

Lincoln Park Zoo

For Members of Lincoln Park Zoo · A Magazine of Conservation and Education · Spring 2015

One Cool Culture

Introducing Regenstein
Macaque Forest



Lincoln Park Zoo

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We'd Like to Hear from You!

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

Cover: Female Japanese macaque Nara surveys the new, state-of-the-art Regenstein Macaque Forest.

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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 www.lpzoo.org.



perspective

A Letter From President and CEO Kevin J. Bell

Snow in Every Season

With the opening of Regenstein Macaque Forest, Chicago can now look forward to snow year-round. Not the white stuff that coats the city in winter, obviously—although a bit of that might be welcome in August—but instead the amazing, all-seasons



social displays of our new eight-member snow monkey troop. These new arrivals inhabit a home that sets the standard for zoo care in the 21st century. A first look at Regenstein Macaque Forest reveals the rocks and streams of the species' native Japan. But a deeper study reveals the intricate ways in which the state-of-the-art exhibit was built around the zoo's principles of conservation, education and care.

A central hot spring gives the snow monkeys a place to warm up in winter—and showcases the resilience they're famous for in the wild. A research cube with two high-tech computer touchscreens lets zoo scientists puzzle out how the snow monkeys see the world around them. Throughout the exhibit, an extensive camera network will capture behaviors for zoo scientists to research, educators to share and visitors to marvel at, both at the zoo and in their own homes.

Japanese macaques are a complex species. Guests can expect to see both boisterous displays and shifting alliances from animals navigating a strict group hierarchy. Visitors will also bear witness to a rich curiosity, one shown through cultural behaviors ranging from soaking in hot springs to stacking stones for fun. Best of all will be enjoying how the group changes when the snow monkeys welcome hoped-for babies down the road.

You can meet the individual macaques later in this issue. They came to us from the Japan Monkey Centre, descendants of a wild population that had once been regarded as a nuisance, candidates for culling. Our partners rescued them instead, and now eight snow monkeys have arrived in Chicago, where they'll represent the cool culture of this robust species.

It's fitting that the grand opening of this much-anticipated exhibit takes place as Lincoln Park Zoo celebrates 20 years of privatization. In that time, we've revamped nearly everything the zoo has to offer, emphasizing world-class conservation and education alongside our commitment to top-notch care.

Beyond being an amazing, immersive home for snow monkeys, Regenstein Macaque Forest offers a glimpse of the future of zoos as well. Thank you for your help in making this cool vision a reality.

Kevin J. Bell
President and CEO

Regenstein Macaque Forest offers Japanese snow monkeys an immersive home for showcasing their complex societies and cool culture.





Introducing
Regenstein
Macaque
Forest

If you're coming up with the ideal Lincoln Park Zoo exhibit, what are some must-have elements? An active species? One that's equally at home in warm and cold weather? (We do live in Chicago, after all.) How about cool cultural behaviors, state-of-the-art exhibit features—and, oh yeah, ties to groundbreaking research and education programs to boot?

Add it all up, and you have Lincoln Park Zoo's newest exhibit—Regenstein Macaque Forest—which celebrates its grand opening April 2.

Stretching into the Sky

Part of a \$15.5 million transformation of the west end of the zoo, the state-of-the-art home for Japanese snow monkeys is hard to miss. Regenstein Macaque Forest—the first fully new exhibit at Lincoln Park Zoo since the Pritzker Family Children's Zoo in 2005—announces itself with three tall trunks at the zoo's west end, the high branches evoking the evergreen and deciduous forests that Japanese macaques call home.

Other features closer to ground level continue to conjure the snow monkeys' native habitat. The “forest floor” mixes open glades with plentiful nooks and crannies to offer this social species places to gather...and spaces for solitude. A running stream enhances the scenery—and provides fresh water for drinking, splashing and rinsing food.

But the most celebrated natural feature at Regenstein Macaque Forest is the central hot spring. Situated at the southern Judy and John Keller Pavilion, this pleasant pool offers the zoo's Japanese macaques the same soothing dips the species enjoys in the wild. “In bringing snow monkeys to the zoo, we knew we wanted to recreate the iconic image of them lounging in their hot springs, surrounded by snow,” says President and CEO Kevin Bell. “It's a striking reminder of how rich the natural world can be.”

Adapted for Anything

The hot spring soaks are just one of the ways that Japanese macaques are adapted for extreme living. Inhabiting the three southern islands of Japan, these medium-sized monkeys are the most northern-living non-human primates on Earth.

The species has a number of biological adaptations to help them cope with the snow that settles on their native range in

Continuing the Connection

The new exhibit's namesake donor furthers her family's legacy of support for the zoo.

Stroll around zoo grounds, pay attention to the titles of its animal houses and exhibits and you'll notice a common denominator among many of the buildings: the name Regenstein.

The family behind that name has made possible the construction of up-to-date, appropriate habitats for the care and conservation of many species at the zoo.



“To me, the most exciting aspect of the new macaque exhibit is what people can't see,” says Susan Regenstein, chair and president of the Chicago-based Regenstein Foundation, which committed \$8 million toward the habitat's construction. “The behind-the-scenes facilities supporting animal care management, training, research and so forth. The zoo deserves a lot of accolades for what they've achieved.”

So too do the Regensteins who, through their family foundation, have contributed more than \$40 million to Lincoln Park Zoo since 1970. That was when Joseph Regenstein Jr., Susan's late father, first became involved with the zoo, serving on the Lincoln Park Zoological Society's board of directors.

Over the next three decades, he played a key role in the zoo's modernization, providing the lion's share of funding for the Regenstein Large Mammal House, Regenstein Birds of Prey Exhibit and Regenstein Small Mammal-Reptile House. Sadly, he passed away in 1999 prior to the transformation of the Large Mammal House into Regenstein African Journey—completed in 2003 after Susan took over as head of the foundation.

“That was my first big hurrah,” recalls Susan, for whom the passing of the family torch engendered both pride and loss. “My father instilled a love for nature and animals in me from an early age, when we visited the zoo in my childhood. To this day, it's difficult for me to walk through Small Mammal-Reptile House—so many memories.”

Susan's philanthropic leadership has been equally impressive. The foundation helped transform the zoo's Lester E. Fisher Great Ape House into the internationally renowned Regenstein Center for African Apes in 2004 and played a key supporting role in the development of Nature Boardwalk at Lincoln Park Zoo.

Primate species—particularly gorillas and chimpanzees—hold a special place in Susan's heart. “They look into your eyes, and there's communication there,” she says. As zoo visitors come nose to nose with Japanese snow monkeys in the troop's immersive habitat, that communication will blossom into millions of memories.

by Craig Keller



The diverse niches at Regenstein Macaque Forest support everything from dips in the hot spring to excursions in the treetops. Zoo scientists and educators will be on hand to interpret it all.

winter. Compared to their more tropical counterparts, Japanese macaques have bulkier bodies, warm, hairy coats and short, stubby tails (the better to resist frostbite, scientists conjecture).

But these snow monkeys also have a range of behavioral adaptations to help them thrive in chilly weather. Beyond the hot-spring sessions, Japanese macaques are known to scout slopes cleared by avalanches to find newly exposed vegetation. They nibble bark and buds through winter and even venture into streams to find roots that remain unfrozen beneath the waterline.

“This species uses a lot of different tactics to survive,” says Curator of Primates Maureen Leahy. “Japanese macaques need to be adaptable to live in their environment.”

Not every behavior comes down to survival, though. Snow monkey troops are renowned for their unique cultural behaviors—everything from hot-spring sessions to washing food in seawater before eating it. Wild Japanese macaques have even been observed stacking stones and flossing with bits of hair, complicated behaviors befitting a complex species. Varying from troop to troop, these cultures are rooted in long-lasting female lines, with mothers passing behaviors down to their daughters through the generations.

The High-Tech Treatment

“As these behaviors show, Japanese macaques are a multifaceted, often competitive species, and we’re eager to have the opportunity to learn alongside them,” says Steve Ross, Ph.D., director of the zoo’s Lester E. Fisher Center for the Study and Conservation of Apes.

Indeed, much like the zoo’s award-winning Regenstein Center for African Apes, Regenstein Macaque Forest was built around research possibilities. Interns under the lead of new

Research Scientist Katherine Cronin, Ph.D., will use handheld devices to monitor snow monkey space use, behavior and interactions, building on the decade of work that’s occurred with chimpanzees and gorillas at Regenstein Center for African Apes.

That’s not all. Two touch-screen computer stations at the exhibit’s north end will engage the primates with a range of voluntary tasks, offering unique insight into how snow monkeys view their surroundings. Similarly, a “hobbit hole” built into the exhibit floor offers a close spot for animal observations—as well as the opportunity for researchers to trade objects with the troop, much like the token-exchange sessions that established a miniature chimpanzee economy at Regenstein Center for African Apes.

Even better, all this activity will take place in full view of the public, offering visitors unprecedented access to the combination of science, conservation and care that makes Lincoln Park Zoo so unique. A network of cameras will let zoo educators share footage in real time, even as digital signage, online games and special mobile learning stations let guests dive into deeper learning.

“Every exhibit is designed to be a world-class home for the animals,” says Bell. “But Regenstein Macaque Forest has every element of the zoo’s mission built right into it. We’re thrilled to unveil everything it has to offer.”



See Regenstein Macaque Forest come to life in our construction time-lapse video at www.lpzoo.org/magazine.



field note

Japanese Macaque *Macaca fuscata*

If the name “Japanese macaque” doesn’t immediately ring a bell, just recall any photo you’ve seen of a monkey rolling a snowball or sitting in a steaming hot spring with an ice-draped background. These iconic images reflect one of the world’s most intriguing primate species: Japanese macaques, aka snow monkeys.

With the exception of humans, Japanese macaques live further from the tropics than any other primate. The species has developed a number of adaptations for cold weather, including thick coats and short, stubby tails, which render less surface area vulnerable to frostbite.

Highly social primates, Japanese macaques live in groups dominated by family hierarchies. Status is largely inherited, with mothers passing down their positions to daughters.

Females stay in the groups of their birth while the larger males leave the troop in search of breeding opportunities.

Social behaviors within the group include sharing food, such as fruits and leaves, frequent grooming and alarm calls to warn neighbors of potential predators. As a species, macaques are known for their unique, troop-specific cultures, encompassing everything from sitting in hot springs to stacking stones.

Zoo visitors will be able to enjoy the displays—and play—as the zoo’s eight-member troop develops its own culture. And the fun is just getting started. While the snow monkeys are suited for cold weather, they’re adapted to Chicago summers as well... as you’ll soon see.

Meet the Macaques

It didn't take long for the eight members of the zoo's snow monkey troop to make themselves at home after their arrival from Japan last fall.

"They took full advantage of all the space in their behind-the-scenes enclosures right away," says Curator of Primates Maureen Leahy. "They climb to the highest areas, balance while running across branches and forage through hay or straw to find enrichment foods like sunflower seeds and raisins."

All three males and five females in the troop have begun building positive relationships with their caregivers and voluntarily participating in operant-conditioning training sessions that let them take part in their own care.

A clear social hierarchy and individual traits seem to be emerging. Leahy provides a breakdown of who's who in the troop and where they currently fit in the still-evolving hierarchy.



Akita

Male, 9 years old

"Akita seems to be assuming the role of alpha male in this troop. He is vigilant and bold, readily displacing others over preferred food sources or resting locations. He will often intervene to maintain the peace among females having a social dispute. Japanese macaques are sexually dimorphic—males are much larger than females in body size. Akita is the largest individual in the troop, weighing more than 26 pounds."



Izumi

Female, 10 years old

"Izumi is emerging as the troop's dominant female. She divides her time between Akita and another male, Miyagi, but seems to prefer resting next to and grooming the latter. Izumi forages with ease, as other females tend to get out of her way when she approaches a preferred food source."



Ono

Female, 10 years old

"Ono seemed to be a bit of a loner when she first arrived. Within a month or two, though, she'd begun to build a positive relationship with Mito, Yuki and male Kuma. She will huddle face-to-face with Mito or Yuki—sometimes they'll even sleep together like this. Ono was also the first troop member to head into the hot spring!"



Nara

Female, 10 years old

“Nara seems to be one of the most vocally communicative individuals in the troop. Nara will sometimes partner up with Izumi to assert their dominance as a “team” over females Mito and Yuki.”



Mito

Female, 9 years old

“Japanese macaques are seasonal breeders, which means the females are only receptive for breeding typically from September–January. During this time, the pink coloration on the females’ faces becomes markedly more intense. Of all the females in the troop, Mito’s face seems to be the most deeply pink.”



Miyagi

Male, 10 years old

“Miyagi spends nearly all his time in close proximity to female Izumi. Miyagi and Izumi often huddle with one another while resting, and they engage in long grooming sessions. Like Akita, Miyagi also has a robust build, weighing 25 pounds.”



Kuma

Male, 10 years old

“Kuma is the smallest male in the troop. He prefers to spend most of his resting time alone and at a distance from dominant male Akita. It’s not clear yet which females Kuma prefers the most, or vice versa, but he intermittently engages socially with Ono, Mito and/or Yuki.”



Yuki

Female, 10 years old

“Yuki is the smallest female, weighing about 12.5 pounds. She is often observed negotiating her social status with female Mito. Yuki will mount Mito, often completely climbing onto her back, in an effort to display her dominance. Shortly thereafter, though, Mito will do the same to her, so it seems they are still working things out.”

State-of-the-Art Exhibit

Regenstein Macaque Forest is packed with features to encourage our snow monkeys to show off their natural behaviors and cool culture.

Nice Niches

Rockwork, fallen trees and naturalistic topography ensure macaques have plenty of living spaces for hanging out—and getting away from each other, if need be.



Hot Spring

Warm and welcoming, the exhibit's heated pool offers a comfy place to wait out winter. It replicates the natural hot springs that wild snow monkeys soak in.



“Hobbit Hole”

A research tunnel running beneath the exhibit lets zoo scientists observe the macaque troop without disturbing them. Reinforced mesh screens offer the opportunity to hand out puzzles—and potential rewards.





Feeding Lanterns

Designed to look like Japanese lanterns, these portable feeding stations can be moved throughout the exhibit to spur natural foraging behaviors. They can even be programmed to release food randomly, mimicking the wild!



Totally Temperate

Select exhibit features help the macaques stay cozy, regardless of the season. Hot rocks offer a warm seat in winter while ample overhangs help the primates stay cool in the shade.



Research Cubes

Two booths will let snow monkeys voluntarily take part in research involving touch-screen computers. Guests can watch the macaques at their tasks... and a "smart glass" panel gives the monkeys the option of checking out each other's work.



Mountain Stream

A seasonal running stream provides a great place to grab a drink, cool off with a dip or even practice the food-washing behavior that's passed down in some Japanese macaque troops.

Science in Session

BY JAMES SEIDLER

The zoo's effort to explore the minds of Japanese macaques will start simply enough. A tasty portion of fruit will serve as a welcome banner, convincing the snow monkeys at Regenstein Macaque Forest that the exhibit's two cognition cubes are a nice place to hang out.

The primates will receive further rewards from there for simply engaging the two touch-screen computers installed within the research area. As their comfort builds, the voluntary tasks will become more complicated. The process will culminate, zoo scientists hope, in a kind of communication where members of the macaque troop can choose symbols to indicate their mood.

"But it all starts with getting them excited to go in the booth," says Research Scientist Katherine Cronin, Ph.D., who arrived in December to lead the research program at Regenstein Macaque Forest. "Once we reinforce that it's a fun place, we can do all sorts of projects."



A Firm Foundation

Like the groundbreaking Regenstein Center for African Apes before it, Regenstein Macaque Forest was literally built for research. In addition to the cognition cube (and its nearby observation area), the high-tech facility also has a "hobbit hole" where scientists can observe the animals—and exchange objects with them—at ground level as well as a network of 18 cameras that makes it possible to monitor snow monkey behavior in every corner of the exhibit.

In starting the Japanese macaque projects, Cronin can harness a legacy of expertise built by the zoo's Lester E. Fisher Center for the Study and Conservation of Apes. For more than a decade, Fisher Center scientists led by Director Steve Ross, Ph.D., have worked with the zoo's gorillas and chimpanzees, compiling detailed records of ape behavior, testing their minds with tool-use and token-exchange studies and guiding them through elaborate symbol-sequencing exercises using touch-screen computers. "It's been fascinating to work so closely with the zoo's apes," says Ross. "Now we have an opportunity to see what Japanese macaques are cognitively capable of."

Of course, embarking on a research program with a new species isn't as simple as carting the existing tools across the zoo. "We had to adapt the behaviors we record to be more macaque-specific," says Cronin, "incorporating their different facial expressions, for instance." The scientists also had to brainstorm how to monitor a much larger outdoor exhibit, one that offers the snow monkeys plenty of places to hide. "Between the cameras and what we can observe from the viewing shelter, we'll have plenty to measure and share," says Cronin.

Minding the Macaques

Why study macaques anyway? In answering the question, it's important to note that Japanese macaques are just one of the 22 macaque species that range from Gibraltar to Japan. These different species showcase a variety of social structures—everything from peaceful, egalitarian societies to competitive troops with strict hierarchies.

Japanese macaques fall on the competitive side. Their social groups blend incoming males with established female family lines, spurring some very visible displays as individuals jockey for position. This inclination toward competition raises some interesting possibilities for study, says Cronin. "Are others in the troops friends or foes?" she says. "Who do they choose to cooperate with? The competitive dynamic means there's a lot to learn from observing how they interact with one another."

Research Scientist Katherine Cronin, Ph.D., will lead the research program at Regenstein Macaque Forest. Cronin returned to the zoo after more than a decade away to oversee projects ranging from behavioral monitoring to touch-screen computer sessions.



Half Full or Half Empty?

That's all well and good, you may say, but how does it add up to the snow monkeys signaling their moods on a touch-screen computer?

That part will take time, obviously. But ambiguous symbols are the secret, Cronin explains. Imagine, for example, that you familiarize the snow monkeys with two very clear symbols. A full glass, for instance, could spur a good outcome, as expressed by a tasty reward, while an empty glass has a negative association: no reward.

Then, occasionally, you give the animals a third option: a half-full glass. Research with other species has suggested that individuals in a positive mood are likely to engage it as a positive symbol while individuals in a bad mood are likely to perceive it as negative and avoid it.

Once the pattern's established, it's possible to use the symbol as a shorthand to interpret how the macaques react to a change in their surroundings. Cold weather? New food? These are things that can be summed up by the glass being half full or half empty.

It's a long way coming, but research at Regenstein Macaque Forest will offer insight into how Japanese macaques think—and a possible avenue for improving their care. It's this combination that made Cronin rejoin Lincoln Park Zoo after more than a decade away studying primates around the world.

"The zoo is very invested in learning how to provide the best possible environment for the animals we care for," the scientist says. "To have that mission combined with a very elegant research facility is a perfect situation."



See how Katherine and her research team are getting ready to study snow monkeys with a video at www.lpzoo.org/magazine!



Island Inhabitants

BY JAMES SEIDLER

Islands are incubators for unique wildlife. That's not to knock other ecosystems. Prides of lions rose up from the sprawling grasslands of Africa, for instance, and herds of buffalo once thundered across the American plains.

But there's a reason Charles Darwin focused on the finches of the Galapagos. Isolation and time can spur some significant changes, making islands uniquely suited for giving us species unlike those anywhere else.

The snow monkeys of Regenstein Macaque Forest are one example, with bodies adapted for the cold and troops distinguished by their one-of-a-kind cultures. Beyond the new arrivals, though, Lincoln Park Zoo has a whole range of island inhabitants worth making the trip to visit.

Meet Me in Madagascar

Located 250 miles off the southeastern coast of Africa, the island of Madagascar is the last major landmass before Sri Lanka surfaces on the other side of the Indian Ocean. Its isolation isn't short-lived, either. The island has been set apart since splitting off from India nearly 90 million years ago. The long timespan has resulted in one of the most unique ecosystems on Earth, with 90 percent of Madagascar's wildlife found nowhere else.

Lemurs are perhaps the best-known Madagascar species; these diverse primates fill a variety of niches throughout the island. At the zoo the group is represented by the crowned lemur family at the Helen Brach Primate House. Mom Tucker, dad Sokkwi, older brothers Azizi and Nuru and youngster Sava, who will turn 1 in April, share the building's southernmost exhibit.

Named for the crown-shaped pattern on their brow, crowned lemurs are found in the northernmost part of Madagascar, where they feed on fruits, leaves and the occasional insect. At the zoo, you can often see the lemurs bonding with shared grooming sessions. "Their lower teeth are even fused into a special dental comb that helps clean the fur," says Curator of Primates Maureen Leahy.

The lemurs may be the most notable species, but they aren't the only Madagascar natives at the zoo. Regenstein African Journey greets guests with the skin-crawling sight—and sound—of Madagascar hissing cockroaches. Regenstein Small Mammal-Reptile House has a number of animals from the island as well, including Madagascar tree boas, Dumeril's ground boas and spider tortoises. Beyond being critically endangered, that last species is among the smallest known land turtles, topping out at 6 inches in length.

Solomon Species

The Solomon Islands chain, located east of Papua New Guinea in the Pacific Ocean, has its own one-of-a-kind wildlife,

including the prehensile-tailed skink that makes its home at Regenstein Small Mammal-Reptile House. This nocturnal species spends much of its life in the treetops, using sharp claws to climb up to the leaves that compose its diet.

The building's Solomon Island leaf frog is also native to the region. The species' brown, bumpy skin helps it blend in among the leaves of its forest home. Also found in the leaf litter are the species' eggs, which hatch tiny, fully formed frogs. "Most amphibians go through an aquatic tadpole stage after hatching, but this species skips that entirely," says Mulkerin.

Gone from Guam

Two species from the remote Pacific island of Guam make their home at Lincoln Park Zoo: the Guam rail and the Guam Micronesian kingfisher. And while these tropical birds have a number of distinguishing traits, they share one distressing common characteristic: both are extinct in the wild.

Both species' plights are rooted in the arrival of the brown tree snake. Native to Papua New Guinea, this predatory species came to Guam as a stowaway in the wake of World War II. As often happens, the new resident disrupted the delicate balance of a closed-off island ecosystem. The rails, which had evolved to be both flightless and ground nesting in the absence of predators, were easy prey for the new arrival. The kingfishers are a flying species, but they—and their eggs and chicks—were also decimated by the new species.

"Zoos and other conservation partners have been the last refuge for these animals," says Hope B. McCormick Curator of Birds Sunny Nelson. Indeed, Lincoln Park Zoo has teamed up with peers across North America to rebuild sustainable populations for these birds through scientifically managed Species Survival Plans®.

Vice President of Animal Care and Education Megan Ross, Ph.D., has even made the trip to Guam to help plan the species' future—and release birds to an experimental population on the nearby island of Rota. "All the Guam rails that exist today are descended from just 10 birds," she says. "A lot of work remains, but it's amazing to see the species edge back from the brink."



Madagascar

Guam

Solomon Islands



Island species from around the world have found a refuge at Lincoln Park Zoo.

The Cold-Weather Crew

BY CRAIG KELLER

Watertight Seal

Unlike their counterparts in the wild, the zoo's three male harbor seals—Storm, Bishop and Gambit—don't have to worry too much about thermoregulation to maintain their 100°F core internal temperatures.

"Their pool is heated," says Curator of Mammals Mark Kamhout. "That's why you see it steaming on cold days. We monitor it between 45 and 75 degrees and usually keep it right in the middle of that range."

Specialized fur coats and a layer of blubber keep these marine mammals well insulated in the less predictable climates of the northern coastal areas of the Pacific and Atlantic Oceans. On top, sebaceous glands in the skin secrete an oil that waterproofs their fur, which consists of short, thick guard hairs and fine, dense underhair. But the blubber below is an even more impressive adaptation.

Harbor seals store energy in this vitamin- and protein-rich body fat, metabolizing it when feeding, breeding or evading hungry sharks. It also gives these agile swimmers extra buoyancy. Seals can constrict the network of blood vessels covering the blubber to reduce blood flow, improving the blubber's efficiency as an insulator against heat loss during cold, deep-water dives.

Blubber provides a heat gradient from the seal's body core

to its skin. The adaptation lets the skin be the same temperature as the water while the core remains 100°F.

Pallas' Guard

They may look like docile, puffy cousins of your tabby, but domesticated house cats aren't half as hardy as Pallas' cats. These small felines, native to cold, arid, upland habitat across central Asia, make up for their diminutive size with aggressive demeanors and thick fur coats that bristle like pincushions when their owners get feisty.

"They actually have a couple coats," says Kamhout. "An undergarment coat and an outer layer of hairs that provides an initial barrier to wind and rain."

The solitary species, named for 18th-century German zoologist Peter Pallas, has longer hair on its belly to protect against snow as well as a flattened head with small, low-set ears.

Those are helpful adaptations for avoiding predators and ambushing pikas and other small prey on open, rocky steppes, where Pallas' cats seek out small caves, crevices and abandoned burrows. The zoo's two male Pallas' cats, Buddy and Dude, do likewise during cold Chicago winters by curling up in recessed sections of their outdoor yard's rock wall at the Kovler Lion House. And they have their own versions of "caves" too.



Snow monkeys are famously tolerant of chilly temps, but they aren't the only cold-hardy species at Lincoln Park Zoo.

“They have plastic kennels that blend into the exhibit,” says Kamhout. “They do well in cold weather, but they can also head inside any time they want.”

Visitors often fail to see these secretive masters of camouflage even when they are outside. Buddy and Dude blend into wintry environs with frosted gray coats that redden slightly to ochre when plants are blooming in spring.

A little pruning helps at this time of year, though.

“We give them a nice brushing when they have their annual physicals in late spring,” says Kamhout.

All-Weather Feathers

Snowy owls deliver mail to wizards in Harry Potter's world, but the real deals have some impressive powers of their own.

“We've never taken them inside,” says Zoological Manager Andy Van Laan, referring to Freya and Stanley, the breeding pair of snowy owls at Regenstein Birds of Prey Exhibit. “Whenever it's turned extremely cold in winter they're among the only animals who stay outside, along with the bald eagle and the ducks and swans at the Hope B. McCormick Swan Pond.”

It's not that they don't have the option to head indoors—they simply don't need to thanks to a basic adaptation many birds with thick plumage possess: lots of feathers.

“A lot of people believe birds are frail, which is untrue,” says Van Laan. “Feathers are nature's best insulator, and the current thinking among many ornithologists is that feathers evolved as insulation first.”

Snowy owls possess dense coats of thick, white feathers that extend all the way down to their talons to provide insulation from the cold. They're an Arctic species native to Alaska, Greenland, Canada, Scandinavia and Russia. During the winter, though, they venture further south in search of prey.

Usually that's not as far south as Chicago. But over the past two winters, local birders were fortunate to see this migratory species during irruption years, which take place irregularly about every four years when food becomes scarce further north. Within the city's borders, snowy owls found a welcome winter home in the woody shoreline area near Montrose Harbor.

Big blubber lets harbor seals thrive in icy waters while thick fur and feathers insulate Pallas' cats and snowy owls respectively.





Spring Awakening

BY CRAIG KELLER

Look for exciting changes this season, from hot-pink tulips to a new backdrop for a classic sculpture.

Petaled Prelude

The floral fireworks of this summer's annuals won't dazzle until at least mid-May, but from late April to early May tulips will provide a prelude to the season's striking color palette: hot pink and bright orange.

Look for the sprouting bulbs in front of the East Gate, in a new flower bed around Eadie Levy's Landmark Café, among the plantings at Lionel Train Adventure and—in a perfect fusion of feathers and petals—alongside the Chilean flamingo exhibit at the Waterfowl Lagoon.

Flower lovers can also expect a sea of yellow to emerge a bit earlier in March. The zoo's horticulturists and volunteer gardeners planted about 10,000 daffodils across zoo grounds in the past two years, adding up to a spectacular first display.

The Little Garden That Could

The most obvious attraction at Lionel Train Adventure, which debuted last fall, is its colorful train cars, lovingly crafted in the style of an old-fashioned steam locomotive. But the ride's surrounding landscape—designed by Seattle-based Portico Group in consultation with zoo horticulturists—contains an impressive garden that will bloom for the first time this season.

Evoking a meadowed woodland, the garden features large white birches around the station and sweeps of plants—garden phlox, autumn moor grass, lily turf—rolling across the gully.

"We're also excited about the onions planted down the gully," says Brian Houck, the zoo's director of horticulture. "High impact, low care, naturalized. All these plants fit the preferred plant palette we've developed through our garden master plan over the last five years."

That means selecting plants that can handle some rabbit damage and wear and tear, both sun and shade, various watering schedules and different soil types—and look good throughout the seasons with minimal maintenance.

A Fairy Tale Finish

The Eugene Field Memorial—a 1922 bronze sculpture by Edward McCartan popularly known as "Dream Lady"—depicts an angel sprinkling the sand of dreams over two sleeping children. Last fall, it became even more calming with the addition of a stone water wall and leafy gardens flanking the pathway leading to its secluded site on the north end of the Helen Brach Primate House. The enhancements were made possible by a generous gift from



Lincoln Park Zoo Trustee John Alexander and his wife, Emily

The water wall, constructed with embedded black stones imported from Mexico, rests on a slope behind the sculpture, unobtrusively highlighting its chocolate-brown patina. From the head of the path it appears as high as the Dream Lady's waist, but it then rises as one approaches, filling the viewer's field of vision. The protruding stones are designed to create flurries of sound and movement as water cascades over them.

"Those bumps and imperfections are going to make the water splash, foam and dance a little bit," says Houck.

The long, rectangular garden areas on both sides of the path are framed with boxwood hedges, pachysandra, grasses and hydrangeas. Those elements provide textural interest year-round and are accented with eight crabapple trees as well as star magnolias that—like tiny versions of the Dream Lady's wings—bloom in spring with multipetaled, white, floppy, fragrant flowers.

The revitalized garden space also includes two new stone benches with scroll-patterned pedestals that match the two original benches next to the sculpture.

"This has been a reflective, intimate area for years," says Houck. "We are excited for it to live up to its potential."

Hot pink will anchor the season's garden palette, and the much-loved "Dream Lady" sculpture received a rich new backdrop.



Field of Dreams

Learn more about the history of Dream Lady and the man it memorializes—19th century Chicago newspaper columnist and poet Eugene Field—at www.lpzoo.org/magazine.

news of the zoo



Guests can try their hands at crafting special treats with our new Animal Enrichment Workshops. The Auxiliary Board of Lincoln Park Zoo celebrated 30 years of connecting visitors with wildlife, and ZooLights Presented by ComEd and PNC Bank had a record-setting season.

Prepping the Perfect Piñata

Why put hours of work into something that, in a best-case scenario, is going to be sniffed at, stomped on and chewed to bits? If you're a member of the zoo's Volunteer Enrichment Group, you're happy to spend the time crafting edible objects to engage animals...and create fun memories for guests too!

The 20-member team, led by creative liaison Theresa Pasquarella, exercises their craft every Saturday at the Antelope & Zebra Area. Greatest hits for this crew of committed zoo volunteers includes gobbled-up globes for Earth Day, chewable Chicago landmarks for the city's 150th anniversary and a rhino-sized cake, complete with 9-foot-tall "candle," to mark the first birthday of baby King.

This spring, visitors can exercise their own creativity with a series of Animal Enrichment workshops. Participants will pair with an educator to hear how enrichment encourages natural behaviors throughout the zoo, then craft their own piñata or willow ball to spur a bit of wild play. The results may not match the scale of the Volunteer Enrichment Group's efforts, but they'll provide fun for the animals nonetheless.

Auxiliary Anniversary

The Auxiliary Board of Lincoln Park Zoo has hosted a number of big bashes over the years, everything from posh spring fundraiser Zoo-ology to the kid-and-candy crazed Spooky Zoo Spectacular. But on November 20, the Auxiliary Board was honored with their own event, a party celebrating the 30th anniversary of this group of young professionals committed to supporting Chicago's free zoo.

President and CEO Kevin Bell joined several "generations" of members, including current President John M. Casper, to mark the milestone. Since its 1984 founding, the Auxiliary Board has raised more than \$6 million for the zoo over the years, supporting everything from the Farm-in-the-Zoo to conservation projects led by zoo scientists around the globe. Lincoln Park Zoo has benefitted greatly from their energy and commitment.

"Nothing" Matters

Looking at nothing isn't always at the top of the to-do list, but it is a big help for the biologists in the zoo's Urban Wildlife Institute. That's because the roughly 100 camera traps zoo scientists have deployed throughout the Chicago area to chronicle local wildlife often turn up exactly that: nothing.

Falling leaves and windswept vegetation can activate the laser-triggered cameras, producing a number of animal-free images. It's a natural obstacle for this kind of research, one that can eat up a lot of time for scientists evaluating more than 1 million images from 17 field seasons.

But if a lot of people share the work, well, then you have www.chicagowildlifewatch.org, the citizen-science project developed in partnership with the Adler Planetarium. Since the site launched in September, local wildlife lovers have tagged more than 400,000 photos from the Urban Wildlife Biodiversity Monitoring Project. Of that number, nearly 70 percent lacked wildlife in the frame. But the photos that did captured a range of native species, everything from common gray squirrels to red foxes, muskrats and mink.

"It would have taken us nearly three years to sort those photos ourselves, so we're really grateful to have so many people helping," says Urban Wildlife Institute Director Seth Magle, Ph.D. The scientists still have plenty of photos to go, so visit www.chicagowildlifewatch.org to lend a hand!

ZooLights Stays on Track

Record-setting. That's a simple description for this year's ZooLights Presented by ComEd and PNC Bank as warm weather, happy visitors and the glow of 2 million lights added up to an unprecedented 502,000 guests for the seasonal spectacular. This year's lights started shining November 28 and were good to glow until January 4. Guests watched carvers from Nadeau Ice Sculpture shape frozen rhinos, marveled at displays designed by Illuminight Holiday Lighting and took rides on the new Lionel Train Adventure, which first opened its rails in October.

wild file

New Cats in Town

Just as temperatures began to drop last year, the Kovler Lion House welcomed two new big cats who are well adapted to cold weather.

Pahstrel, a 14-year-old Amur tiger, arrived in November from Como Park Zoo in Saint Paul, Minnesota—a transfer recommended by the Amur Tiger Species Survival Plan®. The elderly feline shares indoor and outdoor exhibit space with geriatric female Molly, albeit at different times. The two will not be introduced to each other—Amur tigers lead solitary lives—although the two are aware of each other's presence and sometimes vocalize to communicate.

“Pahstrel is a very calm cat and a little shy,” says Kovler Lion House Lead Keeper Anthony Nielsen. “She loves enrichment. Boomer balls are her favorite, and we also give her meaty bones inside boxes that she rips apart.”

Taza, a 1-year-old male snow leopard, arrived from Memphis Zoo in November as part of a recommendation by the Snow Leopard Species Survival Plan®. The curious, active youngster has been busy exploring his outdoor yard, showing a lot of interest in nearby squirrels and birds and the exhibit's elevated rock ledges.

“He even climbed up a large tree in his yard so he could watch the birds in the nearby Waterfowl Lagoon,” says Nielsen.

Cub Report

Meanwhile, at the Pritzker Family Children's Zoo, a young male black bear named Birch is being integrated into the woody habitat where adult males Papa and Katai have lived for many years. (The solitary-minded bears generally alternate use of the outdoor exhibit.)

The playful youngster enjoys all sorts of enrichment, from logs to Kong toys. “Pretty much anything he can pick up, throw around, chase after or wrestle with,” reports Curator Diane Mulkerin. At the time of his first birthday on January 27 the growing cub weighed 125 pounds, although he'll eventually weigh 400–500 pounds.

Notes from the Underground

It doesn't look like much now—piles of concrete rubble and rebar amid mounds of dirt. But the future site of the Walter Family Arctic Tundra and Robert and Mayari Pritzker Penguin Cove exhibits in the northeast corner of the zoo is moving along. Cold winter weather put the demolition of the former McCormick Bear Habitat on hold. Demolition will resume and finish in March, allowing the first phase of construction—underground utilities—to commence.

The \$22 million project, covering 45,000 square feet, will bring immersive, new homes for polar bears and African penguins in 2016.

Pharma Foray

Two of the zoo's veterinary physicians are bound for Barcelona. Not for tapas, cava and Gaudi, but to talk about drug prescrip-



Amur tiger Pastrel, snow leopard Taza and black bear Birch are among the zoo's newest arrivals.

tions for rhinos.

Kathryn Gamble, D.V.M., the zoo's Dr. Lester E. Fisher Director of Veterinary Medicine, and John Flanders, D.V.M., who's completing his residency at the zoo, were invited by the European Association of Zoo and Wildlife Veterinarians to speak at the International Conference on Diseases of Zoo and Wild Animals taking place May 13–16 in Barcelona.

In her keynote address, Gamble will address the logistics of pharmacology in the treatment of exotic animal species. Many species in North American and European zoos have not undergone clinical studies to develop collaborative, profession-wide models for the appropriate dosages and efficacy of drugs.

Gamble is one of a few zoo veterinarians internationally who has specialized in pharmacokinetics—how a drug is processed as it is absorbed, distributed, metabolized and excreted from a body. Flanders, acting on a research proposal she'd been considering, initiated a research study two years ago on the pharmacology of arthritis treatments for black rhinos. He will share some of his findings following Gamble's presentation, adding to the big body of knowledge for this endangered species.



Rx for Rhinos

How do you write a prescription for a massive megavertebrate? Read more about the zoo's black rhino pharmacology study at www.lpzoo.org/magazine!

calendar



Spring fun at the zoo will include our family-focused Easter Egg-Stravaganza, chic Zoo-ologie fundraiser and relaxing Beer Fest.

Spring Into Action at the Zoo

As the daffodils and tulips bloom, so does a spring season of diverse events at the zoo. Get a jump start on the fun at our annual Easter Egg-Stravaganza on Saturday, April 4. This family-friendly holiday weekend celebration (a sell-out last year) features an egg hunt, visits with the Easter Bunny, tasty treats, craft-making activities and egg-citing encounters with zoo animals.

Be sure to carve out a place on your calendar for Nature in Motion: Sculpture at Lincoln Park Zoo. The zoo's first-ever juried sculpture exhibition will feature large-scale sculptures throughout the zoo from early May through October. Participating artists will display works representing nature in various forms, styles and media. Guided tours of the artwork will be given throughout the show's run.

The sculptures may stay put, but guests will certainly be moving at Zoo-ologie, the flagship fundraiser of the zoo's Auxiliary Board. Taking their cue from the colorful faces of snow monkeys at the new Regenstein Macaque Forest, organizers are throwing a "macaqueserade" for this upscale cocktail and dance party on Saturday, May 9.

Masks won't be needed for this year's United Run for the Zoo on June 7—although many participants in the USATF-certified chip-timed race do deck out their running apparel with animal-inspired touches. Last year's 10K and 5K races, 5K fun walk and Safari Stampede mini-obstacle course for kids all sold out, so be sure to register early.

Finally, you can chase all that down with some thirst-quenching specialty ales and lagers at the Lincoln Park Zoo Beer Fest we're brewing up June 13. It's just a hops, skip and a jump away!

Upcoming Events

Saturday, April 4
Easter Egg-Stravaganza

Sunday, June 7
United Run for the Zoo

Thursday, April 23
Wine & Wildlife: Designing a Home for Snow Monkeys

Saturday, June 13
Lincoln Park Zoo Beer Fest

Saturday, May 9
Zoo-ologie

See the full calendar at www.lpzoo.org/calendar.

membership matters

Member Sneak Peek for Regenstein Macaque Forest

Featuring everything from a hot spring to a “hobbit hole,” the zoo’s newest state-of-the-art exhibit has its grand opening April 2! That won’t be the first chance for members to check out everything Regenstein Macaque Forest has to offer, though. Zoo supporters enjoyed two opportunities to explore the new home for Japanese snow monkeys before it was unveiled to the public.

Members joined us Friday, March 13 and Saturday, March 14 for expert introductions to Regenstein Macaque Forest. Attendees learned about Japanese macaques’ amazing adaptations and cool culture. They talked with some of the experts who will study how the monkeys “see” the world around them. Best of all, members had the pleasure of knowing their support played a key role in making it all possible.

Your Time to Shine

ZooLights Presented by ComEd and PNC Bank is always spectacular, but as this season’s record-setting attendance showed us, it’s rarely slow. On December 4, though, zoo supporters had the spectacle all to themselves for our second annual Members-Only Night at ZooLights.

More than 5,000 zoo members and their guests enjoyed dancing lights and glowing ornaments along with free ice skating at the Farm-in-the-Zoo and complimentary rides on the AT&T Endangered Species Carousel and Lionel Train Adventure. The free seasonal celebration was just another way to highlight how much we appreciate your support.

Save the Date for SuperZooPicnic

Dreaming of summer already? We can’t blame you, especially when you factor in the excitement of SuperZooPicnic, our annual members-only party! This year’s event, “Monkey See, Monkey Do,” will run from 5–8:30 p.m., meaning guests will have an extra hour to enjoy the animal chats, free rides and activities for kids and adults alike. SuperZooPicnic takes place June 19; learn more and get your tickets at www.lpzoo.org.

Follow Us Online!



Lincoln Park Zoo magazine isn’t the only way to stay up to date on the zoo. Connect with us on Facebook, Twitter, YouTube and the zoo blogs at www.lpzoo.org. New arrivals, special events, field reports by zoo scientists—they’re all online.



Members enjoyed an exclusive sneak peek at Regenstein Macaque Forest and will soon share the summer fun of SuperZooPicnic!

Set Off on a Zoo Safari Tour

Safari-level members and above can enjoy an inside view of the zoo with these special guided tours. All tours take place at 10 a.m. They fill up fast, so register today!

Saturday, April 25	Saving Species—Primates Adults Only
Sunday, April 26	Step into Africa Family Friendly
Saturday, May 23	Choose Your Own Safari Family Friendly
Sunday, May 24	Step into Africa Adults Only
Saturday, June 27	History and Architecture Adults Only
Sunday, June 28	Zoo Detectives Family Friendly
Saturday, July 18	Choose Your Own Safari Family Friendly
Sunday, July 19	Saving Species—Primates Adults Only
Saturday, August 22	History and Architecture Adults Only
Sunday, August 23	Zoo Detectives Family Friendly



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Meet the Macaques

Meet the zoo's most-anticipated arrivals, a troop of Japanese snow monkeys, as we celebrate the grand opening of Regenstein Macaque Forest on April 2! Learn more inside this issue.

Take One Home With You!

The thrill of seeing Japanese macaques doesn't have to end when you head home from Regenstein Macaque Forest. Visit www.lpzoo.org/ADOPT to get a cuddly plush snow monkey. It's just part of a special ADOPT package that lets you support care for this fascinating primate species.

A Shopping List for Macaques

Want to see the snow monkeys munching on nutritious treats and playing with enrichment items you provide? Your wish is our command. Just shop our Japanese macaque Wish List at www.lpzoo.org/wishlist.

Monkeying Around on Social Media

Macaques are social animals—if you are too, be sure to get all our updates on the new troop by following Lincoln Park Zoo on Facebook and Twitter!

