# En Members of Lincoln Park Zoo · A Magazine of Conservation and Education · Winter 2016

## Dive In!

Immersive New Homes for Polar Bears and Penguins

2 . James a grant



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Volume 15, Number 3 · For Members of Lincoln Park Zoo



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#### Continue Your Visit Online

Visit Ipzoo.org for Lincoln Park Zoo photos, videos and up-to-date info on events and animals. You can also find us on Facebook, Twitter and Instagram!

#### We'd Like to Hear from You!

Send your feedback on this issue of Lincoln Park Zoo magazine to magazine@lpzoo.org.

Cover: African penguins at Robert and Mayari Pritzker Penguin Cove. Above: A Hoffman's two-toed sloth baby.

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QUESTIONS? Contact the Membership Department. Staff are on hand during normal business hours phone 312-742-2322 or visit us online at lpzoo.org.

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## perspective

A Letter from President and CEO Kevin J. Bell

## Creating a Connection



In early October we were pleased to open to the public the Robert and Mayari Pritzker Penguin Cove. As this issue went to press, we also looked forward to opening Walter Family Arctic Tundra

in November. As we designed these two terrific new exhibits, our calculus centered on two major goals: maximizing well-being by prioritizing the features that will best meet the needs of these amazing animals, and fostering human-wildlife connections by bringing visitors as close to the animals as possible.

You'll see many of those features profiled in these pages. We'll introduce you to the nest boxes and pool encouraging natural behaviors for our cozy colony of African penguins. We'll highlight the dual pools and ample tundra that will provide our polar bears space to swim and room to roam.

As a zoo, though, we also shaped these new, state-of-the-art buildings with our guests in mind. Animal welfare was the top priority, as it always is, but that doesn't mean we overlooked the power of creating a connection between visitors and the amazing wildlife we care for and are trying to conserve.

How better to enlist people to care about the future of polar bears-a wild species that lives a frozen world away-than to introduce guests to the Arctic adaptations of these amazing predators up close at our training wall? Similarly, what can inspire more of a movement to protect African penguins than

seeing, hearing and, yes, even smelling this social species as they dive and play inches away from our 3.5 million annual visitors? As our educators know, research shows that connecting with wildlife can influence peoples' relationship with nature. It makes them more likely to show concern, which in turn makes them more likely to consider, to care and to act.

Zoos exist to offer world-class care to our animals, but that isn't the only reason we exist. We open our gates, and we work together through the Association of Zoos and Aquariums, to introduce our visitors to the wonders that can be found around the globe and also to enlist them as partners in protecting it.

AZA-accredited zoos and aquariums throughout North America are working together to save African penguins from extinction via the SAFE (Saving Animals from Extinction) program. Similarly, many zoos, including Lincoln Park Zoo, are Arctic Ambassador Centers with Polar Bears International, a non-profit that's working to sustain a future for polar bears across the Arctic.

These efforts may seem distant from a child seeing a polar bear for the first time at Walter Family Arctic Tundra, but they're not. They're all connected, much like nature is connected. Fostering the first step toward caring is a key part of what we do. And as you'll see, care is built into the foundation of our new zoo exhibits.

 Image: Bulk
 Kevin J. Bell

 President and CEO

Left: A colony of African penguins displays social-bonding behavior at the Robert and Mayari Pritzker Penguin Cove. Right: Predominantly terrestrial when not hunting seals, polar bears will be welcomed by a terrain-focused habitat at Walter Family Arctic Tundra.



## A Cozy Colony

#### BY CRAIG KELLER

#### The zoo's new African penguin exhibit sends a loud conservation message in black and white

We'll forgive you for thinking of donkeys when you hear heehaws on your approach to the Robert and Mayari Pritzker Penguin Cove in the northeast corner of the zoo. African penguins, colloquially called jackass penguins for their donkeylike brays, can make a ruckus that rivals any barnyard banter.

It's an appropriate soundtrack for the thrilling new exhibit, which made its public-opening splash on October 6. It's been five years since the closing of the aging Kovler Penguin Seabird House, where rockhopper and king penguins held court.

Its successor, where a single, endangered penguin species will breed, nest and receive expert care, brings visitors nose-tobeak with these remarkable marine seabirds in an immersive, open-air setting. Its naturalistic design (see "Check Out the Cove," page 6), featuring rocky shoreline terrain, a large pool and nest-box burrows, is a microcosm of the southern African beaches and offshore islands where close-knit colonies of African penguins—the only penguin species that breeds on the African continent—reside in the wild.

#### **Creating a Colony**

The 12 members of Penguin Cove's inaugural colony include eight males and four females. Most are just 1–2 years old and won't be sexually mature for another year or two (though a few are older and may receive breeding recommendations sooner). African penguins are a monogamous species, with males and females forming pair bonds that often persist throughout their lifetimes.

"Ultimately, we want to breed up to our exhibit's capacity of 24–30 birds," says Sunny Nelson, the zoo's Hope B. McCormick Curator of Birds. "That may entail getting additional birds in

the future, swapping out birds or breeding some of the birds we have."

Nelson initiated the process of assembling the colony three years ago with the coordinator of the African Penguin Species Survival Plan<sup>\*</sup> (SSP), a shared conservation effort by zoos throughout the Association of Zoos and Aquariums. Nearly 1,000 African penguins are cared for at 51 AZA institutions in a stable, genetically diverse population. Scientists at the zoo's Population Management Center (PMC) analyze its genetic data to inform transfer and breeding plans. Penguin Cove's residents came here from three zoos, one aquarium and one aviary. Nelson and Zoological Manager of Birds Andy Van Laan were able to plan a cohesive group by reviewing detailed records for each individual through the SSP/PMC process. Did they prefer male or female keepers? How well did they interact with other penguins? Would they be arriving solo or as part of a socially bonded group?

"We started with four from New England Aquarium last spring," says Nelson, "which was great because they're a colonial species, and we didn't want to begin with one bird. The more birds there are, the more comfortable they are."

While Penguin Cove's construction neared completion, the growing colony was cared for in a behind-the-scenes area at Regenstein African Journey. As their social bonds developed, keepers closely monitored their behavioral and feeding habits. Keepers hand-fed (and still do) the penguins twice a day, tracking diet preferences and amounts consumed. Because the penguins ate a wide variety of fish at their previous homes, the zoo's Animal Care staff stocked up on multiple

seafood options—from herring
 to mackerel to sardines—
 to provide individuals with
 choices.



#### **Torpedoes and Social Tactics**

Zoo vets waited until the colony had grown to several birds before initiating medical exams for preventive care. Exams, of course, first required catching the penguins, a daunting task despite their 18-inch-tall, 7-pound average measurements.

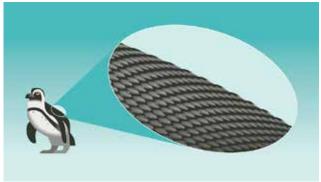
"They're like torpedoes—incredibly powerful," says Nelson. "Unlike other birds, their bones aren't hollow, and they're very muscular and compact, which lets them dive and swim through water. And they catch fish in water, so their bills are extremely sharp. You wouldn't think so because they look short and blunt. But they can do some damage."

Visitors to Penguin Cove will see enrichment in the pool from big, bobbing ice cubes to "fishsicles" to underwater, artificial kelp—that should prompt plenty of impressive swimming. African penguins may be flightless above ground, but they "fly" up to 12 miles per hour underwater. Strong, flipper-like wings with fused bone structures propel those torpedo-shaped bodies forward while large, webbed feet and tails act as rudders and help steer.

"You'll see many natural, movement-based behaviors on display," says Nelson. "Lots of neck-rotating, head-bowing and mutual preening—especially when pairs are bonding. There will probably be territorial disputes too, but we expected that and prepared by providing enough nest boxes for everyone."

Visitors will get to see these social interactions and aquatic abilities in all seasons. Adults don't all breed at the same time, so colonies include eggs and chicks at various stages of development. And because African penguins hail from a temperate climate, they have special adaptations that help them control their body temperature during warm summers and cool winters. They also have special muscles at the base of each feather that push feathers outward to release trapped heat when they're on land, and an extremely high feather density among birds. Short, lance-shaped and overlapping like roof shingles, their feathers provide superb insulation in water and on land. Penguins waterproof them by using their beaks to apply an oily substance secreted from a gland at the base of their tail.

African penguins also have special glands beneath pink patches of skin near their eyes. On hot days penguins circulate more blood to these glands, which help regulate body temperature. The pinker the patch, the hotter the penguin.



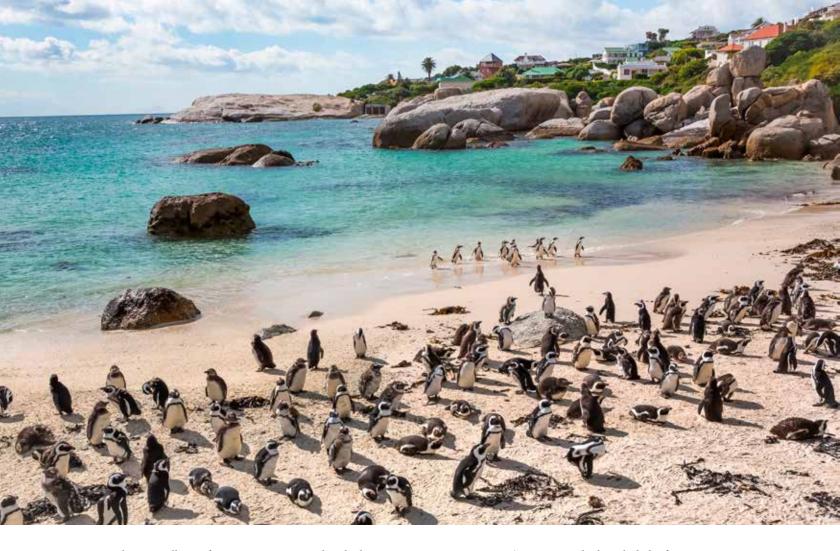
#### **Aiding an Imperiled Species**

There are 18 species of penguins, but only two of them—the emperor and Adélie—actually live in Antarctica. Penguins evolved in temperate climate zones, and today most species still inhabit ranges more temperate than polar. From banded to crested, little to large, they are spread throughout the Southern Hemisphere from the tropical Galapagos Islands to Antarctica's frigid Ross Sea.

African penguins are a banded species with a horseshoeshaped, white band of feathers around the sides of their heads and chins and a black band across their chests. They inhabit a range along Africa's southwest coast, living in large, highly social colonies on offshore islands and at three mainland beach sites—two in South Africa, one in Namibia.

Scientists theorize that the smaller beach colonies—ringed by residential housing and protected by government and nonprofit wildlife-conservation organizations (see "Diving Right In," page 5)—emerged in the 1980s as the penguins' prey population of small, shoaling fish shifted eastward. Human settlements also offer penguins protection from predators such as leopards. Eighty percent of the population, though, lives on seven small islands.

Left: The amazing adaptations that enable penguins to swim are on full display through Penguin Cove's viewing window. Above: The zoo's African penguins (left) explore their habitat, patterned after southern African shoreline terrain. Dense, overlapping feathers (right) with special muscles help the species thermoregulate on land and in water.



About 4 million African penguins existed at the beginning of the 19th century. That number plummeted to 1.5 million a century later and then to 150,000 at the turn of the 21st century. Today, only about 50,000 African penguins remain. The largest offshore colony on Dassen Island, a protected nature reserve near Cape Town, is home to half the population.

Different factors have fueled the dramatic decline. Eggs were once widely collected by people. So was guano, used by this burrowing species as a nesting material and repurposed as agricultural fertilizer. Both are now strictly prohibited. Unfortunately, such restrictions haven't reined in excessive commercial fishing for sardines, anchovies and other fish the penguins depend on for survival.

"They're having to travel and forage farther from their colonies to fish," says Nelson. "Adults are taking more time away from incubating eggs and chick-rearing and aren't able to bring back enough fish for offspring."

Oil spills—most notoriously a 400-ton spill in 2000 when the cargo ship Treasure sank off the South African coast—can also have devastating effects within a range that's so narrowly defined.

If there's a silver lining to the precarious situation, it's that past crisis-intervention efforts in South Africa's Western Cape region have been well organized and effective. And now AZA institutions are developing programs with conservationists in South Africa as part of AZA's ambitious SAFE (Saving Animals From Extinction) initiative, which included African penguins among 10 endangered species in its first-year focus. Scientists and avian-care experts are busy designing artificial nest boxes, hatching plans to track migrating and foraging patterns at sea with transponders attached to penguins and devising collaborative educational outreach models.

When you visit Penguin Cove, you'll be experiencing one of those educational outreach models in living color—even if those colors are only black and white.

In the wild, African penguins have colonized three mainland beach sites in South Africa and Namibia in addition to their offshore island range. Beach colonies are carefully monitored by conservation organizations.

> Learn More Online Dive into Ipzoo.org/penguin for more fun facts about penguins.



## **Diving Right In**

In late 2015, Assistant Lead Bird Keeper Kristin Dvorak traveled to South Africa to help rehabilitate African penguin chicks. Her trip was funded by zoo donors Mary and Bruce Feay, whose annual Feay Earthwatch Grant helps the zoo's keepers join wildlifeconservation volunteer efforts around the world.

This one, located near Cape Town, was run by the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB), a non-profit organization dedicated to seabird rehabilitation. "These chicks had been abandoned by their molting parents," says Dvorak. "When adult penguins molt they are no longer waterproof and can't swim to get fish to feed their chicks. It's unusual for penguins to molt when they are raising chicks. But the species' breeding season is changing due to environmental shifts caused by climate change."

From October 2015 to January 2016, SANCCOB staff and volunteers rescued and rehabilitated nearly 300 chicks. "My assigned area housed about 100–130 African penguin chicks that were 8–10 weeks old," says Dvorak.

Her carefully timed, daily schedule included using a syringe-like dispenser to feed the chicks nutrient-rich fish slurry and water, bringing those with respiratory issues to a nebulization chamber, and chaperoning chicks during brief paddles around a small swimming pool. The rigorous work called for rubber coveralls, neoprene arm guards and one glove.

"The glove provided protection from biting chicks while my other hand remained fish-free while feeding them," says Dvorak. "That's important because fish oils can harm their feathers."

On Thanksgiving Day, Dvorak and six other volunteers drove to Betty's Bay, site of the Stony Point Penguin Colony, one of only three land-based African penguin colonies.

"We released nine African penguins and two cormorants," says Dvorak. "Initially, the penguins didn't want to go into the ocean, but after a little encouragement they walked in and began swimming."

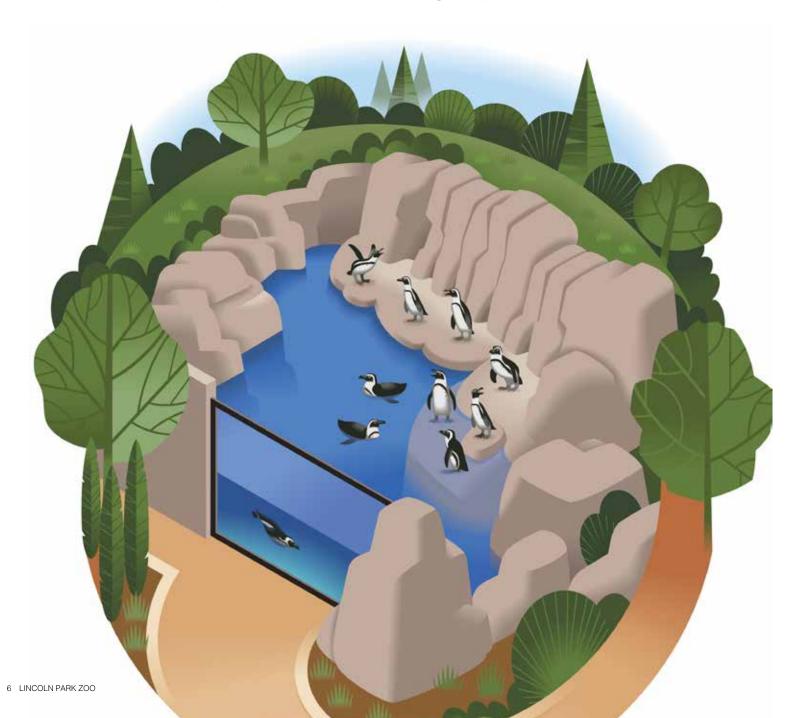
Read Kristin's full account of her experience at lpzoo.org/diving-right-in.

Assistant Lead Bird Keeper Kristin Dvorak (left) helped rehabilitate abandoned African penguin chicks through nutrient-rich feedings and swimming sessions—and released nine penguins back to the wild.

## Check Out the Cove

#### BY CRAIG KELLER

Modeled after African penguins' native habitat along the coasts of South Africa and Namibia, the Robert and Mayari Pritzker Penguin Cove immerses its cozy colony and visitors in a naturalistic, shared experience. Its split-level design includes special features that support natural behaviors—from underwater foraging to shoreline courtship displays in all seasons. Close-up views ensure visitors won't miss a waddle, dive or courtship bow. "The zoo's mission is connecting people to nature," says Hope B. McCormick Curator of Birds Sunny Nelson, "and this exhibit is a living example of that in action."





**Beachfront Property** 

The beach area features a variety of substrates for the penguins to enjoy. Artificial mats provide cushioned comfort and air flow for good foot health. Loose river rocks can be used as nest material or comfortable places to stand. The pool deck is gently sloped to simulate the lapping of water onto the beach where pebbles and stones are embedded.



The Heat is On

Radiant heat beneath the deck keeps it ice-free during winters, which get a bit cooler in Chicago than in South Africa. The extra warming helps Animal Care staff and penguins—although they're more surefooted on slick surfaces—access the deck and pool year-round.



#### **Close Encounters of the Penguin Kind**

Visitors enjoy close-up views through huge glass windows that form one side of the exhibit. The split-level perspective provides immersive views of penguins swimming underwater and socializing on land.



#### Go Fish

Fish are stored and thawed in a behind-the-scenes kitchen equipped with a freezer, cooler and food-prep area. Keepers prepare herring, anchovies, silversides, capelin, marine smelt and trout for the penguins. All of the penguins are hand-fed by zookeepers. Daily portion sizes and fish preference vary from bird to bird. Keepers carefully record feeding patterns to help zoo nutritionists fine-tune individual diets.



#### Making a Splash

You'll see every detail of swimming penguins through an expansive window with views below and above water. The pool is temperature-controlled, permitting year-round use, and equipped with special gear that circulates, skims and filters the water. That makes possible a range of enrichment supporting natural behaviors. "We can anchor artificial kelp to the bottom," says Nelson, "and we also have the option to put fish in the pool."



#### **Burrows for Babies**

Nest boxes that emulate the burrows in which wild African penguins lay their eggs are available 24/7 to breeding pairs. Fourteen are built into the rock work with narrow tubes leading to small enclosures keepers can easily manage. Rear, hatch-like doors can be left open to provide access to an off-exhibit area. "The burrows are similar to nests in their native habitat, where penguins excavate cavities," says Nelson.

## Living on the Edge

**BY JAMES SEIDLER** 

Polar bears thrive in the extremes. These powerful predators inhabit the margins of life itself, roaming the icy Arctic desert in search of prey. At more than 1,500 pounds, they can also glide gracefully through the water. They're at the top of their food chain, supported only by the increasingly fragile sea ice beneath. And in a warming world, they may find themselves running out of room.

The expansive, \$15.8 million Walter Family Arctic Tundra replicates the terrain polar bears roam in the wild. Equipped with naturalistic features, from ice caves to cool pools, the zoo's Arctic Tundra evokes the northern reaches where polar bears prowl in search of prey.

"We've learned so much about polar bears' natural history since the zoo's last habitat opened in 1982," says Curator of Mammals Mark Kamhout. "Back then the emphasis was all about water, but now we know we need plenty of land, too."

#### **Family Planning**

Zoos work together through Species Survival Plans—shared management efforts by institutions throughout the Association of Zoos and Aquariums—to ensure sustainable populations for the animals in their care. Lincoln Park Zoo's Population Management Center is at the heart of the collaborative system, with our experts analyzing family trees, available space and overall population dynamics to make recommendations on the best matches and moves. Recommendations from the Polar Bear Species Survival Plan<sup>®</sup> will determine which male and female will move into the new exhibit to best support the species.

Planning is a careful process for every species, but polar

bears represent a unique case. They're sizable, solitary and require specialized habitats. They're also a species that institutions are increasingly interested in sharing. "With climate change getting more attention, zoos are building great exhibits that are good for bear welfare and help teach about changes to their wild habitat," says Sarah Long, director of the Population Management Center.

Walter Family Arctic Tundra was designed to be divided into two separate habitats—a requirement for any institution that hopes to welcome cubs down the road. (Male polar bears do not contribute to the care of their offspring and can represent a threat to cubs.) A male will move into the habitat first, and



Left: Melting sea ice in the Arctic imperils polar bears' survival. From swimming skills (above, left) to textured foot pads (above, right) for gripping rugged terrain, the species' unique adaptations will be on display at Walter Family Arctic Tundra.

plans are in place to find him a potential mate in the coming months. The experts at the Population Management Center have already crunched the numbers to find the right match.

"To improve the age distribution and sustainability of the population as a whole, we're planning to pair two younger animals here," says Long. "We know from experience that younger bears are more likely to successfully produce offspring."

When they arrive they'll have plenty to explore in their new home.

"Polar bears are very intelligent animals, and I'm most excited about all the choices built into the new habitat," says Kamhout. "They can dig for prey in foraging pits, participate in training sessions and chase live fish in their large pool. Or they can just bask in the sun—it's all about giving them choices."

#### Cool in the Cold, from Coat to Claws

How exactly do polar bears survive in a climate that can reach -50 degrees?

Given the species' incredible insulation, polar bears actually have to worry more about overheating. Thick, layered fur keeps their body heat contained. Indeed, thermal photos of the bears on the ice reveal heat loss only near the eyes and face. Beneath the skin, a layer of fat up to 4.5 inches thick keeps core temperatures up on icy swims that can range up to 60 miles.

The big bears blend in with their snowy surroundings, which helps them hide as they hunt prey. While the fur appears white, the individual hairs are actually transparent and colorless. This



adaptation lets the hairs scatter sunlight on the treeless tundra, acting like a natural sunblock.

Miniature bumps on the bottom of the bears' feet, called papillae, help boost traction as they clamber about on the ice. Sharp claws that can reach up to 2 inches in length also promote a good grip—on ice and on the seals that make up the bulk of their diet.

#### A Miniscule Menu

Wild polar bears don't eat a very diverse diet. Their meals consist of one key ingredient: seals. Polar bears don't eat every bite, either. Instead, they focus on the energy-rich blubber and skin, leaving the rest for Arctic scavengers.

The predators locate their prey primarily via a strong sense of smell. They sniff out the holes in the ice where seals surface to breathe and hunker down to wait for a meal. When the marine mammals peek their heads out, the bears pounce, hauling more than 200 pounds of prey out of the water.

Adult polar bears need to catch between 50–75 seals a year to survive. Since hunting isn't easy, it can be a feast-or-famine lifestyle. The bears have developed some impressive gorging skills to compensate: they can eat as much as 100 pounds of blubber in a single sitting.

Seals aren't on the menu at Walter Family Arctic Tundra. Instead, our nutritionists plan alternatives with the same nutritional quality in fat, protein and calories, based on the species' digestive physiology. That includes a varied diet of meat, fish, vitamin-rich specialty "chow" and even some veggies and fruit—all appropriate for maintaining a healthy weight and body condition. Still, anyone who sees these formidable predators interacting with icy enrichment in the habitat can witness natural instincts at work. "Polar bears can be very quiet," says Kamhout. "And then they'll pounce!"

> Bear Necessities Roam over to lpzoo.org/polarbear for more fun facts.



### **Climate Change Cheat Sheet**

The same adaptations that let polar bears thrive in the cold leave them vulnerable to a warming world. Climate change is melting away the sea ice these powerful predators rely on to rest, rear cubs and hunt prey.

As our partners at Polar Bears International explain, sea ice is as important to the Arctic ecosystem as soil is to a forest. Ice provides a habitat for algae and other microorganisms that form the base of the polar food chain. These creatures are eaten by fish such as Arctic cod, which are eaten in turn by seals, whose blubber makes up the bulk of the polar bear diet.

With sea ice increasingly melting due to human-caused climate change, though, the Arctic ecosystem is losing its foundation. Why is climate change happening? In burning fossil fuels for energy, humans are producing rampant carbon dioxide emissions. This extra carbon dioxide acts like a blanket, trapping heat around the world. The changes are especially noticeable in the Arctic, where sea ice is freezing later in fall and melting earlier in spring. But rising temperatures from rampant carbon dioxide emissions will affect everyone, disrupting the ecosystems we all rely on and are all connected to.

While human actions—the excessive burning of fossil fuels—have contributed to climate change, human choices and human innovation can offer a solution for polar bears and the planet we all share. Want to do your part to protect polar bears and their wild habitat? Our friends at Polar Bears International have a number of steps you can take to help Save Our Sea Ice. See how you can make a difference at Ipzoo.org/polarbear.



## Arctic Ambassadors

Beyond caring for polar bears at the new Walter Family Arctic Tundra, Lincoln Park Zoo is also an Arctic Ambassador Center with Polar Bears International. Based in Churchill, Manitoba, this non-profit organization has worked to sustain a future for polar bears across the Arctic since 1992.

As part of the Arctic Ambassador partnership, several zoo employees have made the trip to Churchill to see polar bears in the wild—and learn how we can all help fight the threats facing the species. They share the lasting impact of their journeys below.

#### Anthony Nielsen, Lead Keeper

"When you arrive in Churchill and head out onto the tundra, the environment is nothing like you could imagine. The fall colors have arrived, and the cold wind and precipitation remind you that winter is right around the corner. You follow the outlined paths that tundra buggies follow, and you see your first polar bear of the season. The excitement is almost overwhelming.

The bears are along the shoreline of Hudson Bay, just waiting for the ice to freeze so they can start hunting seals. From that moment it makes you want to take action to protect them. To leave the place is very hard, but you're also excited to get home and share your experience with your community. Seeing polar bears here at the zoo reminds me every day that communicating isn't enough—we need to take action so we can save all Arctic species."

Allison Price, Director of Learning Experiences "Polar bears have always been in my 'top five' of favorite animals, but traveling around Churchill I was struck by the whole tundra ecosystem—how totally unlike anything else it seemed and how even in that harsh landscape there were moments of warmth. The snuggle of a mama bear and her two cubs, the playful chirps of ptarmigans (little fluffy partridges); what a beautiful contrast to the icy wind whipping my hair around my face. This contrast demonstrated to me so clearly that nature is an exercise in extremes and balances. It's our responsibility, and our privilege, as human beings to try to protect and restore that balance."

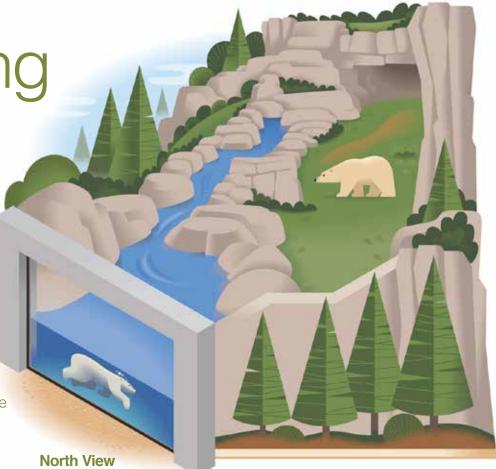
Read Anthony and Allison's Full Travel Diaries at Ipzoo.org/pbi.

Photos by Anthony Nielsen, Allison Price and Polar Bears International.

## Polar Planning

**BY JAMES SEIDLER** 

The state-of-the-art Walter Family Arctic Tundra was planned to provide the best possible home for polar bears. Incorporating our latest knowledge about this specialized species, the immersive habitat includes a number of features to encourage natural behaviors and ensure top-notch comfort and care.





#### Room to Roam

While polar bears are strong swimmers, they spend most of their time on ice or land. Walter Family Arctic Tundra features more than 8,000 square feet of rolling terrain, offering the massive predators ample space for exploration.

"We eventually plan to have remote-controlled feeders put in to encourage natural browsing behaviors," says Curator of Mammals Mark Kamhout. "Of course, they'll need to be durable!"



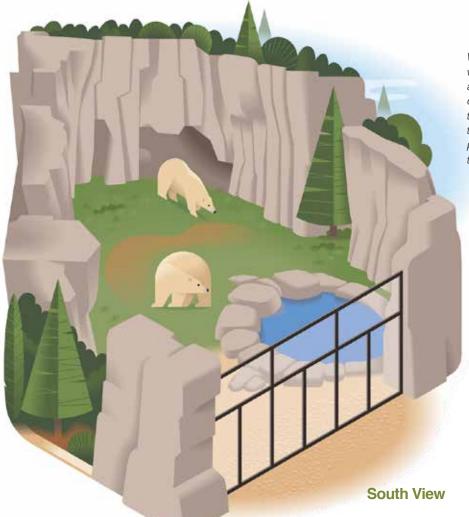
#### Two Habitats in One

Built-in dividers at the heart of Walter Family Arctic Tundra offer the ability to split the habitat in two. Separate spaces are necessary if cubs arrive down the road due to a breeding recommendation from the Polar Bear Species Survival Plan<sup>\*</sup>. "Polar bears are naturally solitary," says Kamhout, "except when a mother is caring for her cubs and when males and females are paired during mating."



#### **Dual Pools**

Pools at both ends of the habitat give our polar bears ample space to splash and swim, just as this species does in the wild. "We'll even have the ability to have live fish in the large pool to encourage natural fishing behaviors," says Kamhout.



Walter Family Arctic Tundra features a running waterfall, winding stream, pools, an ice cave, and a training wall for voluntary operant-conditioning. Blue spruce and Arctic willow contribute to the naturalistic landscape. Behind the scenes, a denning area with a plunge pool provides space for a female and potential cubs.



#### **Cool in the Cave**

How can polar bears beat the heat during Chicago summers? In addition to their behind-the-scenes dens, a frosty ice cave offers a place to stay cool...and even shares a bit of the chill with guests.

"Guests will be able to get very close to the bears," says Kamhout. "It's a great example of how the zoo helps connect people to wildlife."



#### Spotlight on Arctic Adaptations

Want a closer look at the adaptations that let polar bears thrive in the Arctic? A special training wall at the south end of Walter Family Arctic Tundra brings the predators up close for voluntary operant-conditioning. During these daily encounters, caregivers reward the bears for presenting the big paws and sharp claws that enable polar living.

"I think it's going to be remarkable for the public to see a 9.5-foot-tall polar bear working with a zookeeper in voluntary operant-conditioning sessions," says Kamhout. "The bears will demonstrate the unique features that help them thrive in the Arctic—big paws, big teeth. We'll also highlight how the bears can contribute to their own care by opening their mouths and displaying their eyes, ears and feet for inspection."



## Leap into Learning

#### BY JAMES SEIDLER

Let's clear one thing up from the start: the zoo's new, state-of-theart Learning Center isn't a classroom building. Not that there's anything wrong with classrooms. But that structured framework is a far cry from the vision for the zoo's high-tech learning hotspot.

Instead, envision 6,000 square feet of open, vibrant, modern space for students, interns, researchers and staff. Home to a hightech, multi-functional learning lab, the center will provide vital resources for encouraging lifelong connections with nature.

Imagine the possibilities. Young learners can get a first glimpse at careers in science by using zoo apps to track animal behaviors in the same manner zoo scientists do. Interns in summer learning



programs can connect lessons from the lab to guest engagement opportunities via mobile learning stations. High school-aged Conservation Ambassadors Board members can use the center as a headquarters to plan their next campaigns to enlist peers as advocates for wildlife.

"One of the things we're most excited about is how the new building can help welcome more learners into the zoo environment," says Stephanie Bohr, Director of Community Innovation and Collaboration. "The big room facilitates more unscheduled, pop-up opportunities. We really want learners to have a space to share the work they do—at the zoo, in their neighborhood and in other contexts as well."

#### **Lifelong Learners**

As Bohr suggests, the creation of the new Learning Center matches a shift in emphasis at Lincoln Park Zoo. Until recently, there was a split between the larger Education Department, which organized camps, programs, lectures and other informal learning opportunities, and the Hurvis Center, which served as an in-house incubator to develop, trial and measure innovative new programs. Recently, though, educators realized the division didn't reflect the innovative work being done across all zoo learning programs. And so, in summer 2016, our experts made the decision to unify the whole team under the shared banner of the Hurvis Center for Learning.

Supported by a significant gift from the Caerus Foundation, the unified center looks to create memorable experiences that connect people to animals and nature, inspiring and empowering them to act as stewards of local environments and the global community. That's an ambitious goal, but each element reflects a vision rooted in best practices in the field—and a belief in the transformative power of wildlife. "The word 'connect' wasn't chosen lightly," says Director of Learning Experiences Allison Price. "We know from environmental behavior-change research that facilitating connections between people and nature makes people more likely to show concern. That key step may lead to environmental behavior, the desire to do more, perceived responsibility and self-efficacy."

Beyond unifying the department's offerings—and subjecting them all to the same rigorous research and evaluation—the change from "Education" to "Learning" reflects a philosophical shift as well. "We're all really excited about the change, which much better represents what we're trying to achieve," says Bohr. "Education is very didactic and instructional and reflects a one-directional flow of information. Learning implies it will be bi-directional: participants will come to us with their own

> thoughts and motivations. That framework lets us harness everyone's capabilities and skills to solve the very complex global wildlife challenges we're facing."

#### Part of the Pride

The new Learning Center is part of the \$125 million Pride of Chicago campaign that's transforming Lincoln Park Zoo. Its completion concludes the visionary building projects at the zoo's north end that also included the state-of-the-art Robert and Mayari Pritzker Penguin Cove and Walter Family Arctic Tundra.

With these high-tech facilities now welcoming guests and learners of all ages, the campaign's focus will return to the heart of the zoo for its final phase. The first project there entails replacing the current Gateway Pavilion with a new \$8.5 million Visitor Center. Located near the zoo's East Gate, this vital, open space will guide guests of all backgrounds as they launch visits to Chicago's free zoo. Integrated technology and eager hosts will highlight daily activities, new arrivals and the breadth of Lincoln Park Zoo's mission of conservation, learning and care. Members will be a special priority, with specialized service and a dedicated lounge welcoming them to the place they do so much to support.

The capstone of The Pride of Chicago campaign will be a \$29.5 million modernization of the Kovler Lion House. The campaign will transform this historic habitat at the heart of the zoo, preserving the building's landmark character while creating new, naturalistic habitats sure to inspire connections with the zoo's animals—and commitments to saving them.

Imagine walking down the zoo's Main Mall as a pride of lions roams an African savanna spanning the entire north side of the Kovler Lion House. Cubs play in the grass and females sun themselves on the rocks as the majestic male stands watch, his mane reflecting his dominance. The final vision for the space is still being refined, but our experts plan to harness the building's historic roots while including the latest knowledge and features to promote animal welfare.

"Generations of guests have taken pride in Lincoln Park Zoo," says President and CEO Kevin Bell, "and we're committed to ensuring the zoo will be a place of pride far into the future." It's a lofty goal...one that can be advanced one learner at a time.

> The zoo's new Learning Center (opposite page, bottom) will bring pilot programs and established offerings like Conservation Camp (top) together under one roof. The initiative is part of The Pride of Chicago campaign, which includes renovated exhibits for African lions (left) at the historic Kovler Lion House.

## Green Guida

BY CRAIG KELLER

Joe Rothleutner, the zoo's new director of horticulture, is taking the zoo's gardens to new heights.

There are hundreds of species thriving throughout the zoo. Most of them aren't animals.

From the golden, summer glow of coreopsis at Nature Boardwalk at Lincoln Park Zoo to winter-thriving blue spruce and Arctic willow at Walter Family Arctic Tundra, the zoo's gardens are home to a dazzling array of plants.

Picturesque gardens along the zoo's winding pathways have been a key feature of the zoo's appeal for decades. In 2009, though, the zoo began applying the same sort of cohesive, long-term planning to the landscape that it does for managing animal populations. A garden master plan was developed. Unifying standards for fencing, brick walls, benches and curbs were initiated. Plant species were painstakingly catalogued and categorized in databases. Identification signs sprang up next to native and exotic specimens throughout zoo grounds. A staff of professional horticulturists took shape under the watch of our first director of horticulture, Brian Houck, providing expert leadership to the zoo's steadfast corps of volunteer gardeners.

Now there's a new tiller in town. After Houck transplanted himself to new soil, the zoo handed over the trowel to Director of Horticulture Joe Rothleutner. Rothleutner is an ideal leader with a strong, hands-on science background. He studied plant sciences and urban forestry at the University of Maryland as an undergraduate and earned his masters's degree in horticulture at Oregon State University, where his focus was plant breeding, genetics and biotechnology. Prior to coming to Lincoln Park Zoo, he bred and selected trees and shrubs at Morton Arboretum in west suburban Lisle.



Director of Horticulture Joe Rothleutner's oversight includes native prairie plants at Nature Boardwalk at Lincoln Park Zoo (above), new landscape designs like the Swan Overlook (left, top) and choosing plants such as hydrangea cultivars (left, bottom) for the zoo's Garden Master Plan.

Arboretums—which concentrate more on specialization and woody plants and trees—are a common rootstalk in Rothleutner's experience. "I got my first exposure to arboretums at the National Arboretum in Washington, D.C., as an intern in their tree-breeding and development lab," he says. "And both of the universities I went to also have arboretums. I dream of possibly taking us from being a botanic garden at a zoo to earning accreditation as an arboretum."

That accreditation process includes four tiers. The requirement for the first—labeling at least 25 different plant species—is fairly basic. The second tier, which is Rothleutner's immediate goal, requires demonstrating a more complex collections policy and future management plans. Defining special collections helps, and Rothleutner already has one candidate in mind. "I would love to become the leader in North American hydrangeas through the American Public Gardens Association's Plant Collections Network."

The following steps fit perfectly with the zoo's core mission. "Having learning and conservation programs take you to the third and fourth levels," Rothleutner says. "So we're going to start building more science and conservation into our gardens while still ensuring they remain really beautiful. We can tell such unique, captivating stories about plants—their relationships with people and animals and how they support the ecosystems those animals rely on."

Rothleutner hit the ground running with two recently completed garden projects: the Swan Overlook at the Hope B. McCormick Swan Pond and the Chirinko-Cohen Garden on the north side of the Harris Family Foundation Black Rhinoceros Exhibit at Regenstein African Journey.

The Swan Overlook, made possible by a generous gift from John Alexander and Emily Fisher, provides an immersive view-

ing experience. Barrier fencing used to distance guests from views of the trumpeter swans, other waterfowl and a waterfall. That's been replaced with a brick patio edged with limestone-capped walls for seating and more garden landscaping. The brick resembles that of the landmark Kovler Lion House just to the east. The patio's design also complements the brickwork of the Bolger Circle Garden at Café Brauer and the pathway to the "Dream Lady" sculpture, north of the Helen Brach Primate House. New plantings include a "Nadler Kindred Spirit" upright oak and a weeping European beech with purple leaves.

"The oak will be about 35 feet tall at maturity but stay less than 6 feet wide—a tall obelisk in the garden," says Rothleutner. "Even though both trees are deciduous, they'll add interest through winter because of their sculptural forms."

The Chirinko-Cohen Garden provides a beautiful vantage point for viewing the zoo's black rhinos. The semicircular garden had been "overrun with ditch lilies that bloom for a few weeks and then are done for the rest of the year," says Rothleutner. "There were a couple of declining trees in there as well."

The zoo's horticulturists brought the garden out further and filled the space with a colorful pastiche of hydrangeas, amsonia, Siberian bugloss, hostas, hyssop and grasses. "It's a new garden, but it will look gorgeous in a year or two," says Rothleutner. "That's the thing about gardens—they take time and they evolve."

Patience is a virtue when it comes to gardens. But Lincoln Park Zoo's visitors can be confident the zoo's new horticulture leader will continue moving the gardens forward by leaps and bounds.

## news of the zoo



#### **Prime-Time Primates**

This past August, the zoo's Lester E. Fisher Center for the Study and Conservation of Apes hosted two major international primatology conferences.

Chimpanzees in Context, held August 18–20, opened with welcoming remarks from Jane Goodall, whose pioneering field research on chimpanzees in Tanzania has involved Fisher Center support and collaboration. It was the fourth installment of the "Understanding Chimpanzees" symposia started by Goodall and colleagues in 1986. Nearly 300 experts from institutions and field sites around the world gathered to share studies on everything from chimpanzee reproduction to social learning. A grant from the Arcus Foundation enabled five scientists from Nigeria, Tanzania and Uganda to present their work.

The Joint Meeting of the International Primatological Society and the American Society of Primatologists, held August 21–27, was the largest gathering of primatologists in history. More than 1,500 experts from around the globe met at Navy Pier to discuss primate species from aye-aye to white-cheeked gibbons.

Lincoln Park Zoo scientists led presentations themselves at both conferences while simultaneously running them with the help of dedicated volunteers. "Hosting these gatherings is an honor that speaks to the zoo's deep commitment to science and the care and conservation of primates," says Fisher Center Director Steve Ross, Ph.D. "It also reflects the Fisher Center's stature as one of the world's top primatology centers."

#### **ZooMonitor Goes Global**

ZooMonitor, a mobile app developed by Lincoln Park Zoo to document animal behavior using tablet devices, is going global.

Initiated four years ago, the app empowers animal care managers to make informed decisions via real-time data analysis that enhances animal welfare. Under the guidance of Welfare Monitoring Post-Doctoral Fellow Jason Wark, Ph.D., trained volunteers and zookeepers regularly monitor a complex array of behaviors for more than 25 species at the zoo.

Now the zoo has made the app available for free at zoomonitor.org to accredited zoos, aquariums, sanctuaries, and museums—made possible in part by the Institute of Museum and Library Services and the Daniel F. and Ada L. Rice Foundation.

It's also available for free for a limited time to unaffiliated organizations and individuals, including universities and non-affiliated zoos. This widespread availability will enable a diverse group of organizations to implement routine behavioral monitoring programs and benefit the welfare of species in their care.

"Lincoln Park Zoo has collaborated with many AZA institutions to ensure ZooMonitor meets the vast and varied needs of both species and caregivers," says Wark. "It has been wildly successful in promoting animal welfare here. I look forward to witnessing its impact across the nation and beyond."

#### **Festive Happenings**

The Women's Board of Lincoln Park Zoo hosted its 39th annual Zoo Ball gala on July 15, raising more than \$1.4 million to support capital improvements for The Pride of Chicago campaign. Co-chaired by Lisa Genesen and Christine Tierney, Zoo Ball 2016: Penguins in Paradise, presented by PowerShares QQQ by Invesco, welcomed more than 900 guests for dining, dancing and dedicated support.

The Bites, Blooms & Bordeaux garden party, hosted by Emily and John Alexander on July 29, featured wine and food stations, live music and garden talks. Gather: A Farm-to-Table Dinner, held August 12 at Foreman Pavilion under the stars, treated diners to a locally sourced feast prepared by top Chicago chefs. A variety of tastes and special exhibit programming also entertained crowds at the zoo's Brew to Be Wild craft beer fest on June 17–18 and three Adults Night Out evenings in June, July and August.

Guests also flocked to the zoo's second Fall Fest on Fridays-Sundays from September 30–October 30. Rides, a pumpkin patch, corn maze, music and more provided a cornucopia of festive fun for all.

Jane Goodall (left) was among the many scientists attending zoo-hosted primatology conferences this summer. Behavioral monitoring app Zoo-Monitor (center) is now available globally. Co-chairs Christine Tierney and Lisa Genesen (right) led another successful Zoo Ball.

## wild file

#### A Star in Stripes

Stripes were in the spotlight at Antelope & Zebra Area as the zoo habitat welcomed a Grevy's zebra foal on June 18. The new arrival, a female named Halla, was the first offspring for 5-year-old dad Webster and the third for 9-year-old female Adia.

Halla's arrival came about thanks to a breeding recommendation from the Grevy's Zebra Species Survival Plan<sup>\*</sup>, a shared management effort by institutions throughout the Association of Zoos and Aquariums. Native to eastern Africa, Grevy's zebras are endangered in the wild due to hunting and habitat loss. Unlike their better-known plains zebra counterparts, Grevy's zebras don't live in permanent herds. Instead, they gather in temporary, fluid groups on the savanna, where they feed primarily on grass.

On the morning of her birth, Halla's caregivers arrived to find the fresh foal standing with mom in their habitat. Her birth wasn't a total surprise, though. Caregivers, zoo vets and our endocrinologist had been monitoring the mare's pregnancy. "It was a great way to start the day," says Curator Diane Mulkerin.

#### **Ready for Residency**

Beyond overseeing check-ups, diets, treatments and preventive care for nearly 900 species, Dr. Lester E. Fisher Director of Veterinary Medicine Kathryn Gamble, D.V.M., also mentors the next generation of zoo veterinary experts. Under Gamble's guidance, Lincoln Park Zoo hosts a three-year veterinary residency that hones the ability of already-expert veterinarians to offer worldclass care to exotic animals.

The residency, which is unique in meeting the requirements of both the American College of Zoological Medicine and European College of Zoological Medicine, welcomed its latest participant this summer: Jessica Lovstad, D.V.M. This isn't the first Lincoln Park Zoo stint for the veterinarian, who earned her degree from the University of Wisconsin-Madison in 2014. "Dr. Jessica was the zoo's inaugural ZooMed support intern back in 2009," says Gamble.

Lovstad reports that she's thrilled to be doing her residency at Lincoln Park Zoo, with hopes of becoming a diplomate of the American College of Zoological Medicine upon completing the residency. Her professional interests include internal medicine, ophthalmology and all things hooved.

#### Another Cuddle of Cubs

Last year was the year of the cub in Chicago. The city's lovable losers turned their reputation around, riding hot play into the playoffs. And red panda cubs Clark and Addison enchanted the city as they grew—first in their behind-the-scenes den and later before an adoring public—at the Kovler Lion House.

A year later, history is happily repeating. The Chicago Cubs entered the post-season with the best record in baseball. And red panda parents Leafa and Phoenix once again welcomed two cubs at the Kovler Lion House thanks to a breeding recommendation



Recent arrivals at Lincoln Park Zoo include a female Grevy's zebra foal (above) at the Antelope & Zebra Area and Chilean flamingo chicks (below) at the Waterfowl Lagoon.

from the Red Panda Species Survival Plan®.

Born June 24, the latest cubs—a male and female—were named Sheffield and Waveland by zoo supporter Sharon Zackfia, who also named last year's pair. They too spent their early months growing with mom in a behind-the-scenes den before making their debut this fall.

"We're always excited to welcome new arrivals, but this is a special case, as red pandas have been reclassified as endangered by the International Union for Conservation of Nature since last year's births," says Curator of Mammals Mark Kamhout. The shift reflects severe projected declines for red pandas in the wild due to habitat loss, poaching and disease.

#### **Healthy Hatches**

Lincoln Park Zoo welcomed a variety of chicks in summer 2016. A masked lapwing hatched in the McCormick Bird House's Free Flight Area in May, soon developing the species' distinctive wattle. Five golden-breasted starlings spent their early weeks growing in a nearby nest cavity before emerging in May and July with the same vibrant colors as mom and dad. A male snowy owl hatched at Regenstein Birds of Prey Exhibit around the same time. Other recent hatches include a black-necked stilt, emerald starling, two Bourke's parrots, a white-headed buffalo weaver and five hamerkop

chicks—a firsttime hatching for the species at the zoo.

A swan goose hatched at the Waterfowl Lagoon in June, representing a species that's native to eastern Asia, where it's vulnerable due to hunting and habitat loss. The Waterfowl Lagoon also welcomed two Chilean flamingo chicks this year. The new arrivals followed five flamingo hatches in 2015—the first in Lincoln Park Zoo's proud history.

## membership matters

#### **Penguin and Polar Bear Previews**

One of the best membership perks? Seeing new exhibits before they open to the public. Nearly 1,000 Lincoln Park Zoo members waddled over to the Robert and Mayari Pritzker Penguin Cove for a members-only sneak peek on September 30 and October 1. They flocked to the exhibit's viewing spots, including an expansive window with immersive views of penguins swimming underwater and socializing on rocky shoreline terrain.

The exclusive, two-hour events included other special programming as well. Bird keepers and educators gave chats on the African penguin colony's social behaviors and unique adaptations and conservation partnerships in the wild. Kids crafted their own penguin "nests," and everyone enjoyed free rides on the Lionel Train Adventure.

Similar programming is in place for November 11–12 members-only sneak peeks of the new Walter Family Arctic Tundra polar bear exhibit.

#### **Special ZooLights Perks for Members**

Here's another cherished member perk: Members-Only Night at ZooLights Presented By Kalahari Resorts and Conventions! This year it takes place Thursday, December 8, from 4–9 p.m. Members get exclusive access to all of ZooLights Presented By ComEd and PowerShares QQQ by Invesco—from the musical light displays to ice-sculpting demos.

We're also bringing back the much-loved Members Lounge for ZooLights. Members have exclusive access to the lower level of Park Place Café on most ZooLights nights. Exceptions include special, ticketed ZooLights events and Members-Only Night—when all of zoo grounds is your "lounge"! Check out the Members Lounge schedule at lpzoo.org, then duck in to warm up with cookies, cider and crafts.

We'll also be hosting a special reception at Regenstein Macaque Forest on Members-Only Night for loyal supporters who've been zoo members for 30 years and more. Look for your invitation in the mail—and thank you!

#### A Wild Holiday Gift

Stumped for unique holiday gift ideas? Give someone the wildest gift in town: a holiday ADOPT or even an ADOPT/membership combo package from Lincoln Park Zoo.

Choose an African penguin, polar bear or snowy owl ADOPT—including a cuddly plush, ADOPTion certificate, magnet-frame photo and fun fact sheet. You can also throw in a 1-year Individual zoo membership for even more wow factor. Membership perks include discounts on parking, events and education programs, zoo shops, restaurants and more.

ADOPTs support animal care and conservation at Chicago's free zoo, making this a gift that gives in more ways than one.

Look for our holiday ADOPT brochure in the mail, and visit lpzoo.org/ADOPT for details.





Members got a first look at the new penguin exhibit (top), and will also enjoy perks at Members-Only Night at ZooLights (bottom).



Want the latest updates on what's new at Lincoln Park Zoo, from zoo babies to upcoming events? Follow along on your favorite platform—and let us know how we're doing.



A beloved holiday tradition, **ZooLights** Presented By ComEd and PowerShares QQQ by Invesco will once again illuminate Lincoln Park Zoo with more than 2 million beautiful lights. The free, frosty fun will commence Friday, November 25, when the on switch will be flipped at a special lighting ceremony.

ZooLights will shine Friday-Sunday at first, taking place November 25-27 and December 2-4 before glowing near nightly from December 9-January 1, 2017 (it will be closed December 24 and 25). Beyond the amazing displays, guests can enjoy ice carving, rides on Lionel Train Adventure and the AT&T Endangered Species Carousel, hot drinks, happy memories and the fun of **Ice Skating** Presented By PowerShares QQQ by Invesco, which takes place once again at the Farm-in-the-Zoo.

With the opening of the **Robert and Mayari Pritzker Penguin Cove** and **Walter Family Arctic Tundra**, the holiday glow will extend to all corners of Lincoln Park Zoo. Also new this year is a special, ticketed **Holiday Market** on Tuesday, November 29. Dozens of vendors will feature unique crafts, offering a great opportunity to check everyone off your list.

The Holiday Market kicks off a series of special events at ZooLights. At **BrewLights** Presented By Louis Glunz Beer, Inc., adult guests will toast the holidays with 12 craft beer tastings on Thursday, December 1. Grown-ups will also have exclusive access to the after-hours fun with our **Adults Night Out** on Wednesday, December 7, complete with cash bars, special animal chats and free rides on the AT&T Endangered Species Carousel.

Our **Members-Only Night** Presented By Kalahari Resorts and Conventions will offer the zoo's strongest supporters exclusive access to the holiday fun on Thursday, December 8 (see more details on opposite page). Finally, the Chris White Jazz Trio will play Vince Guaraldi's "A Charlie Brown Christmas" at a special ticketed event at Café Brauer on December 15.

It's a season to celebrate, and Lincoln Park Zoo is pleased to cast a shine on your holiday memories. Join us for the fun at Chicago's free zoo!



From holiday lights to ice skating to frosty lagers, the season's events feature something for everyone.

Lincoln Park

PO Box 14903 Chicago, IL 60614 Ipzoo.org Your membership supports everything we do, from animal care to publishing Lincoln Park Zoo magazine.

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#### Monochrome for the Holidays

Holiday shopping too complex? Here are three options that are black and white: polar bear, African penguin and snowy owl ADOPTs at Lincoln Park Zoo! ADOPTs include cuddly plushes and other options. You can also add an individual membership option to your gift package. Shop at lpzoo.org/ADOPT.

#### Give Back to Chicago's Free Zoo

Your support is crucial to keeping Lincoln Park Zoo open, free and amazing 365 days a year. As 2016 winds down, you can give back to Chicago's zoo with a gift of any amount toward our Annual Fund. Take pride in knowing your contribution funds world-class conservation, care and education. Make a gift at lpzoo.org/donate.

#### Get Social with the Zoo

Get the latest updates about exhibits, events and more on our Facebook, Twitter, Instagram and YouTube channels. Be sure to share your own zoo experiences with us!

