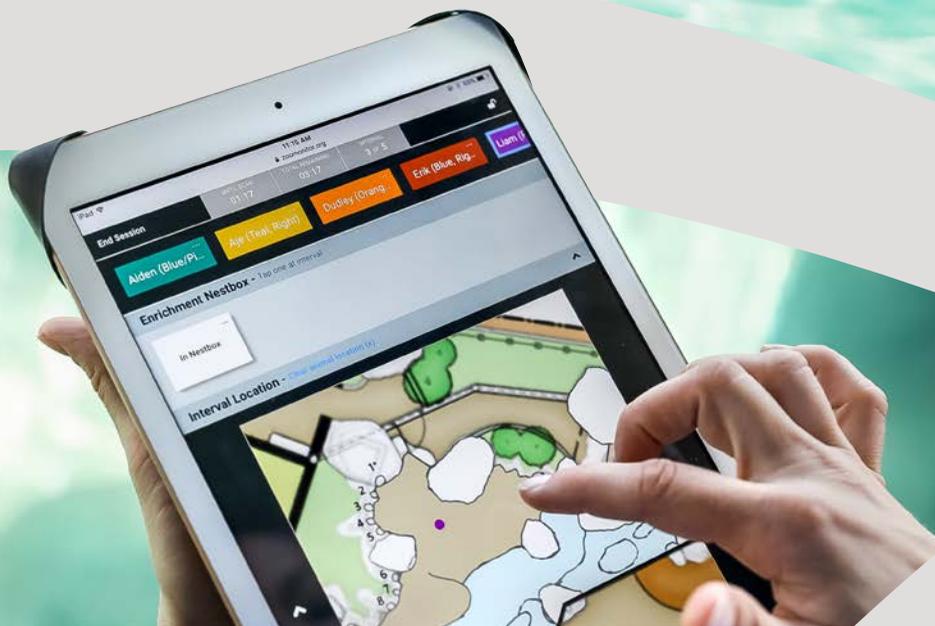
"Winter is one of the best times to go out and look for mammals," Rios says. "There are fewer places to hide. You might see tracks in the snow."

You probably won't see frogs, snakes, or turtles, cold-blooded animals that rely on the environment to thermoregulate. In winter, green frogs and bullfrogs hibernate on the pond's bottom, taking in oxygen from the water through their skin.

Snakes and turtles brumate, a process similar to hibernation that slows their metabolism. They stop eating and become inactive to conserve energy and avoid watchful predators. Garter snakes burrow below the frost line under rocks and plants. Painted and snapping turtles burrow headfirst in mud underwater or on land and absorb oxygen through their exposed cloacas—a multipurpose rear-end orifice. —Beth Botts



Tapping into



Animal Behavior

BY KATE SILVER

Technology created at Lincoln Park Zoo is fostering a deeper understanding of animal welfare and health here and across the globe

A Lincoln Park Zoo volunteer is holding an iPad and taking notes as she stares intently at Howie, a stout pygmy hippopotamus shimmering in the water at Regenstein African Journey. Just a moment earlier, she says, Howie wandered across the exhibit to chomp on a piece of lettuce that fell from a feeder above. From the volunteer's voice, you can tell she's excited at the activity, and for good reason: the iPad app she's using, called ZooMonitor, collected the data that led to the installation of that very feeder. By observing Howie's activity, this volunteer is part of a larger team helping the zoo better understand animal behavior and improve their care.

"ZooMonitor promotes data-driven decision making," says Jason Wark, Ph.D., a Research Scientist with Lincoln Park Zoo who manages the volunteer-driven monitoring program, analyzes the data, and introduces the technology to other animal-care professionals around the world.

Designed at Lincoln Park Zoo, ZooMonitor launched in 2016, and the app is now a global tool freely used by more than 200 institutions, including zoos, aquariums, sanctuaries, universities, and other facilities in more than two dozen countries.

Lincoln Park Zoo volunteers spend 10 minutes per animal conducting observation sessions. In the case of Howie, for example, every 60 seconds the iPad beeps, and the volunteer enters information, such as his location in the exhibit and what he's doing at that moment, whether it's eating, walking, interacting with fish, or taking a snooze. That data gives zoo staff a baseline understanding of the animal's behavior. If that behavior changes—say the animal begins foraging less or sleeping more—staff can work quickly to try and understand why.

The data helps staff compare the actions of an animal in the zoo to the species at large, says Allison Kao, who, as the zoo's Behavioral Husbandry and Enrichment Manager, uses ZooMonitor to help her evaluate whether animals are engaged in their natural behaviors.

Left, top: Research Scientist Katie Cronin, Ph.D., uses the ZooMonitor app to observe African penguins' behavior and exhibit use. Left, bottom: Cronin indicates the location of a penguin in the exhibit using the app's built-in map feature.

Photo by Veronika Hernandez



Take Action!

Join the ZooMonitor Team

Lincoln Park Zoo is looking for volunteers for the ZooMonitor program. To participate, volunteers must be 18 years or older, able to attend a four-day training, and commit to working one four-hour weekday shift per week (9:30 a.m.–1:30 p.m. or 1 p.m.–5 p.m.) for a year. To learn more visit lpzoo.org/volunteer.





Photo by Todd Rosenberg



Photo by Todd Rosenberg

In the case of Howie the pygmy hippo, for example, she was able to look at the insights from the app and assess his activity level. She compared that information to statistics showing the movement of hippos at other institutions and in the wild, and discovered that Howie would benefit from being more active and foraging more. That's why those feeders were installed. In the past, Howie was fed twice a day at the same time and place. Now, the four new feeders drop food randomly, and he—along with his pygmy hippo counterpart, Annie—walks around and searches for food.

"They're definitely more active and they're doing some interesting behaviors that we haven't seen them do before," says Kao. "They're going over to where the feeders are when there isn't food dropping, and they're doing 'jaw jabbering.'" Jaw jabbering, she says, is something the hippos usually do during breeding season when they're close to one another—although, adds Wark, "It's anecdotal to assume anticipation. We're not certain of its role in social behavior."

ZooMonitor was inspired by monitoring technology created to collect data on primates at the Lester E. Fisher Center for the Study and Conservation of Apes at Regenstein Center for African

Apes. There, since about 2001, scientists and zookeepers have recorded the apes' behavior in order to learn from it.

The challenge, says Wark, was that the earlier technology demanded a certain level of technical expertise to operate. With ZooMonitor, which was built with the support of grants from the Rice Foundation and Institute of Museum and Library Services, the goal was to devise an easy-to-use app for data collection

by experts and non-experts. That way, volunteers could observe animals and collect data, allowing researchers and zookeepers time to focus on other duties. Today, a team of more than 40 volunteers visits the zoo once a week for four hours at a time to collect information on 26 species. Curators can access online reports to quickly gain insights about those animals.



Photo by Todd Rosenberg

What Does ZooMonitor Monitor?

Jason Wark has traveled the world to instruct institutions on using ZooMonitor. Recently, he visited Asia to work with Wildlife Reserves Singapore, and this fall he's flying to Belgium for a ZooMonitor workshop with the European Alliance of Rescue Centres and Sanctuaries.

ZooMonitor is also used widely at facilities in the United States.

Here's how:

- **Detroit Zoo** is monitoring penguin behavior.
- **Shedd Aquarium** in Chicago is collecting data on dolphins and beluga calves.
- Multiple institutions are participating in a sand tiger shark study.
- **Cleveland Metroparks Zoo** is monitoring multiple species, including a project evaluating several bear species that rotate daily through different habitats.
- **San Francisco Zoo** is developing a zoo-wide volunteer monitoring program, similar to the system at Lincoln Park Zoo.

Take Action With Us

BY MEGAN ROSS, PH.D.
EXECUTIVE VICE PRESIDENT



Research Scientist Katie Cronin, Ph.D., says ZooMonitor gives animals a way to communicate about their own welfare. “The information it gives you paints a picture that lets you know whether an animal is thriving or just kind of getting by,” says Cronin. She’s using ZooMonitor to better understand the African penguins. The zoo recently launched Malott Family Penguin Encounter (available April 1-October 31), in which guests join penguins in their cove and learn about them. ZooMonitor allows Cronin to study the birds’ behavior and evaluate the impact of the human interaction. “We want to make sure the penguins are benefitting from this and experiencing positive welfare,” she says.

The team monitors the birds before, during, and after the encounters to see if any changes occur. They’re also observing whether penguin personality (bold versus shy) determines which penguins are more eager to interact with humans. “We can say that there are a few penguins that are repeatedly going to the encounters. They are motivated to go in there as soon as the keeper comes around,” says Cronin.

ZooMonitor data is also being used to inform the way renovations take shape in the Kovler Lion House. Thanks to the app, zoo staff have a wealth of insights on how the lions use their space—which areas they spend time in, which areas they avoid, how temperature impacts their movement—and are sharing that information with the architectural firm redesigning the building as a part of The Pride of Chicago capital campaign. Once completed, it will be a lion house designed around the behavior and preferences of the lions that will live there.

In time, Wark says he hopes that data collected by ZooMonitor will contribute even broader insights among institutions. Right now, one of the challenges that zoos face is they’re working with a limited number of animals, and they tend to keep the information they compile to themselves. By collecting and sharing data across the globe, ZooMonitor could one day help change that. “In the future, we hope to build population-level understandings of animals and bridge that gap,” he says.

At the zoo, using tools like ZooMonitor, we strive to integrate science-based decision making into how we manage our animal population. We also work to help animals outside the zoo’s boundaries.

At the Lester E. Fisher Center for the Study and Conservation of Apes, we’ve leveraged our scientific studies to not only understand primate behavior but to support and advance policy change as well. We’ve played a leading role in curtailing the use of chimpanzees in frivolous entertainment ventures and ending the practice of breeding them for sale as personal pets.

We partnered with like-minded organizations such as the Jane Goodall Institute and the Humane Society of the United States to protect chimpanzee welfare. We teamed with Chimp Haven to form the first-ever chimpanzee zoo-sanctuary collaboration. And we’ve relied upon people like you to effect these changes as well. Here’s what you can continue to do to protect primates in this country:

- ➔ Talk to your friends and family about why primates don’t make good pets. This includes not only chimpanzees but also monkeys who are very social animals. They may look cute, but their advanced cognitive and emotional needs cannot be met by pet owners.
- ➔ Don’t support companies that use arbitrary imagery of primates in their media or advertisements. Our research demonstrates the long-term, harmful effects of these practices on chimpanzee and lemur welfare.
- ➔ Avoid sharing social media content that promotes inappropriate portrayals of these important species. A seemingly harmless share can help grow the popularity of these images and counter important conservation efforts.

Together we can continue to strengthen the protection of chimpanzees and ensure all primates are safe and sound. Learn more at lpzoo.org/primatesnotpets.

Opposite page: Volunteer Donna Finlon (top, left) and John Willcox, Behavioral Husbandry and Enrichment Intern, use ZooMonitor to record observations of plains zebras and pygmy hippos. The research helps caregivers make data-backed decisions benefitting species throughout the zoo.

Metal of Honor

A riveting sculpture project welds art and science to forge community connections to wildlife

BY EMILY ALTIMARI



Photo by Isaac Guzman



Photo by Isaac Guzman

OPEN Center for the Arts in Chicago's Little Village neighborhood inspires creativity in the community. Lincoln Park Zoo inspires communities to create environments where wildlife will thrive in our urbanizing world.

Weld the two together and you get an art project that enlists the limitless creativity of elementary school students, sparking a lifelong connection with wildlife along the way.

In early March, about 300 elementary students from Little Village came to Lincoln Park Zoo to observe the chimpanzee troop at Regenstein Center for African Apes (above, left). They got nose-to-nose with the chimps. They learned about the endangered status of chimpanzees in the wild. They laughed. A lot. Then, they were tasked with drawing the chimpanzees.

The results were truly remarkable. Diana Ruiz highlighted the similarities between chimpanzees and humans. Jocelyn Argueta picked up on chimpanzee tool use. Jimena Hernandez drew chimpanzees in a social setting, and Nahi Morales focused on chimpanzees' muscular build (below).

"Four-, five- and six year-olds have the most pure creativity that has no rules," says OPEN Center for the Arts Director Omar Magaña. "Learning about chimpanzees up close at the zoo taught them more than a text book ever could."

Once the apes were on paper, Magaña; Steve Ross, Ph.D, Director of the zoo's Lester E. Fisher Center for the Study and Conservation of Apes; Joe Rothleutner, the zoo's Director of Horticulture; and Sofia Mendez from Little Village's Marshall Square Research Network selected four winners.

Magaña then brought the four winning drawings to life, creating sculptures from the drawings using recycled metal (above, right).

The troop of sculptures resides on the southwest side of the AT&T Endangered Species Carousel and will move to Marshall Square in Little Village next spring. The zoo's Dana Murphy, Vice President of Learning and Community Engagement, hopes this project will inspire connections with wildlife, which will instill a sense of responsibility for all cohabitants of the earth.

"We hope to continue this project in the future with other species," Murphy says. "These young artists, who are excited to share their chimpanzee knowledge with family and friends, are the next generation's conservation stewards. As adults, we're inspired watching their curiosity turn to deep-rooted care for living things."

"Learning about chimpanzees up close at the zoo taught them more than a text book ever could."



Photo by Todd Rosenberg



BY CRAIG KELLER

Jim and Lisa Challenger

Zoo Members

We hear ZooLights is quite a holiday production for your crew. We get three families together, including our five kids, see the holiday windows downtown, go ice skating, then come to ZooLights in a stretch Hummer limo. We love the lights and ice sculptures!

You've generously donated to the zoo.

Why? It was an eye-opener to find out the zoo depends on donations to help keep it free. The zoo's wildlife conservation work is also important to us.

How so? We support conservation charities in South Africa. Our son, Billy, volunteered for Wildlife ACT and Youth 4 African Wildlife there, and almost became a safari ranger. When we met



Photo courtesy of Lisa Challenger

researchers during a family tour at the zoo, and learned about the zoo's work in Africa, that really convinced us to help.

We hear you'll soon be caring for animals yourselves. We bought a small farm in Northfield. We plan to put rescue horses to pasture, raise chickens, and hopefully have alpacas, which will keep coyotes away from the chickens. We'll also have beehives, because bees are good for the environment.

and approved materials. The recycling aspect is phenomenal. We look at a cardboard box in a different way: "I can use this to make zebra legs."

Same goes for firehose-ball enrichment, right? We work with park services and Hose2Habitat to give those products a second life. We made firehose cubes for the two lionesses, and one wouldn't share. Being a sister myself, I totally get that.

What are some of your most inspired creations? We made a 14-foot giraffe for the rhinos that looked real from a distance. The dwarf mongooses popped out of a deep-dish pizza—everybody's nightmare. This fall we made iceberg haunted houses for the polar bears.

Do you have to be artistic to volunteer? Everybody can make enrichment. It's great group therapy—and enrichment for people too!

Tanya Albert Henry

Zoo Member

How long have you and your family been zoo members? We joined about eight years ago when our youngest was two. We have three children and continue visiting the zoo as they grow up. Everybody gets something out of it.

Any particular perks you like best?

We're looking forward to Members-Only Night at ZooLights!

Why is that? It's less crowded, usually not too cold, and it's our Santa visit. We were at the zoo a few weeks ago in the Primate House, and my daughter said, "This is where Santa comes!"

During zoo visits do your kids learn while having fun?

The educational carts are great. I prod them to get involved with that and look at the world as a whole where animals are endangered and need our help.

What do you admire about the zoo?

It's such a historic place. The Lion House brickwork transports you back to the 1920s. And the skyline surrounded by wildflowers at Nature Boardwalk is an amazing oasis in the middle of the city. ■



Photo courtesy of Tanya Albert Henry



Photo by Lisa Miller

Theresa Pasquarella

Volunteer Enrichment Group Leader (center, left)

What's the best thing about helping the zoo's animal enrichment program?

Playing an active part in supporting the animals' care and welfare. You see your hard work destroyed in 10 seconds and say, "This is sooo worth it."

What goes into the piñata-style enrichment? Flour, cardboard, craft paper that comes from trees, nontoxic paint. All safe

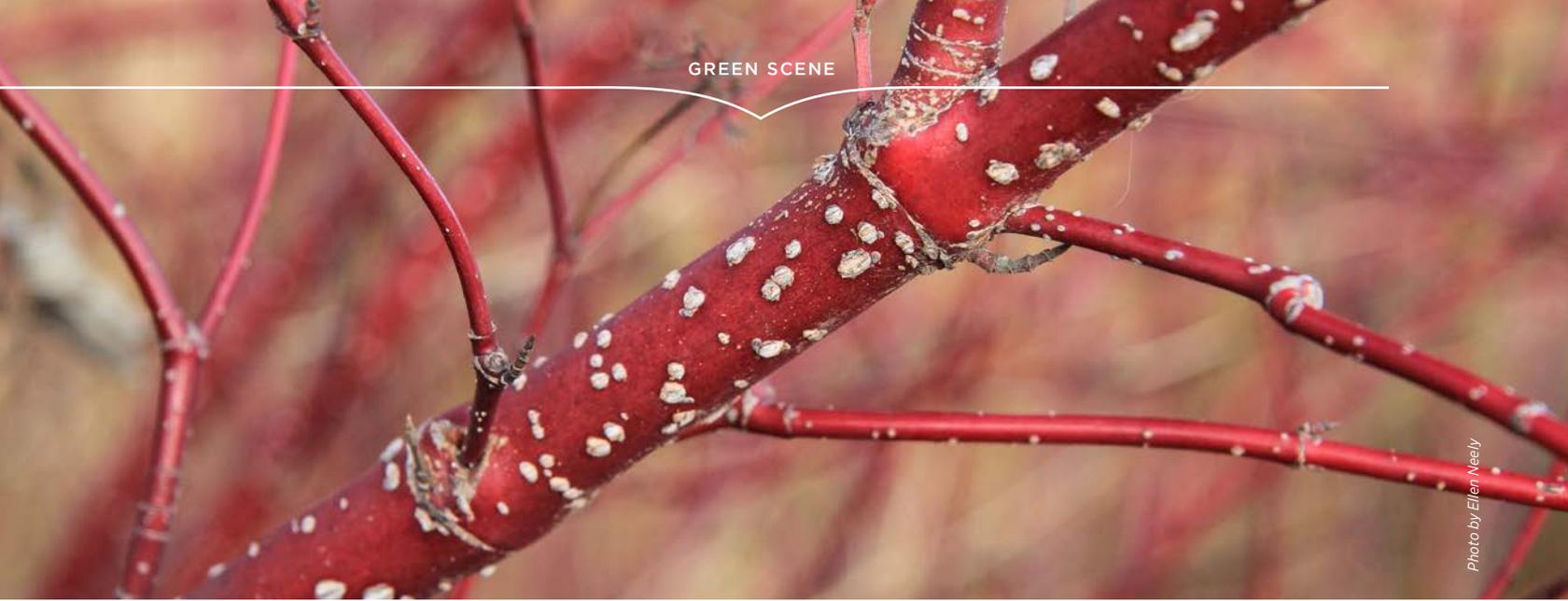


Photo by Ellen Neely

Winter Wonderland

BY BETH BOTTS

The zoo's gardens are designed to offer scenic delights even in the midst of winter

When you come by Lincoln Park Zoo to visit the penguins, the Japanese macaques or the polar bears, don't miss the winter delights around and between the exhibits: the gardens. You can't take the animals home with you, but even in winter, you'll see plants and design ideas that would fit as well in your garden as in Lincoln Park.

Winter design in most gardens starts with evergreens. "Evergreens are like the bones of the garden," says Joe Rothleutner, the zoo's Director of Horticulture. "They give it structure and provide interest in winter." When falling snow is caught on the blue-green needles of spruces and firs, "it's like icing," he says.

Look for the lively collection of dwarf conifers—evergreen trees and shrubs that have cones—near Café at Wild Things in a variety of shapes and sizes. Formal evergreen hedges, such as the boxwoods around the Eugene Field Memorial (the "Dream Lady" statue), make green ribbons that define spaces and contrast with gray days.

The spareness of winter highlights qualities that are often overlooked in summer, such as the textures and colors of tree bark. Rothleutner and Mike Davenport, Curator of Horticulture, look for interesting bark when they choose trees to plant. For example, the bark of Japanese stewartia peels in patches like a multicolored jigsaw puzzle.

Dried flower heads can be charming in winter. The zoo's many hydrangea shrubs have white fluffs of summer flowers that dry to a delicate tan. When clouds of snow pile up on them it's an echo of the white summer blooms. The dried seed heads of flowers such as coneflowers offer a treat to birds.

Then there are grasses, like those near the Walter Family Arctic Tundra, where the polar bears live. Ornamental grasses are green in summer but dry to gold in fall. "A lot of them will stay upright well into the winter," Rothleutner says. Yet grasses are never stiff, always moving, swaying in the wind, swishing and rustling, an important part of the rich experience of a winter day at the zoo. ■



Photo by Chris Eijalba

Above: Red twig dogwood provides spectacular color in winter. Right: Canada goldenrod loses its lemony blooms, but provides textural interest and nutritious seeds for birds.



Northern Helmeted Curassow

The northern helmeted curassow (*Pauxi pauxi*) is named for the armor-like, bluish-gray casque on its forehead. Scientists theorize the casque has a resonating function that helps amplify the male's low, booming call. Native to western Venezuela and northern Colombia, these large, ground-dwelling birds forage for fallen fruit and seeds in cloud forests of the Andean Mountains. The elusive species is endangered largely due to habitat loss for farming.

Males and females closely resemble each other. You'll find the female shown here in the Deep Forest Exhibit at the McCormick Bird House. ■

—Craig Keller



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trees



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gallons of
water



3,452
pounds of
waste



11,342
pounds of
CO2

Upcoming Events

Go to lpzoo.org/calendar for details on upcoming events.

November

Thursday, 2

ZooLA: Zoo Live Auction *Hosted by the Women's Board*

Friday, 3

School Holiday Camp

Friday, 17

Members-Only Night at ZooLights

Friday-Sunday, 24-26

ZooLights Presented By ComEd and PowerShares QQQ by Invesco

Tuesday, 28

Holiday Market

Thursday, 30

Adults Night Out: Holidaze!

December

Friday-Sunday, 1-3

ZooLights

Wednesday, 6

Wine & Wildlife: The Role of Science in Care

Thursday, 7

BrewLights Presented By Louis Glunz Beer, Inc. *Hosted by the Auxiliary Board*

Friday-Saturday, 8-23

ZooLights

Sunday, 10

Chris White Trio Tribute to "A Charlie Brown Christmas"

Tuesday-Sunday, 26-31

ZooLights

January

Monday-Sunday, 1-7

ZooLights

Tuesday-Friday, 2-5

Winter Break Camp
(register for one or more days)

Wednesdays, 10-March 7

Thursdays, 11-March 8

Saturdays, 13-March 10

LEAP: Learn, Explore And Play