

Connect

SEPTEMBER 2015

A publication of the Association of Zoos & Aquariums

Growing Our Own

Cultivating the Next Generation
of Institutional Leaders

CHARTING THE COURSE TO SUCCESS
The Professional Development Puzzle

A FOCUS ON ANIMAL WELFARE
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BY EMILY SOHN



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Coming Together

As my year as Chair of the Association of Zoos and Aquariums (AZA) draws to a close, I wanted to thank everyone who has played a part in making this a remarkable and rewarding experience. The AZA-accredited aquarium and zoo community is coming together in profound ways that will put us in a strong position to meet the challenges in the years ahead.

2015 saw the launch of SAFE: Saving Animals From Extinction, an ambitious effort to grow the conservation impact of our community. AZA also launched the Zoo and Aquarium All Hazards Preparedness, Response and Recover Center (ZAHP Fusion Center). This USDA-funded Fusion Center will be a conduit for dissemination of information to the managed wildlife community on the five critical national preparedness mission areas: prevention, protection, mitigation, response and recovery. In addition, AZA's Executive Leadership Development Program is providing critical training for the next generation of aquarium and zoo leaders.



By no means a comprehensive list of our recent achievements, these three examples illustrate the forward-looking nature of our community and our Association. In today's world, one constant we can all rely on is change. We must keep building on our strengths and have the vision and will to prepare ourselves to meet challenges posed by the fluid nature of the world we live in.

As I complete my year as Chair, I do so with a real sense of excitement and confidence. Our next chair of the Board is Steve Burns, director of Zoo Boise, a talented and passionate advocate for wildlife and wild places. I will stay involved and active in our community as the immediate past chair.

It's been an honor to serve on the AZA Board, and I look forward to welcoming you all to Omaha's Henry Doorly Zoo and Aquarium for the 2016 AZA Mid-Year Meeting, where we will continue the important work of AZA-accredited aquariums and zoos.

Dennis E. Pate
Executive Director and CEO
Omaha's Henry Doorly Zoo and Aquarium

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new ideas



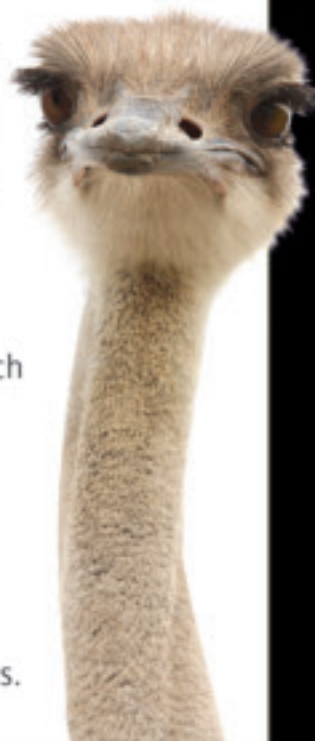
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Member & View

News, Ideas & Insights



On the Water

SeaWorld Announces Support for Killer Whale Research and Conservation Program

SeaWorld Entertainment, Inc., announced a commitment of \$1.5 million over three years to a new partnership with The National Fish and Wildlife Foundation (NFWF) through the Killer Whale Research and Conservation Program (KWRCP). Support of the KWRCP is part of SeaWorld's \$10 million pledge to fund research and conservation for killer whales in the wild – the largest private commitment of its kind.

The KWRCP will focus on three strategies: increasing prey availability; improving habitat quality; and strengthening management through crucial research. NFWF will seek to match this commitment with additional public and private dollars and released an initial Request for Proposals

(RFP) 8 June in conjunction with the global celebration of World Oceans Day.

“SeaWorld and the SeaWorld & Busch Gardens Conservation Fund have long supported organizations that focus on results-driven, on-the-ground research and conservation work,” said Joel Manby, president and chief executive officer of SeaWorld Entertainment, Inc. “NFWF has a longstanding reputation for working efficiently and effectively to conserve species and their habitats and we are looking forward to working together to protect wild killer whale populations.”

The program is dedicated primarily to providing support to aid in the recovery of the endangered Southern Resident killer

whale population found in the coastal waters of Washington State and surrounding areas, known as the Salish Sea.

As part of SeaWorld's \$10 million commitment, multiple killer whale projects are already underway through funding provided by the SeaWorld & Busch Gardens Conservation Fund (SWBGCF). These projects include:

- Continued funding of a breakthrough nutritional assessment of Northern Resident killer whales using unmanned aerial drone technology. Scientists from the National Oceanic and Atmospheric Administration (NOAA) took a series of precise body measurements of the killer whales living at SeaWorld,

Member View

including pregnant whales. Now they are using drones to photo-document wild killer whales, and based on the images collected at SeaWorld, are able to monitor the wild population's nutritional and reproductive states.

- Research on SeaWorld's killer whales' milk composition will help scientists understand the nutritional requirements for mothers and calves. In the Pacific Northwest, killer whales face the challenge of not enough salmon. By understanding how much energy goes into producing milk and having a better handle on how calves grow, we can determine if available prey are sufficient to meet the nutritional needs of the killer whales in the wild.
- Research into pregnancy and lactation will help scientists understand how killer whales metabolize toxins. This study is looking at how toxins are transferred



© Africam Safari Park

Professional Development

Profile in Professional Development

Inés Baños Hernández, Animal Keeper, Africam Safari

Inés Baños Hernández, following in the footsteps of family, came to Africam Safari Park in Puebla, Mexico, when she was 17 years old. Her family, and her uncle Don León in particular, had instilled in her a love for animals and a commitment to the organization.

Inés' first job at the Park included caring for the ponies and helping to raise rabbits. Her ability to hand-rear animals led to a position running the nursery, where she further developed her skills, always demonstrating a strong work ethic.

Later, she began working as an animal keeper. The speed and skill with which she learned and performed new tasks, along with her ability to share that knowledge with colleagues, made her stand out. Today, 11 years later, she is responsible for the Okavango Delta area. She also coordinates 10 staff, who care for ring-tailed lemurs, spider monkeys, squirrel monkeys, chimpanzees, various antelope, giraffes,

Asian elephants, lions, hippos, American bison and elk.

Inés' character, her ability to organize, delegate and evaluate work and her desire to improve were important qualities in her rise through the ranks. She recently won a keeper scholarship, allowing her to attend the annual conference of the Asociación Latinoamericana de Parques Zoológicos y Acuarios' (ALPZA) in Córdoba, Argentina. While there, she participated in workshops and presented on the care and rearing of Malayan and Central American tapirs.

Inés says that working at African Safari has given her confidence, security and motivation, helping her become independent and self-sufficient. She feels like she has always had the Park's support, both in her personal and professional endeavors, as it has given her the platform and support necessary to develop new ideas and put them into action.

"Africam Safari believes in me, and that makes me proud."

during pregnancy and lactation to offspring. Toxins are identified as a major health concern for wild killer whales. They have been proposed as causes for reduced pregnancy success and increased health issues in wild whales. By studying the whales at SeaWorld, we can create an effective model to better understand how these toxins impact wild killer whales.

For more information on SeaWorld's commitment to helping killer whales in the wild, visit SeaWorldCares.com.

For more information on the Killer Whale Research and Conservation Program, please visit www.nfwf.org/killerwhales.

Jeff Swanagan Memorial Scholarship

By Kirstin Schoeninger

Each year, the recipient of the Jeff Swanagan Memorial Scholarship is asked to share how their participation in an AZA Professional Development course will help them live Swanagan's philosophy of "Touch the heart to teach the mind."

When I first began exploring the Association of Zoos and Aquariums' (AZA) Professional Development scholarships, there was one opportunity that immediately stood out to me—the Jeff Swanagan Memorial Scholarship. From the very start of my career in the field of environmental education, I have been driven by the idea that in order to conserve our planet and the creatures living on it, we must first ignite a passion for wildlife in our audience. Mr. Swanagan's philosophy of "touch the heart to teach the mind" was something that resonated strongly with me and compelled me to apply for the scholarship awarded in his honor. I was fortunate enough to be chosen as the 2014-2015 recipient of this scholarship and as a result, attended AZA's Managing for Success: Career Development professional development course in Wheeling, W.Va., this past winter.

Throughout my week in Wheeling, I had the opportunity to meet and learn from some of the greatest minds in the zoo and aquarium community. My classmates and instructors in the Managing for Success course came to West Virginia with a wealth of knowledge and experience and each person I encountered brought a new perspective or idea to the table.

Our week consisted of a comprehensive course in zoo and aquarium management, where we learned everything from employment law to up-and-coming trends in our field. To learn from leaders of AZA facilities nationwide about their areas of expertise was an invaluable experience, which was compounded by the intelligent, thoughtful



© Smithsonian's National Zoo

discussions among classmates that went along with each session.

While the topics discussed throughout the week ranged greatly, it was one of our final sessions that I felt brought together everything we had learned. The session was on conservation, and we began by discussing what we believed to be the most serious threat to the protection of wildlife and wild places. After a series of varied opinions were voiced, our instructor, Tony Vecchio, shared his perspective: people have lost their connection with wildlife and nature.

When taken at face value, this statement is undoubtedly disheartening—particularly to an audience such as ours, comprised of

individuals who place great value in nature.

However, as we begin to seek solutions to this problem, a beacon of hope emerges. As AZA-accredited zoos and aquariums, we are uniquely positioned to address this concern head-on by prioritizing education, and dedicating our efforts to building and strengthening the connection between our visitors and the animals under our care. The first step to a lifetime of conservation action is passion; we won't protect what we don't care about. To save species, we must first inspire our visitors to care.

Kirstin Schoeninger is an education specialist at Smithsonian's National Zoo.

Member View

Education

Tennessee Aquarium/Tennessee Tech Unveil 3D Virtual Snorkeling for Students

The Conasauga River, which flows along the Tennessee/Georgia border approximately 1.5 hours from downtown Chattanooga, is incredibly alive. Within its crystal clear waters lives 76 native fish species, more than the Colorado and Columbia Rivers combined. These fishes, and the dozens of other animals that make up the aquatic community, live within less than 1 percent of the area of the other two enormous watersheds.

“Whenever we take students snorkeling in the Conasauga, they are changed by the experience,” said Dr. Anna George, director of the Tennessee Aquarium Conservation Institute (TNACI). “They see all of this life—right here in our backyards—and realize that we live in a special place worth protecting.”

Traveling with large groups to the river is impractical. But now there’s a way to bring the river to students at the Tennessee Aquarium in Chattanooga, Tenn., thanks to a new collaborative project with the BusinessMedia Center at Tennessee Tech University using Oculus Rift.

Oculus goggles allow users to become immersed in a 3D virtual reality

world that offers high-definition visuals in a 360-degree field of view. Computer processing speeds have become powerful enough to allow Oculus users to look up, down or behind themselves, and the complex scenery seamlessly follows their motions.

The gaming industry has been rushing to develop content ever since Facebook CEO Mark Zuckerberg purchased Oculus VR for \$2 billion.

While most developers are rushing to complete entertainment projects by the widespread release of the Oculus Rift system, which is forecast to be available by Christmas of this year, others like Tennessee Tech University (TTU) have forged a different path focused on education. “When we first started thinking about virtual reality projects, we thought about partnering with the Tennessee Aquarium,” said Kevin Liska, director of the BusinessMedia Center at TTU. “We felt there was a tremendous opportunity to develop the world’s first environmental education virtual reality game.”

The idea to create a snorkeling game came from Thaddeus Taylor, the Aquarium’s

learning specialist. While on a snorkeling trip to the Conasauga River, Taylor wondered aloud, “How can we give all of our Aquarium student groups this unique experience without having them travel to this remote location?”

Six months ago, Liska and a project team of eight people from TTU met with Aquarium educators and scientists from TNACI to brainstorm how to captivate students with a new virtual reality lesson plan. “It was an ambitious project, but between our team and the Aquarium’s, we were drawing on 16 different academic backgrounds,” said Liska. “So the final product isn’t just a cool game idea; it’s a way to immerse students in an environmental lesson that’s rooted in science.”

When school groups book a field trip this fall, they will be able to add the “Stream Scene Extreme,” a classroom program based on the Oculus Rift project, to enhance what they experience in River Journey and Ocean Journey. “This is very much like snorkeling a thriving river,” said Taylor. “Virtual reality allows us to place them in a healthy ecosystem and then create different pollution events for the students to actually experience.”

As the water changes from clear to murky, species begin to disappear. It’s up to the students to surface and become environmental superheroes by identifying the source of the pollution. Then they must choose the right corrective action, or actions, to restore the watershed.

Liska’s team is sharing this groundbreaking Oculus project with the world, hoping it becomes an environmental education game-changer. “In addition to reaching students at the Tennessee Aquarium, we will post this on the Oculus website for everyone,” said Liska. “Making this project publicly available for classrooms and homes across the nation is really exciting because it may help encourage waves of students to value and protect river systems.”





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Reintroduction

Detroit Zoo Breeds 22,571 Puerto Rican Crested Toads

In Royal Oak, Mich., the Detroit Zoo’s breeding efforts for the critically endangered Puerto Rican crested toad (*Peltophryne lemur*) have yielded the best results in the Zoo’s history with a record 22,571 tadpoles. Twenty tadpoles have been retained for future breeding at the National Amphibian Conservation Center while the rest were sent to Cabo Rojo, Puerto Rico, for release into the wild.

“We are thrilled to set a record—and reach a new milestone—by placing more than twenty thousand endangered Puerto Rican crested toad tadpoles into the wild this year,” said Chief Life Sciences Officer Scott Carter.

The Detroit Zoo began working to preserve the Puerto Rican crested toad in 1999. Since 2008, more than 47,000 tadpoles have been released into the wild.

The Puerto Rican crested toad has greenish-brown pebbled skin and marbled golden eyes. It grows 3-4 inches long and has the ability to almost completely flatten its body to fit into tiny crevices. The award-winning National Amphibian Conservation Center—a leader in amphibian conservation and research—is a state-of-the-art facility that boasts a spectacular diversity of frogs, toads, salamanders, newts and caecilians.

By The Numbers

AZA and GORILLA CONSERVATION

Over the past five years (2010-2014), more than \$4.5 million was directed toward gorilla conservation.

\$4.5 MILLION

4

At least four endangered or critically endangered species were targeted, including the Cross River, eastern, mountain and western lowland gorillas.

52 AZA-accredited facilities supported gorilla conservation.

52



Additionally, more than **\$340,000** from **34** institutions supported the AZA Ape Taxon Advisory Group Conservation Initiative (www.apetag.org/ConservationInitiative.html)

Member View



Conservation Spotlight

Fossil Rim Wildlife Center's Mission

Fossil Rim Wildlife Center is dedicated to the conservation of species in peril, conducting scientific research, training of professionals, responsible management of natural resources and public education. Through these activities, we provide a diversity of compelling learning experiences that inspire positive change in the way people think, feel and act toward nature.

Conservation Efforts

Dr. Patrick Condy, executive director, regards Fossil Rim's open spaces as a critical element of the conservation Center's success. "Our large spaces covered by natural Texas Hill Country vegetation, nestled in the rural countryside and free of the noise, light and disturbance typical of city locations, enable Fossil Rim to keep selected species in their natural group sizes, so that the normal social dynamics within the group can play out unhindered. This makes for fitter groups of endangered birds and mammals, either for sustaining assurance populations, for providing animals to boost dwindling wild populations or for reintroduction where they have gone extinct in the wild."

Fossil Rim Wildlife Center Conservation Facts

In 2014, Fossil Rim spent 6 percent of its annual budget on field conservation. They focus their work on conserving the threatened species that can be found at Fossil Rim. To this end, the Center collaborates with multiple partners, including those within the Association of Zoos and Aquariums (AZA), with other organizations and associations, and with state and federal agencies through their involvement in the red wolf, Mexican wolf and Attwater's prairie-chicken recovery programs. The following are a few excellent examples of Fossil Rim's conservation efforts:

- Fossil Rim was a founding member of the International Rhino Foundation and continues to support their work through annual contributions.
- Fossil Rim is a proud supporter of the Sahara Conservation Fund (SCF). SCF and Environment Agency Abu Dhabi will be reintroducing the now extinct in the wild scimitar-horned oryx to Chad this year. Through cash donations to SCF, in-kind support of skilled staff from

the institution and the contribution of animals for the Abu Dhabi World Herd for reintroduction to Chad, Fossil Rim is playing a direct role in reestablishing wild populations of this iconic species.

- Fossil Rim also provides support and participates in other conservation organizations' field efforts, including: Saola Working Group of the International Union for Conservation of Nature (IUCN), AZA Conservation Grants Fund and the WildGenes Laboratory and Royal Zoological Society of Scotland's addra gazelle genetic study.

Conservation Success Story

One of Fossil Rim's flagship conservation efforts is our Attwater's prairie-chicken captive breeding program. This grouse, historically found in large numbers on the coastal prairies of Texas and Louisiana, was listed as endangered in 1967 under the Endangered Species Act. For the last 20 years, the species has been intensively managed with a wild population of fewer than 110 individuals dependent on the release of captive-reared birds. Fossil Rim, a pioneer in Attwater's prairie chicken captive-rearing in the 1990s, has contributed significantly to the program by improving husbandry knowledge and providing the most chicks for release of any breeding partner. Chick survival to eight weeks has improved at Fossil Rim from 52 percent between 1996 and 2005 to more than 75 percent since 2006. A collaborative dietary study conducted with the Fort Worth Zoo in Fort Worth, Texas, and Houston Zoo in Houston, Texas, along with fine tuning and standardization of husbandry techniques, are both contributing factors to this increased rearing success. Additionally, Fossil Rim's development of a Web-based database has improved record keeping and provides access to collected data for more prompt analysis during and after the breeding season. As the 2015 release approaches, the success of this program in returning the Attwater's prairie chicken to sustainable numbers seems more secure than ever, tracking to be the largest one in the program's history.

To learn more about the Fossil Rim Wildlife Center, visit www.fossilrim.org.

In the Field

Smithsonian Scientists Find Key to Maintaining Healthy Sloth Bear Populations

By using DNA extracted from sloth bear scat, a team of Smithsonian Conservation Biology Institute (SCBI) researchers found that forest corridors between protected areas in the bears' native habitats are vital to maintaining a genetically diverse population. The team, including John Seidensticker, Jesus Maldonado, Trishna Dutta and Sandeep Sharma from SCBI and Hemendra Singh Panwar from the Peace Institute Charitable Trust, studied sloth bear populations in four wildlife reserves in India. The work was published 6 May in the *PLoS-One* paper, "Genetic variation, structure, and gene flow in a sloth bear (*Melursus ursinus*) meta-population in the Satpura-Maikal landscape of Central India."

"Our study shows that despite their sensitivity to habitat fragmentation, maintaining connectivity can protect sloth bears by preventing the negative impacts of genetic isolation," said Trishna Dutta, SCBI research fellow and lead author. "The bottom line is clear: corridors in this landscape are functional and are being used by many different species—sloth bears, leopards and tigers—and the protection of the corridors is vital for their continued survival."

Studying the genetics of wild animals is a difficult proposition. Not only are sloth bears elusive, but it is difficult to tell individuals apart. Unlike tigers and leopards, these bears do not have unique coat patterns, so researchers cannot use camera traps to track individuals.

For decades, SCBI researchers have led the world in an innovative, noninvasive alternative to trapping animals for studying genetics: they extract DNA samples from scat and hair that the animals leave behind. This technique allows researchers to study the animal populations in a nonintrusive way and to sample far more animals than they would otherwise be able to access.

"Noninvasive techniques allow us to study elusive carnivores from a wide range of habitats by collecting these samples," said



Jesus Maldonado, SCBI geneticist. "From these, we are able to tell how an animal moves through a landscape and the genetic diversity within the population."

The four wildlife reserves the team studied—Kanha Tiger Reserve, Pench Tiger Reserve, Bori-Saptura Tiger Reserve and Melghat Tiger Reserve—have been set aside primarily for the protection of tigers, but they are also home to other carnivores. The team found that the sloth bears in the reserves comprise two populations that are each connected by corridors: Bori-Satpura and Melghat form one population, and Kanha and Pench form another.

The researchers found that compared to other bear species, this population of sloth bears displayed a moderately high level of genetic diversity, which is an indication of a healthy population. Evidence of genetic mixing in the sloth bear population, along with scats found in corridors between the reserves, show that sloth bears use these corridors as conduits to move from

one area to another. Previous research by SCBI scientists found that sloth bears are sensitive to the size and degree of isolation between forest patches. The results of this study support the argument that it is vital to keep the pathways between the reserves open to wildlife.

However, these corridors lack the formal protection of reserves. Humans use the same forest corridors used by bears for farming and livestock, which can result in human-animal conflict. Another looming threat to sloth bears and their habitat is human population and the infrastructure, development and energy needs that a growing human population requires, such as transportation networks and mining for coal and other minerals.

Native to India, Nepal, Sri Lanka and Bangladesh, sloth bears are vulnerable to extinction. According to the International Union for Conservation of Nature, less than 20,000 sloth bears remain in their range countries.

Member View

Research

Unlocking the Nutritional Secrets of the Frugivorous Gray's Monitor Lizard

By Roger Sweeney

In April of this year, a new field conservation project was initiated for one of the world's most unusual and least-understood reptiles, the Gray's monitor lizard or "Butaan" as it is locally known in the Philippines. The project brought together an international collaboration between the Oklahoma City Zoo in Oklahoma City, Okla., and Virginia Zoo in Norfolk, Va., the University of the Philippines and the Polillo Islands Biodiversity Conservation Foundation (PIBCF). The goal was to collect samples of the wild foods eaten by this lizard to perform nutritional analysis to better understand the biology of these lizards, listed as Vulnerable by the International Union for Conservation of Nature (IUCN), and to provide a better diet for them in zoological collections.

Gray's monitor lizards are unusual among the family of monitor lizards for the fact that they are obligate frugivorous; nearly all other members of the monitor family outside of the Philippines are carnivorous. Currently Gray's monitors are only kept at the Oklahoma City Zoo and the Los Angeles Zoo in Los Angeles, Calif., in North America. They often do not adapt well to the types of fruits and vegetables available in North America.

Funded by a Conservation Action Now grant from Oklahoma City Zoo, and with support from Virginia Zoological Society, I travelled to the Philippines and after a short visit to the University of the Philippines, headed to the island of Polillo off the East coast of Luzon to meet members of the PIBCF. As local partners for this project, PIBCF arranged for the local permits to allow field research and sample collection from a forest reserve area, and they also

arranged meetings with the local mayor and chief of police to ensure proper approvals before research could begin in a protected area.

Our field project site was located in the Sibulan Watershed Reserve about 10 km inland from the port where the researcher spent five days surveying the forest for target tree species. We know what fruits these lizards eat in the wild from previous research looking at what seeds are present in scat samples by Dr. Daniel Bennett. What we didn't know until now is the nutritional content of those fruits that are unlike anything we typically used in zoo diets. After four days surveying trees of the target species that had fruit, it was then assessed which of those trees had fruit in the most appropriate developmental stage. On the fifth day inside the Sibulan Watershed Reserve samples were collected and then it was a race to keep the samples cool and in good condition while getting back to Luzon and to the University of the Philippines nutritional analysis laboratory as swiftly as possible. The results are now being compared to the fruits and vegetables that currently are offered in zoo diets. We can already start to make positive changes to the diets of these animals in zoological collections.

Roger Sweeney is the Assistant Director at Virginia Zoo.



© Ian Recchio, Los Angeles Zoo

Change in Diet Lowers Aggression

Lemurs are frugivorous and folivorous, but many species consume other plant parts and some have been observed eating small vertebrates and/or invertebrates. In the wild, lemur diets are low in non-structural carbohydrates (sugars and starches) and high in neutral detergent fiber. Zoos typically attempt to mimic wild diets by offering large amounts of fruits and vegetables. However, the fruits and vegetables offered by zoos have been selected for human preferences and typically contain high levels of starch and sugars and low levels of fiber. In humans, high levels of sugar are associated with a wide range of health and behavioral problems, including implications of elevated levels of aggression, anti-social behavior and hyperactivity. The behavioral effects of high sugar diets in non-human primates has received less attention than for humans, but there are indications that sugary diets may increase the incidence of aggression and self-directed behaviors in zoo primates. This study examined the effect of a low sugar diet, created primarily by the removal of fruit from the diet, on the behavior of 17 individuals among four species of zoo housed lemurs at two zoos. Prior to the study, diets consisted primarily of fruit, vegetables and specially formulated primate biscuits. The study diets contained no fruit, a reduced amount of vegetables (3 species) or slight increase in vegetables (2 species), and a different primate biscuit (Leaf Eater). Energy content of the original and study diets were similar, but the latter contained 80-150 percent more fiber and 21-30 percent less non-structural carbohydrates. Aggression and self-directed behaviors for all species were reduced substantially by the removal of fruit, despite differences in species, groupings and social composition and zoos. These results indicate that simple dietary changes can have significant behavioral effects.

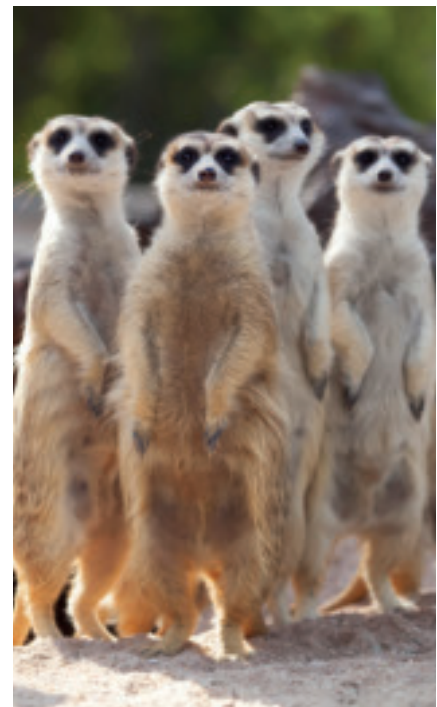
Britt, S, Cowlard, K, Baker, K, Plowman, A. 2015. Aggression and self-directed behavior of captive lemurs (*Lemur catta*, *Varecia variegata*, *V. rubra* and *Eulemur coronatus*) is reduced by feeding fruit-

free diets. *Journal of Zoo and Aquarium Research* 3: 52-58. Correspondence to Amy Plowman at amy.plowman@paigntonzoo.org.uk.

Saving Mr. Nature: Anthropomorphism Enhances Connectedness to Nature

Anthropomorphism has often been used to foster connections to nature and promote environmentally responsible behaviors. Yet despite its prevalence, there is little empirical support that anthropomorphizing is a successful approach to promote environmentally responsible behaviors. This study used three experiments involving college students to explore the impact of anthropomorphic messaging. Fifty participants in Experiment 1 were asked to design posters promoting environmental awareness. Eighteen posters were anthropomorphic, and designers of those posters reported stronger intents for environmentally responsible behaviors. Forty participants in Experiment 2 read either an anthropomorphic or non-anthropomorphic newsletter and then completed a 14-item Connectedness to Nature Scale. Those participants who read the anthropomorphic newsletter had stronger connectedness to nature. Seventy-three participants in Experiment 3 were asked to view subsets of either the anthropomorphic or non-anthropomorphic posters from Experiment 1. Those viewing the anthropomorphic posters subsequently scored higher on scales measuring connectedness to nature and self-reported environmentally responsible behaviors. These results suggest that anthropomorphisms make people feel more connected to nature. This sense of connectedness is positively associated with behaviors that are perceived as environmentally positive.

Tam, K-P, Lee, S-L, Chao, MM. 2013. Saving Mr. Nature: anthropomorphism enhances connectedness to and protectiveness toward nature. *Journal of Experimental Social Psychology* 49: 514-521. Correspondence to Kim-Pong Tam at kevintam@ust.hk.



Cooperative Nursing on Meerkat Manor: Who Really Benefitted?

Many social mammals engage in allonursing—nonparental females nursing the young of others. It is generally assumed that this behavior benefits some combination of the mother (reduces energetic demands), offspring (increases energy gain) and nonparental nurse (assisting relatives). Thus, it seems likely that 1) mothers whose offspring are nursed by others will be in better condition and reconceive faster than mothers who are the sole energy providers to their young and/or that 2) allonursed offspring will be larger at weaning and/or have lower mortality than non-allonursed offspring. This study used 25 years of data collected on the population of meerkats made popular by the television series, 'Meerkat Manor'. Somewhat surprisingly, there was no impact of allonursing on either pup size or survival, and mothers whose offspring were allonursed were in slightly poorer condition at weaning than those who nursed their own litters. Pup condition and survival was positively impacted by maternal condition, but there was no difference in allonursing association with maternal condition. Maternal condition was more strongly influenced by environmental factors. The study concludes

Member View

that allonursing may occur either because the costs are low or because it conveys subtle social or immunological benefits.

MacLeod, KJ, McGhee, KE, Clutton-Brock, TH. 2015. No apparent benefits of allonursing for recipient offspring and mothers in the cooperative breeding meerkat. *Journal of Animal Ecology* 84: 1050-1058. Correspondence to Kirsty J. MacLeod at kirstyjmacleod@gmail.com.

Speed Kills: Birds and Fast Moving Vehicles

The decision to evade a threat typically involves characteristics of the threat and condition of the animal under threat. Despite important differences in size, speed and directness of approach, there is evidence that many animals respond similarly to cars or aircraft or predators. Although each year hundreds of millions of animals collide with moving vehicles, it is unclear why these animals fail to effect appropriate escape behaviors. There is some indication that as vehicle speed increases, animals do not increase their perceived risk. This study used video playback of a pickup truck traveling at wide range of speeds to assess the threat responses of male brown cowbirds. The results indicate that male brown cowbirds use distance, rather than speed, to assess and respond to the threat of a moving vehicle. As vehicle speed increased, birds continued to respond at the same perceived distance. At vehicle speeds of about 75 mph, these cowbirds did not respond quickly enough to avoid simulated collisions. These results are consistent with other recent studies that suggest animals make flight decisions based on distance and not size or speed. The authors suggest that a reduced vehicle speed in sensitive ecological/conservation areas seems a viable strategy for reducing collisions.

DeVault, TL, Blackwell, BF, Seamans, TW, Lima, SL, and Fernández-Juricic, E. 2014. Speed kills: ineffective avian escape responses to oncoming vehicles. *Proceedings of the Royal Society B* 282: 20142188. Correspondence to Travis L. DeVault at travis.l.devault@aphis.usda.gov.



Green Tales

Tracy Aviary Solar Trees

During the past several years, Tracy Aviary has experienced a dramatic transformation with the vast majority of the nine acres being touched by construction. We look forward to sharing the new Tracy Aviary during the 2015 Association of Zoos and Aquariums (AZA) Annual Conference in Salt Lake City this month. An unfortunate side effect from all the construction has been the removal of trees. Though most of the trees were old, they provided wonderful shade that contributed to Tracy Aviary being one of the coolest places in town.

We knew shade for visitors was needed, and the point was made even more clearly by the team of AZA inspectors who mentioned this as a concern during their 2014 visit. Tracy Aviary has responded to this need in many ways, including the traditional methods of planting more trees and scattering umbrellas strategically throughout our landscape. We also opted to take a walk on the creative side by installing solar trees. Cynics among us might ask, "What's the ROI on this project?" Tim Brown, Tracy Aviary's

executive director, responds by asking what the ROI on a backyard pergola structure is and then explaining that generating solar power is just one of the benefits of Tracy Aviary's solar trees. The trees also provide shade, the most important component of the project. Like every other AZA-accredited facility, aesthetics matter and Tracy Aviary couldn't simply install an eyesore adjacent to their Chilean flamingo exhibit. Whether a pergola or solar trees, the shade structure needed to be an aesthetic amenity. The solar tree project is the first of its kind in Utah and creates a great educational opportunity for people of all ages. Finally, they exemplify our need to constantly consider ways to reduce our carbon footprint.

In summary, the solar trees provide shade, make an aesthetic contribution to Tracy Aviary's landscape, educate the public and generate energy. And with respect to the ROI, Tracy Aviary also secured +\$52,000 from Rocky Mountain Power's Blue Sky program to cover more than half the cost of the \$96,000 installation.

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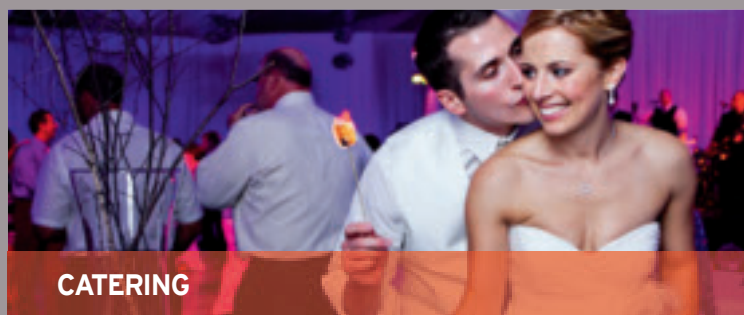
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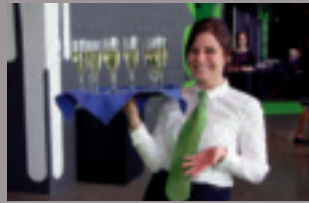
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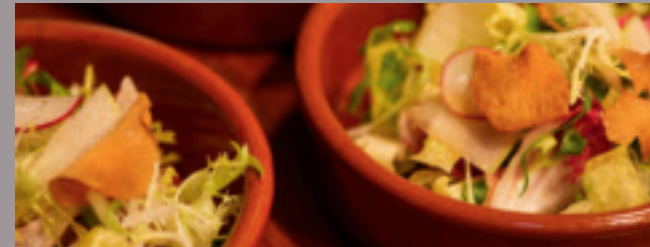
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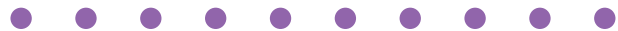
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GROWING *Our* *Own*

Cultivating the Next Generation of Institutional Leaders

BY MARY ELLEN COLLINS



Zoo and aquarium senior staff members who aspire to the top rung of the organizational ladder now have a new training experience that will help them with the ascent. The 13-month Executive Leadership Development Program (ELDP) is one of the latest additions to the Association of Zoos and Aquariums' (AZA) portfolio of professional development opportunities.

The expertise required to run a zoo or aquarium has changed over the years, and people who have come up through the ranks often don't have the chance to develop many of the executive skills necessary to take on the leadership role.

“LONG AGO *and far away,*

most zoos and aquariums were funded by local government,” said Jackie Ogden, vice president, animals, science and environment, at Walt Disney Parks and Resorts in Lake Buena Vista, Fla. “They were community places where it wasn’t so important that they be run as businesses. Some still receive funding, but there’s a need for increased resources and more sophisticated revenue generation. There’s so much competition for leisure time that institutions have to focus on being the best places for people to take their families. We also have to inspire our guests to care about the animals and the planet. The complexity of the goals needs leaders with a greater breadth and depth of experience.”

In order to find individuals with that experience, candidates from outside the zoo and aquarium world have been hired, according to Amy Rutherford, AZA’s professional development program manager.

“This is a complex profession. People who come from other fields might be strong in business and communications, but there is a steep learning curve to understand the animal side of the profession. Although many of them have turned out to be great leaders within AZA, we had to look at what was keeping other internal candidates from being chosen for those positions.”

With a significant number of current directors set to retire within the next decade, the impending loss of institutional knowledge provided an additional incentive for creating the ELDP. AZA leaders credit Ted Beattie, president and chief executive officer of the Shedd Aquarium in Chicago, Ill., for championing the idea. He also provided start-up money for the program from the Penny Beattie Leadership Fund he had created in memory of his wife.

“When Ted was board chair in 2001, he challenged us as a community and said we needed to do leadership training,” said Kris Vehrs, AZA executive director. “We had been talking about it for years and decided we had to just do it. Now I’m thrilled that we took the leap.”

Program Overview

The first cohort began the ELDP in January 2014. The program is designed for those who have the interest and expertise needed to move to the most senior management position within the next five years; and it focuses on developing competencies in executive leadership behaviors, executive focus and executive oversight for zoo and aquarium operations.

As the program requires a significant time commitment, applicants must have a recommendation and a commitment of support from their director. The selection committee tries to choose a diverse group of 10-15 people who represent different types and sizes of facilities and departments ranging from conservation to finance.

Participants begin the program by undergoing a 360-degree assessment in which they receive feedback from questionnaires completed by their peers, supervisors and staff members.

Executive coach Tracy Smith, an ELDP consultant, reviews the results of the assessment with each applicant, helps them determine the areas they want to focus on and assists in creating an Independent Development Plan (IDP) that will help guide each participant’s program throughout the year.

Each person is assigned a mentor, a director who is particularly strong in the areas that complement their own. In addition to regular communication, and sometimes a site visit with the mentor, participants receive individual and group executive coaching. They also attend AZA’s four annual meetings, where ELDP programming includes executive directors making presentations about their own professional journeys and participating in roundtable discussions on topics like managing boards or high-level fundraising.

Participants are also divided into two “action learning teams” that tackle an issue in the profession, and they present their results to the AZA Board of Directors at the end of the program. “They use this group to develop skills, like active listening or giving feedback, as well as working on providing solutions or resources for a critical issue of importance to the AZA community like conservation or diversity,” said Rutherford.

At the end of the program, participants receive a diploma and have an opportunity to share their experiences with the incoming cohort.

Up Close and Personal

The ELDP requires participants to seriously reflect on their own



Top: Jackie Ogden, vice president, animals, science and environment, at Walt Disney Parks and Resorts speaks with a cast member.

Right: AZA leaders credit Ted Beattie, president and chief executive officer of the Shedd Aquarium for championing the idea for the ELDP.



“*My perspective is changing.* As I think about things like budgets and board support and dabble in other departments ... it feels natural to look at them as other places where there are opportunities.”

—**KIERSTEN DARROW**, research curator, Cabrillo Marine Aquarium

goals in order to create the path they want to pursue, which came as a surprise to Jo-Elle Mogerma, vice president of institutional planning and inclusion, Chicago Zoological Society - Brookfield Zoo in Brookfield, Ill., and a participant in the first cohort.

“Our president and CEO asked if I’d be interested. I hadn’t considered being an executive director because my son was just three, but I thought, ‘I’m naturally curious, so I’ll learn something.’ I thought it was going to be more of an academic process. I didn’t expect to spend so much time on me. It is more about reflection and your personal journey. It was about figuring out what being an executive director means and what it means for you. Having the opportunity to do that was one of the most valuable things about the program.”

The participants’ relationships with the mentors and coaches have a significant impact, according to Doug Piekarz, president and CEO, Akron Zoo in Akron, Ohio. He was vice president of planning and conservation programs when he started program.

“My mentor was Steve Marshall from the El Paso Zoo, and he was available at any point in time to talk about any issue, to give honest feedback and work together on my development plan. We shared the very personal stories of successes and failures in the nonprofit world, and that openness was the most important aspect of the mentorship.”

Halfway through the ELDP, the Akron Zoo’s chief executive officer left and Piekarz applied for her position. When an unanticipated issue arose that prompted him to consider removing himself from the search, people in the program provided invaluable counsel.

“This program supported me in a very unique way. I was able to make the right decision for me and do what was in my heart and in my mind. Had I not gone through the program, I might not have made the same decision. I am very grateful.” He completed the interview process and was the unanimous choice to become the chief executive officer.

Learning Curve

Learning what an executive director’s job entails also expands participants’ professional horizons. Dr. Kiersten Darrow, research curator, Cabrillo Marine Aquarium in San Pedro, Calif., is halfway through the second ELDP cohort and said, “My perspective is changing. As I think about things like budgets and board support and dabble in other departments ... it feels natural to look at them as other places where there are opportunities.” She also discovered a new skill when she recently participated in AZA’s Advocacy Day in Washington, D.C., for the first time.

“I am surprised at how natural it feels to make a case to people about things I love. I’m usually the scientist at the bench, and this was new to me, but I found that I really enjoy it. That process has been demystified.”

The learning experienced by the mentors came as a pleasant surprise to the program creators, including Vehrs. “I knew participants would get a lot out of it, but I didn’t realize how much the mentors would,” she said. “When you’re not focused



on the nuts and bolts of your own facility, you’re self-reflective in a very different way.”

Lynn Clements, executive director of the Virginia Aquarium & Marine Science Center in Virginia Beach, Va., mentored Mogerma and is now mentoring Darrow. “When Jo-Elle came and toured our facility, she gave us several nuggets of information about why it was so great. They were things we don’t capitalize on enough, like having a very culturally diverse audience and a military-related audience. She also saw people interacting with



Dr. Kirstin Darrow teaching a group of high school interns from the Port of Los Angeles about research that is done at Cabrillo to understand the balance of marine ecosystems and industry in the harbor.



our hands-on exhibits to a degree she has not seen elsewhere in aquariums and zoos. She helped us see our facility through new eyes.”

Dwight Scott, director of the San Diego Zoo in San Diego, Calif., is currently mentoring Andi Kornak, director of animal and veterinary programs at the Cleveland Metroparks Zoo in Cleveland, Ohio. He, too, sees the value of the program to seasoned pros.

“In our first meeting at the AZA Annual Conference, the mentors were in the same room with the participants. It was a great environment for discussing

leadership, and it was fascinating to hear how other mentors answered the questions. I’m also very excited about the site visit. Andi is coming in August, and I’m scheduling times for her to meet with members of my team to focus on different executive director competencies. She will see what we do here, and we can gain insight from her. It’s a two-way street. I hope participants take away from the program the fact that to be a leader is to be a lifelong learner.”

Participants and mentors agree that committing time

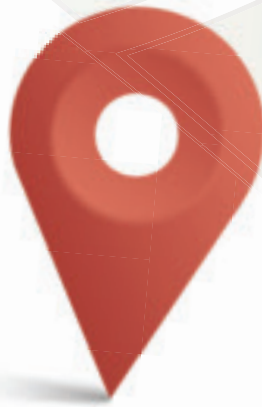
and energy to the ELDP is a worthwhile investment and that you will get out of it exactly what you put into it.

“It leaves you in a better place than when you started,” said Mogerman. “I feel like I now understand what competencies are needed, and I recognize what I learned and what I’m still learning. The program stops, but the listening and reflection don’t.”

For information on the ELDP, go to www.aza.org/ELDP.aspx.

Mary Ellen Collins is a writer based in St. Petersburg, Fla.

Charting the Course to SUCCESS



BY TRACEY LYNN SHIFFLETT

In both its Accreditation Standards and Obligations of Professional Ethics, the Association of Zoos and Aquariums (AZA) calls on its members to provide staff “opportunities for continuing education and training programs” and to “aid the professional development of those who enter the zoological park and aquarium profession.”

Professional training and development is highlighted in both of these important documents for a very good reason: charting the course to success must include grooming the future stewards of the zoo and aquarium community and the animal world.

“When I was starting out in my career, I was fortunate to have some great mentors. Those experiences meant a lot to me and really helped to shape my career in this industry,” said Hollie Colahan, vice president for animal care at Denver Zoo in Denver, Colo. “I couldn’t pay my mentors back, so I pay it forward.”

Paying it forward for Colahan means, in part, mentoring other zoo and aquarium staff as an instructor for the AZA professional development courses, *Managing for Success* and *Managing Animal Enrichment & Training Programs*. The *Managing for Success* courses were first offered more than 40 years ago, and since that time AZA’s Professional Development Program has grown to include 20 in-person courses, team-taught by experts from across AZA-accredited facilities. These

courses provide practical tools and skills for students to take back to their facilities, as well as strong networking experiences with fellow professionals.

AZA courses are just part of the professional development puzzle though, and like many things, staff training starts at home. Many AZA-accredited facilities support their staff with robust and diverse approaches to training and development.

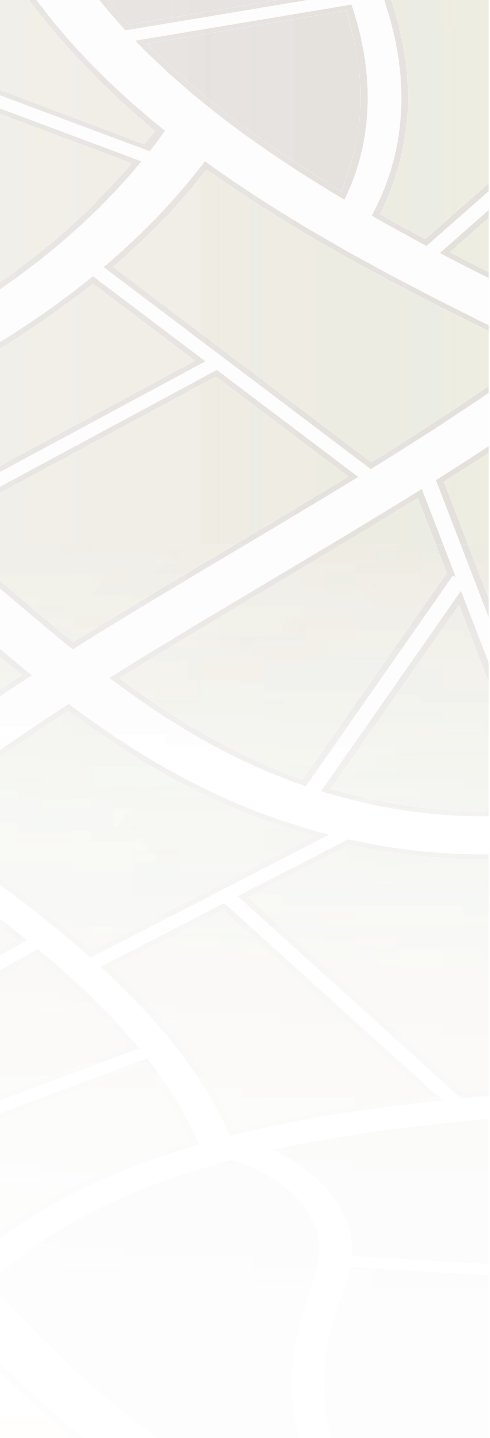
The Road to Leadership

In addition to supporting Colahan’s participation as an AZA course instructor, Denver Zoo has invested in growing their internal opportunities with a zoo-wide management training program called *Values-Based Leadership*, launched in 2012.

“As part of our strategic imperative, we developed a program with goal-setting priorities that is organic to our business practices, while supporting employees at the



© Stephanie Adams, Houston Zoo



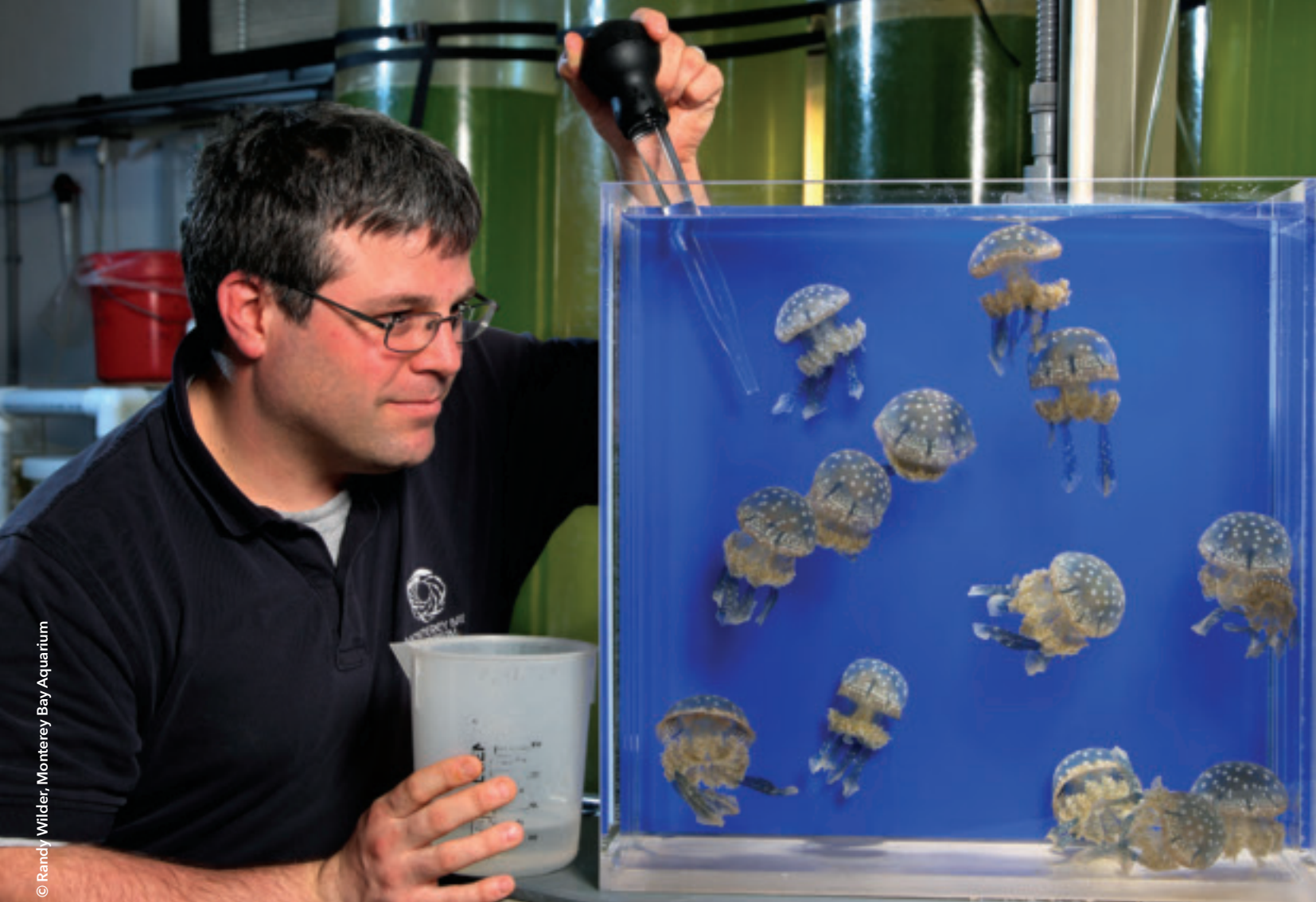
Left: A reptile keeper at the Houston Zoo demonstrates target training.

Right: Lemurs at the Houston Zoo receive a novel plant as enrichment.

Houston Zoo will host AZA's Managing Animal Enrichment & Training Programs course in October.



© Stephanie Adams, Houston Zoo



© Randy Wilder, Monterey Bay Aquarium



“Professional development is all about strengthening your skills, understanding your weaknesses, and becoming stewards of the zoo and aquarium community ...”

management level with leadership skills,” explained HR Special Projects Manager Jamie Cornell.

To accomplish this, Denver Zoo partnered with EPI in Minneapolis and committed extra budget and staff time for the first year of the program. The program is divided into six monthly sessions, and between each session, participants have reading assignments and other homework. At the end, participants are asked to complete concluding projects. With the effort, a combined 420 professional development hours were logged among staff and participants last year.

Cornell explains that the training is now a mandatory part of onboarding procedures at the management level and above, and the budget and staff time commitments are less now that the program is in full swing.

“The program arms participants with tools to empower, motivate and hold their teams accountable; manage tasks, people and themselves; and communicate more effectively,” concluded Cornell. “It is strongly supported by our CEO, and employees have given the experience very high marks.”

A Wide Reach

Another graduate of Managing for Success, San Diego Zoo Global Chief Human Resources Officer Tim Mulligan, referred to the course as a “360-degree eye-opener,” and he agreed that leadership support is vital.

San Diego Zoo Global’s professional development program, “Zoo U,” comprises several different components, including an intranet employee resource, a monthly management class, a leadership development

series and an online training platform that also supports participation from other AZA-accredited facilities.

“San Diego Zoo Global Academy (www.sdzglobalacademy.com) is an elearning resource that is open to all AZA-accredited institutions,” explained Mulligan. “Each course is designed to meet the specific needs of individuals in the zoological profession.” The Academy makes learning available anytime, anywhere, in an effort to reduce travel and time barriers that can hinder professional development endeavors. It also allows individuals to learn at their own pace, test their skills and gauge their progress. Courses are available for a variety of skill levels, from early service keepers to managers.

“Professional development is all about strengthening your skills, understanding your

weaknesses and becoming stewards of the zoo and aquarium community,” Mulligan explained. “Ensuring that everyone has access to programs that foster learning and growth is safeguarding the future of our organizations and the animals we care for.”

A Model of Success

Houston Zoo in Houston, Texas, recently developed a leadership program for its employees that is based on the AZA Executive Leadership Development Program. “We wanted to provide our employees with a similar growth experience here at the Zoo,” said Executive Vice President David Brady.

In fall 2014, Brady launched a pilot program with six Zoo employees from a cross-section of disciplines at the management and director level. “The goal was to help our staff develop better management and leadership skills, and for those skills to cascade throughout the organization,” explained Brady. The team met once a month as a group and with subsets on the departmental level, covering a variety of management and supervisory tactics.

When Brady and his team launched the full program in January 2015, they also integrated it with successful external models, hosting guest speakers from different industries, who added valuable perspective on those leadership skills. The group included leaders in business, the energy industry and a book author, all sharing their respective areas of expertise.

At the end of the program, the participants completed evaluation surveys that Brady said revealed improved cross-departmental relationships. “From the bottom up, and the top-down, everything we do to make better managers makes all staff performance better, which is better for our guests, and also better for our brand. That means better overall value for the entire organization,” summed up Brady.

Brand Behaviors

It’s an organization’s brand that Jim Covell, director of guest experience, training and interpretation at Monterey Bay Aquarium in Monterey, Calif., said is the cornerstone of all professional development. “Everything you do, everything you say; and everything everyone on your team does and says is your brand,” he explained. “Whether it is a welcome speech by the ticket taker, an education member sharing an animal story or marketing messages on



© Stephanie Adams, Houston Zoo

ads and posters, if everyone developing those messages is not speaking in the same voice, your brand has been fragmented.”

Covell continued, “Professional development is one of the most important brand builders, and Monterey Bay leadership puts a high priority on it.” From its Welcome Week Orientation, to daily and weekly ongoing training sessions, to all-day offerings that immerse employees in the behind-the-scenes world, he said that “training must always be accessible because anything they’ve

Houston Zoo recently developed a leadership program for its own employees.



© Randy Wilder, Monterey Bay Aquarium



“Training must always be accessible because anything they’ve learned, in any way they’ve grown, it will benefit the Aquarium and its brand.”

learned, in any way they’ve grown, it will benefit the Aquarium and its brand.”

For nearly 30 years, Covell’s brand ownership has been training frontline staff and volunteers to be engaging and mission-serving storytellers, or “interpreters.” He refers to this skill as a “brand behavior” and partners with the National Association for Interpretation (NAI) to help his team perfect it. Covell was one of the first certified trainers from NAI when it was founded in 1987 and said professionals from the tourist industry, National Parks Service and universities across the country utilize NAI trainings and certification programs.

“Certified interpreters receive learning and building components that include the basics of identifying an audience and the ability to make that head-and-heart connection with guests,” he explained.

The Aquarium also partners with local educators to offer employees courses that qualify for degree and continuing-education credits. Covell said that none of it is possible without 100 percent leadership support.

“None of it works if the organization doesn’t value it. It’s a partnership between management and its employees,” he said. “At Monterey Bay, there are a lot of resources dedicated from the board level down with the primary goals of promoting excellence, setting everyone up to succeed and continuing the culture of excellence of service and integrity of mission.”

Practicing What They Preach

Be it one of the instructors of an AZA professional development course, a senior staff member in leadership training, a seasoned trainer for volunteers and



© Denver Zoo

visitor services staff or human resources professionals spearheading professional development initiatives, the professionals championing development at AZA-accredited facilities are of different disciplines and at various levels of progression in their careers. But they have one common denominator – they all practice what they preach and recognize the value they receive from training the next generation:

Colahan: “Every year I learn something from every student and instructor, as well as best practices at other AZA-accredited institutions. Teaching is part of my ongoing learning process.”

Cornell: “I’m always seeking growth opportunities. Coaching our employees about

their professional development goals helps me learn key skills in my own career.”

Covel: “By exposing yourself to different methods and processes, you are learning how to improve your own methods and processes. You should never be satisfied with where you are; you should always have ideas about where you are going.”

Brady: “Mentoring is something I’m very passionate about. I wholeheartedly encourage anyone to pursue their professional development goals, and at the same time, give some thought to how you can create an environment of learning in your organizations for a new generation of leaders.”

Mulligan: “I am very focused on everything I can do to become a stronger

leader, so I can create programs that allow others to become stronger leaders. It’s personally very rewarding to be a mentor, and it’s a crucial component to workforce-planning initiatives in our industry.”

Charting the course to success includes practicing what you preach and making sure others have the same opportunities to grow, succeed and become future stewards of the zoo and aquarium community and the animal world. Find out more: www.aza.org/professional-development/azatraining@aza.org 301-562-0777, ext. 251

Tracey Lynn Shifflett is a writer based in Odenton, Md.



FOCUS

on Animal Welfare

BY EMILY SOHN



The western lowland gorillas at Chicago Zoological Society's Brookfield Zoo in Brookfield, Ill., used to get their meals at the same time every morning. That was the routine until curators studied their activity patterns and decided to create new opportunities for more natural and active feeding behaviors. They set up automated feeders to deliver their diet at both regular and irregular intervals, sometimes in unusual places.



The apes don't always know anymore when or where food will appear, said Lance Miller, senior director of animal welfare research at Brookfield Zoo. This set-up more closely resembles conditions in the wild, where gorillas spend much of their time foraging, and dramatically increases their motivation to move—leading to a doubling of activity levels, Miller and colleagues report in an upcoming issue of the journal *Animal Behavior and Cognition*. The Zoo is in the process of switching many of its exhibits to similar feeding systems that provide variety while delivering an animal's full and complete diet. One component of

the new red panda exhibit, for example, contains tree-like structures with cups that are occasionally filled with food. The Asian small-clawed otters already get unexpected fish deliveries.

Brookfield Zoo's new approach to feeding strategies is an example of the overall shift happening across facilities accredited by the Association of Zoos and Aquariums (AZA) toward scientific, evidence-based techniques for assessing and providing for animal welfare.

Zoos and aquariums have long considered the welfare of the animals under their care, experts say. There has been an AZA committee focused on animal welfare for more than 40 years. But what animal

welfare means has not always been as clear. Welfare is an amorphous term that combines a creature's physical, mental and emotional states into an overarching assessment of well-being. In the 1960s, a focus on defining and legislating the welfare of domestic livestock in the United Kingdom resulted in a concept known as the Five Freedoms. Animals were considered well cared for if they were free from hunger and thirst; discomfort; pain, injury and disease; and fear and distress, as well as free to express normal behavior.

Animal welfare in the zoo and aquarium field has moved past this concept of "freedom from" toward a more nuanced understanding of welfare focusing on opportunities to

thrive and assessing welfare over time. This interpretation is clear in the AZA Animal Welfare Committee's definition and explanation of animal welfare:

Animal Welfare refers to an animal's collective physical, mental, and emotional states over a period of time, and is measured on a continuum from good to poor.

Explanation: An animal typically experiences good welfare when healthy, comfortable, well-nourished, safe, able to develop and express species-typical relationships, behaviors, and cognitive abilities, and not suffering from unpleasant states such as pain, fear, or distress. Because physical, mental, and emotional states may be dependent on one another and can vary from day to day, it is important to consider these states in combination with one another over time to provide an assessment of an animal's overall welfare status.

"When I started working as a keeper almost 30 years ago, maybe you'd throw some leftover greens to the ducks because you knew they liked it and you thought it would be nice, but it wasn't a regular part of their day," said Sara Hallager, curator of birds at the Smithsonian National Zoological Park in Washington, D.C. "Now, it's ingrained. There are so many papers being published on the value of training and enrichment that I can't imagine it not being part of our daily care. There's definitely more science to welfare than there used to be."

This science behind animal welfare provides a framework not only for assessing and understanding an animal's well-being, but for training animal care staff. Next spring, for the first time, the AZA will offer a weeklong course titled Evidence-based Animal Welfare Management, hosted at the Brookfield Zoo. This course was developed with support from the AZA Animal Welfare Committee to provide managers, supervisors and curators hands-on experiences to learn and build the skills necessary to implement an evidence-based management program at their institutions.

The key to this approach is in gathering the evidence. Animals can't say how they're feeling, and many are motivated to hide signs of stress or illness as these would be weaknesses in the wild. Among the lessons included in the new AZA animal welfare course, keepers will learn to observe and evaluate the welfare of the animals in their

care by rating the condition of fur, feathers and scales, and measuring indicators like heart rate, blood pressure, body weight, hormone levels and behavioral signs of distress.

"Much of our animal management over the last 100 years has been based on early natural history studies, field studies and studies of animals in zoos, and the 'art' of

good husbandry by professionals who were dedicated to improving husbandry," said Dr. Don Moore, senior scientist for AZA and Smithsonian National Zoological Park. "In the last 25 years, we have been using more and more high-tech tools and laboratory techniques to study animal sensory capabilities, endocrinology and behavioral



"When I started working as a keeper almost 30 years ago, maybe you'd throw some leftover greens to the ducks because you knew they liked it and you thought it would be nice, but it wasn't a regular part of their day," said Sara Hallager, curator of birds at the Smithsonian National Zoological Park in Washington, D.C. "Now, it's ingrained. There are so many papers being published on the value of training and enrichment that I can't imagine it not being part of our daily care. There's definitely more science to welfare than there used to be."

preferences to help us improve husbandry through effective scientific assessments.”

Also in the final stages of production are two Web-based trainings focused on animal welfare, both developed in conjunction with AZA’s Animal Welfare Committee. The first is a 30-minute “Introduction to Animal Welfare” that will serve as pre-work for many of AZA’s animal-focused, in-person courses. Additionally, the San Diego Zoo Global Academy has led the development of a more comprehensive two-hour course that will be hosted by both the Academy and AZA’s elearning platform. These modules will increase access to training around animal welfare to a broader audience of zoo and aquarium professionals.

Species Survival Plan® (SSP) or place an animal in an appropriate social grouping.

“Zoos and aquariums move thousands of animals every year,” said Hallager, who co-developed and teaches in the course. “But any time you ship an animal, whether by air or land, there are always risks. And it can be a source of stress on the animal. We want to minimize stress as much as possible.”

Hallager and the other instructors guide keepers to think ahead about all the details needed to ensure a smooth transfer — making sure to have the right kind of crate, for example, that will be kept at the right temperature and fit in the truck that’s coming to move it, and provide the animal time to explore and

“Public concern about animal welfare keeps growing with increased social media-generated awareness about well-being of animals in aquariums, zoos and even in nature ...”

“Animal well-being is a focus of our AZA professionals and also many of our zoo and aquarium visitors and other stakeholders. Public concern about animal welfare keeps growing with increased social media-generated awareness about well-being of animals in aquariums, zoos and even in nature,” Moore said. “It is important that all zoo and aquarium professionals have access to advanced training resources about animal welfare science and philosophy so they can discuss all aspects of animal welfare with our interested supporters and stakeholders.”

The new welfare course will bring AZA’s in-person offerings up to 20 courses that reach hundreds of participants from more than 150 facilities each year, and a growing number are emphasizing animal welfare as an essential part of the curriculum. One of these is the recently launched Animal Transport for Animal Care Professionals course.

Animal transfers are an important part of animal management at AZA-accredited facilities and are often done to fulfill breeding recommendations from a

become accustomed to being in the crate before transfer. Permits need to be acquired in advance, and keepers need to think about how to help animals adapt to new exhibit mates, new keepers and new potential breeding partners. While there is no single lecture on animal welfare, participants in the inaugural session reported overwhelmingly that they felt the topic was well-covered throughout the course.

Hollie Colahan, vice president for animal care at Denver Zoo in Denver, Colo., and the vice chair of AZA’s Professional Development Committee which oversees AZA’s courses said, “As zoos, our greatest responsibility is the welfare of the animals in our care.”

With new research and techniques to better assess and address welfare, together with new courses that teach professionals about animal welfare, AZA-accredited zoos and aquariums are meeting this responsibility.

Emily Sohn is a writer based in Minneapolis, Minn.





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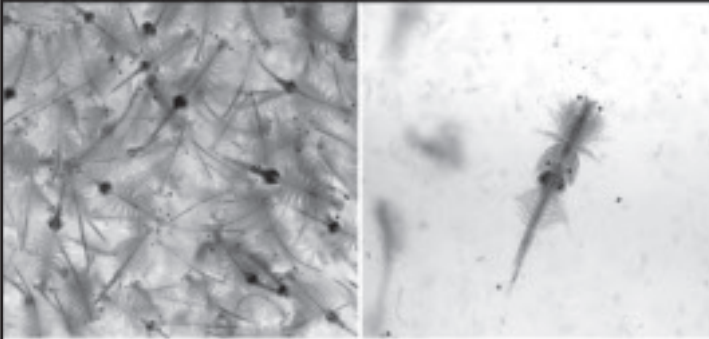
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Member News

Prominent Zoological Leader Lee Ehmke to Head Houston Zoo



The Houston Zoo in Houston, Texas, a leading zoological center for conservation, education and cultural experiences, announced that it has named internationally recognized zoological leader Lee Ehmke as its president and chief executive.

Ehmke was the director/ chief executive of the Minnesota Zoological Garden in Apple Valley, Minn., and president of the Minnesota Zoo Foundation. There he directed all aspects of the 485-acre zoological park and served as its primary spokesperson and representative in governmental, community, media and professional forums. Since arriving in 2000, Ehmke has revitalized the Minnesota Zoo with award-winning new exhibits and facilities; developed a conservation program; and grown its annual attendance to 1.25 million. He also generated unprecedented charitable, government and earned-revenue support for the facility.

Ehmke serves as the elected president of the World Association of Zoos and Aquariums (WAZA), a global association of more than 300 member facilities, which serves as a catalyst for their joint action on behalf of biodiversity and habitat conservation and sustainability. Ehmke's two-year term as president of WAZA will end in October 2015, but he will remain active in national and international zoological and conservation work, deepening Houston Zoo's leadership in these critical efforts.

Prior to his time at the

Minnesota Zoo, Ehmke was the director of planning and design at New York's Wildlife Conservation Society (WCS), headquartered at the Bronx Zoo in Bronx, N.Y. In his 12 years at WCS, Ehmke led the design and managed construction of numerous award winning Bronx Zoo projects, including its signature Congo Gorilla Forest exhibit. This acclaimed habitat was also home to three of the Houston Zoo's new western lowland gorillas prior to them moving to the Bayou City.

"The Board of Directors and I are honored to have someone with Lee Ehmke's breadth and depth of experience as our next president and CEO. His powerful combination of passion for conservation, visionary leadership and dedication to the highest quality animal husbandry, education programming and visitor experience is aligned with our mission at the Houston Zoo," said Suzanne Nimocks, chair of the Houston Zoo's Board of Directors. "We are confident that he will build upon the outstanding achievements of retiring CEO, Deborah Cannon, and help propel us on our journey to ever-improving our regional, national and international influence and impact on behalf of animals both in our care and in the wild."

Cannon commented: "I am thrilled to know that our beloved zoo will be in such good hands under the stewardship of my colleague and friend, Lee Ehmke. He is one of the leaders I most admire in the field, and I know that the Zoo will remain fiscally strong and programmatically vibrant with Lee at the helm."

Cannon herself joined the Houston Zoo in 2005 and led the facility into a new era of

growth and financial stability. New and strengthened sources of revenue, enhanced guest services, creative programming and new and revitalized exhibits—including the recently opened state-of-the-art gorilla habitat—have resulted in revenues and memberships more than doubling over Cannon's tenure. Today, with 2.4 million visitors annually, the Houston Zoo is among the top 10 zoos in the country in attendance and is one of Houston's most visited and cherished cultural attractions.

"It is indeed a privilege and honor to have been chosen as the next president and CEO of the Houston Zoo. I have admired its growth, fiscal strength and focus on conservation. I am excited to work with the talented and dedicated staff of the Houston Zoo as we prepare for its Centennial in 2022," said Ehmke. "21st century zoos will increasingly be called upon to help save wildlife, and the Houston Zoo is well-positioned to be a global leader in this vital role."

Sacramento Zoo Announced Dr. Kyle Burks as New Director and Chief Executive Officer



The Sacramento Zoological Society's Board of Trustees announced the selection of Dr. Kyle Burks to the position of director and chief executive officer of the Sacramento Zoological Society in Sacramento, Calif.

"We conducted a nationwide search and identified several highly qualified candidates for the position," said Jeff Raimundo, president of the Sacramento Zoological Society's Board of Trustees. "We are impressed

with Kyle's background and vision for the future, and we feel he will bring renewed passion, energy and innovation to our community jewel."

Burks' extensive work history includes being recruited to the Opening Team for Disney's Animal Kingdom in Lake Buena Vista, Fla., in 1997. While there, he served many roles, including training the park's operations managers to understand the animals in the collection, serving in a temporary assignment as the curator of education for cast programs, managing the Wildlife Tracking Center and helping to develop and monitor Disney's Animal Kingdom's strategic plan. In 2008, Burks joined Denver Zoo in Denver, Colo., as executive vice president and chief operating officer. In that role, he was responsible for the day-to-day operation of the Zoo, including veterinary and daily care of the animal collection, education, conservation, operations, human resources and campus management. Burks also served as Denver Zoo's interim president/chief executive officer from July 2013 through February 2014.

"I am honored to have the opportunity to work at Sacramento Zoo, a community treasure that has inspired wonder and awe for 88 years," said Burks. "I look forward to leading the Zoo's highly regarded team. Together we will continue to make the

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community proud, living up to our responsibility of maintaining the highest standards of animal care while providing an amazing experience for our guests.”

Burks succeeds Mary Healy, the Zoo’s director for nearly 15 years, who died unexpectedly last August while on a trip to the Galapagos Islands.

As the new director/ chief executive officer of the Sacramento Zoo, Burks will ensure the Zoo achieves its mission to inspire appreciation, respect and a connection with wildlife and nature through education, conservation and recreation. In this role, he will oversee 108 employees, a collection of more than 500 animals on 14 acres, as well as the Zoo’s robust education and international conservation programs.

New Director of Animal Care at Calgary Zoo



The Calgary Zoo in Calgary, Alberta, Canada, announced that Jamie Dorgan has been appointed as director of animal care.

Dorgan’s love of animals started as a child working on his aunt’s dairy farm. As a professional, he has now worked in the zoo community for 15 years, including 10 years with the Greater Vancouver Zoo, where he progressed from zookeeper to curator then to general manager.

Since joining the Calgary Zoo in 2010, Dorgan has played a leading role in completing the Penguin Plunge exhibit, helping to achieve outstanding results in the 2013 AZA accreditation process and developing new exhibits for such species as mandrills, rhinos and Komodo dragons. Perhaps most importantly, he has been instrumental in designing and

improving animal welfare and safety practices and protocols. Under Jamie’s direction, the animal care team will continue their outstanding work in setting the highest possible standards for the care of the Zoo’s animals.

New Director of Conservation & Science at Calgary Zoo



The Calgary Zoo in Calgary, Alberta, Canada, announced that Dr. Axel Moehrenschrager has been appointed as director of conservation & science.

Over the last 25 years, Moehrenschrager has conducted research and training around the world to develop science-based solutions for effective conservation. Moehrenschrager received his PhD from Oxford University, where he remains affiliated. He is also an Erskine Fellow at New Zealand’s University of Canterbury and an adjunct associate professor at Canada’s University of Calgary.

Moehrenschrager joined the Calgary Zoo in 1999 and founded its Centre for Conservation Research in 2003. He became the chair of the International Union for Conservation of Nature (IUCN) Reintroduction Specialist Group in 2014. It is made up of 150 global experts in more than 40 countries focusing on the restoration of endangered species. Recognizing the importance of the Zoo’s conservation and reintroduction activities, Moehrenschrager will be working with all departments to help imperiled species and ecosystems in Canada and around the world. He will take a leading role in continuing the Zoo’s efforts as one of Canada’s leaders in wildlife conservation.

New Executive Staff at Mystic Aquarium

Mystic Aquarium in Mystic, Conn., announced the appointment of Larry J. Rivarde to the position of senior vice president of zoological operations and business development. In his role, Rivarde will be responsible for leading animal husbandry, including marine mammals, birds, fish and invertebrates, in direct support of the mission programs at Mystic Aquarium. Life support systems, veterinary services and animal rescue and rehabilitation will also be under his stewardship.

Rivarde comes to Mystic Aquarium from the Audubon Nature Institute in New Orleans, La., where he has served as the vice president of the Audubon Nature Institute and managing director of the Audubon Zoo since 2001. With a background that also includes tenure as the chief financial officer of New Orleans City Park, Rivarde combines keen business acumen with a resolute focus on enhancing animal care and operations and improving guest experiences.

“Mr. Rivarde was appointed after a lengthy search considering some of the top animal husbandry and veterinary experts in the nation,” said Dr. Stephen Coan, president and chief executive officer of Mystic Aquarium. “His passion for animals, the mission of zoos and aquariums, and extensive management experience make him an outstanding choice for this key leadership role at Mystic Aquarium.”

The management of zoological operations will also see the promotion of long-time Mystic Aquarium chief veterinarian Dr. Allison Tuttle to vice president of biological programs. Tuttle will have direct responsibility for animal

husbandry and animal care, including veterinary services.

“Mystic Aquarium is committed to our mission of protecting our ocean planet through conservation, education and research,” continued Coan. “We are dedicated to providing the highest standards of animal care and guest experience. The appointment of Larry Rivarde and promotion of Dr. Allison Tuttle reflects our total commitment to this mission.”

Executive Leadership Changes at Shedd Aquarium



Shedd Aquarium in Chicago, Ill., announced that Tim Binder has been promoted to executive vice president of animal care where he now oversees Shedd’s animal care and animal health divisions.

“Tim has done a tremendous job of ensuring our dedication and commitment to both staff and our animals has remained paramount as an essential part of our culture and our mission. As an experienced and extremely knowledgeable leader who is respected not only at Shedd but throughout the zoo and aquarium community, I am proud to welcome Tim officially as a member of the Executive Leadership Team,” said Tedd Beattie, president and chief executive officer at Shedd.

With more than 35 years of experience in both fishes and marine mammal husbandry, Tim Binder is a trusted resource for counsel on animal transports, acquisitions, strandings and rehabilitations. In 2012, he was part of a team of marine mammal husbandry experts from leading U.S. aquariums that provided around-the-clock intensive care

FACES & PLACES

to a newborn beluga whale calf stranded in Bristol Bay, Alaska. This was only the second time such a rescue had been attempted at a North American zoological facility.

Before joining Shedd in 2009, Binder was director of husbandry at the Georgia Aquarium, in Atlanta, Ga., where he supervised the fishes, marine mammals, birds and animal health divisions. He helped assemble the team that successfully opened the new aquarium with a fully stocked collection in more than 8 million gallons of exhibit space. To accomplish this significant task, Binder drew upon his expertise to move several never-before-transported animals to Atlanta, including whale sharks and the Aquarium's first manta ray, Nandi.

Binder previously served as the vice president of zoological operations at Mystic Aquarium in Mystic, Conn., where he supervised the departments of fishes, marine mammals, birds, laboratory, facilities and stranded-animal rescue and rehabilitation. He also oversaw the animal side of a \$53 million expansion and renovation of

the Aquarium. Before that, he was a co-owner of Marine Life Aquarium in Rapid City, S.D. Binder also has assisted zoo and aquarium facilities in Europe, Asia, the Middle East and Africa with animal transports and developing staff training and husbandry advancements for their collections.

A veteran of countless rescue and rehabilitation efforts, Binder is a valued resource for aquatic animals in need. He has been featured in several documentaries, including the 2000 documentary *Whale Rescue: Stranded Friends*, which tied for Best Independent Film in the 2001 International Wildlife Film Festival awards for its portrayal of the successful rescue, rehabilitation and return to the wild of two juvenile pilot whales.

Binder is a professional fellow in the Association of Zoos and Aquariums (AZA), where he serves on the Annual Conference Program Committee. He is an active member of the International Marine Animal Trainers' Association, the International Association for Aquatic Animal Medicine and the Society for Marine Mammalogy.

Member Updates

Welcome New Members

AZA is pleased to warmly welcome new Professional Affiliate, Professional Fellow, Conservation Partners, Accredited Institutions, Certified Related Facilities and Commercial Members.

New Professional Affiliate Members

Julia Bates, Director - Volunteer Services, Dallas Zoo

Crystal Bernt, Guest Service Manager, Phoenix Zoo

Jacqueline Bershadt, VP Capital Planning, National Aquarium

Ann-Marie Bisagno, Supervisor Birds & Mammals, Adventure Aquarium

John Black, Business Operations Manager, Abilene Zoological Gardens

Marissa Danielle Blackburn, Education Program Specialist, North Carolina Aquarium at Fort Fisher

Syndi Castelluccio, Coordinator of Education Volunteers, Riverbanks Zoo

Lindsay Cokeley, Bird Keeper, Santa Barbara Zoological Gardens

Beth Comeaux, Director of Corporate and Foundation Relations, Minnesota Zoo Foundation

Tenley Davis, Kansas City Zoo

Oscar Dizon, Sponsorship Coordinator, Greater Los Angeles Zoo Association

Erin Dougher, Mammal Keeper, San Antonio Zoological Society

Anne Druhl, Marketing and Sales Manager, Greater Los Angeles Zoo Association

Daniel Elkin, K-12 Outreach Coordinator, Aquarium of the Bay

Jenn Fedesna, Animal Care Specialist, Racine Zoological Gardens

Marc Franzen, Animal Ambassador Trainer, Tampa's Lowry Park Zoo

Rachel Fritz, Vet Tech/Registrar, Red River Zoo

Matthew James Frohlich, Keeper, Columbus Zoo and Aquarium

Britlee Gaines, Chattanooga Zoo at Warner Park

Adam Garrett, Coordinator of Volunteer Services, Indianapolis Zoological Society, Inc.

Thomas James Gaskill, Informal Education Program Supervisor, Oregon Zoo

Billie Claire Harrison, Supervisor of the Aquatic & Reptile Center, Milwaukee County Zoological Gardens

Cecilia Hatton, Herpetology Exhibits Tech II, Virginia Aquarium & Marine Science Center

Karen Hays, Youth Programs Manager, Denver Zoo

Jared Michael Hitchens, Manager of Marketing and Volunteer Development, Friends of the Topeka Zoo

Laura Houston, Director School, Public & Youth Programs, Philadelphia Zoo

Eric Kaminsky, Zoo Business Manager, Zoo Miami

Dana Keeler, Vice President of Human Resources, Woodland Park Zoo

Pliny Keep, Environmental Services and Sustainability Manager, Woodland Park Zoo

Caitlin Kenney, Zoological Manager, Myakka City Lemur Reserve



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Amy Kerrick, Executive Assistant, Indianapolis Zoological Society, Inc.
Sarah King, Assistant Curator of Hoofstock and Marsupials, San Francisco Zoological Gardens
Keith Krause, Operations Manager, Virginia Zoological Park
Chelsea Lee, Zookeeper, Roosevelt Park Zoo
Stacey Ludlum, Zoological Designer, PGAV Destinations
Diana Elizabeth Major, Senior Aviculturist, SeaWorld San Diego
Annabell Marcum, Zookeeper, Potter Park Zoological Gardens
Matt Wade McHale, Propagation/Brooder Keeper, Zoo Miami
Katie Mentel, Reid Park Zoo
Samantha H. Mills, Major Gifts Officer, South Carolina Aquarium
Jacqueline Murray, Director of Marketing and Communications, Aquarium of the Bay
Patricia Noland, Manager, Constituent Giving Programs, Greater Los Angeles Zoo Association
Paige Rudasics, Educator, Abilene Zoological Gardens
LynnLee Schmidt, Assistant Curator Mammals - Birds, Landry's Downtown Aquarium - Denver
Carrie Scott, Senior Director, Advancement, Greater Los Angeles Zoo Association
Lacie Scott, Guest Experience Assistant Manager, Phoenix Zoo
Kerston Swartz, Public Affairs and Advocacy Manager, Woodland Park Zoo
Sarah Woodruff, Senior Zookeeper, Franklin Park Zoo

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New Professional Fellow Members

Julie Benbow, Executive Director of the Foundation, Sequoia Park Zoo
Jill Giles, Georgia Aquarium
Ashley Hartness, Senior Aquarist, Ripley's Aquarium
Dave Koontz, Director of Communications, SeaWorld San Diego
Allyssa Dunklin Leslie, Interpretive Programs Manager: Outreach and Cheetah Encounter, Dallas Zoo
Justin McKinniss, Strategic Partnerships, Columbus Zoo and Aquarium
Lynn Mento, Executive Director, Friends of the National Zoo
Candace Osunsade, Vice President of Human Resources, National Aquarium
Rhys Phillips, Park Services Manager, Naples Zoo
Carly Pope, Manager, Georgia Aquarium
Rachel Salant, Collection Manager - Animal Shows & Program Animals, Woodland Park Zoo
Amber Schiltz, Education Curator, Riverside Discovery Center

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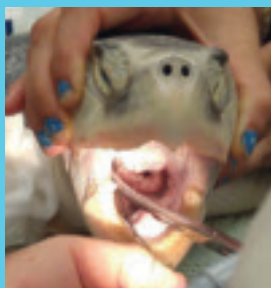
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EXHIBITS



Gorillas Take to the Treetops with Spring 2015 Opening of Gorilla Treeway

Great apes are on the move like never before with the 16 May opening of Gorilla Treeway, the newest addition to Philadelphia Zoo's first-in-the-world animal travel and exploration trail system, called Zoo360.

Gorilla Treeway is a 300-foot mesh engineered overhead passageway, extending 12 feet above the visitor path from PECO Primate Reserve, encouraging these magnificent primates to explore among the trees and expand their world. Through Gorilla Treeway—a five-foot-wide by six-foot-tall rigid trail structure—Kira, Honi, Motuba, Louis and Kuchimba, Philadelphia Zoo's western lowland gorillas, will enjoy long-distance travel, investigate a greater variety of environments and determine their own experiences.

Zoo360 is the cornerstone of the Zoo's transformative

master plan that provides more exciting and enriching experiences for animals and visitors alike, creating a more dynamic engagement as animals move along, above and across visitor pathways. Zoo360 is currently comprised of four trails—Treetop Trail, Great Ape Trail, Big Cat Crossing and now, Gorilla Treeway, with more on the way. This is another first at America's first zoo as well as in the world and continues the Zoo's commitment to excellence in animal care and to inspiring guests to conservation action.

"The opening of Gorilla Treeway marks another major milestone as we continued to transform the Zoo experience—quite literally taking visitors' engagement to wildlife to new heights," said Vikram H. Dewan, Philadelphia Zoo's president and chief

executive officer. "The Zoo experience is evolving and though Philadelphia Zoo is an organization steeped in history, we are on the forefront of this change—defining the zoo of the future."

In addition to the new trailway, additional expansions are underway for Big Cat Crossing and Treetop Trail. A ground-based extension of Big Cat Crossing will add 170 feet of walkway along the Zoo's Bird Lake for big cats to experience new waterfront vantage points. Treetop Trail, which is currently used by monkeys and lemurs, will connect to Great Ape Trail and Coquerel's sifaka exhibit—a highly endangered species. With this 200-foot addition, sifaka and other small arboreal species will benefit from the enrichment and excitement Zoo360 offers.

The opening of Gorilla

Treeway also illustrates the time-sharing capabilities of Zoo360. In colder months, the large felines from neighboring First Niagara Big Cat Falls will have exclusive access to Gorilla Treeway until the weather is suitable for great apes to venture outdoors. Over time, and through gradual acclimation, gorillas can move through Gorilla Treeway, while big cats roam the ground-based portion of Big Cat Crossing directly below them.

"We are seeing animals eagerly exploring the trailways and truly interacting with their environments," said Dr. Andy Baker, Philadelphia Zoo's chief operating officer. "We are seeing visitors stop in their tracks to marvel at animals they have seen at Philadelphia Zoo for years, but they are now seeing in a whole new way."

EXHIBITS

Capybara Exhibit Grand Re-Opening

The Chattanooga Zoo in Chattanooga, Tenn., announced the grand re-opening of the Zoo's capybara exhibit. The original capybara exhibit was built in 2009 and was home to one female capybara. When the Chattanooga Zoo acquired two more young female capybaras in June 2014, it was clear that there was a need for more space for all the capybaras to swim and play in their home. The capybara exhibit renovations were started immediately by the Chattanooga Zoo's facilities staff. The new exhibit is approximately 1,100 square feet in size with a waterfall feature flowing into a large pond able to hold 5,000 gallons of water. Zoo guests will be able to enjoy watching the Zoo's capybaras through two large observation windows

surrounded by hand crafted rock work.

Capybaras are native to Central and South America and reside both in savannas and rain forests near bodies of water. This species is semi-aquatic and is known as the world's largest rodent. Capybaras are social animals and typically live in groups with a dominant male, multiple females and their offspring. Their life span ranges from 8-10 years in the wild and up to 12 years in captivity. Currently capybaras are considered to be least concern of becoming extinct by the International Union for Conservation of Nature Red List of Threatened Species™.

"This exhibit is the proud product of a lot of hard work by the staff at the Chattanooga



Zoo," noted Darde Long, Chattanooga Zoo chief executive officer and president. "Our Zoo facilities staff worked diligently to make this exhibit outstanding. It is so reassuring to witness all different departments collaborating on this project to make sure we built an exhibit that met all

the naturalistic needs of this species, was keeper friendly and was interactive and educational for our Zoo guests."

Funding for a new graphic sign to go along with the new exhibit was provided by the Chattanooga Girls Leadership Academy as part of a study of animal behaviors in their habitats.



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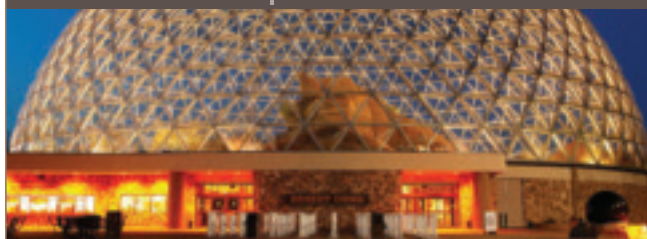
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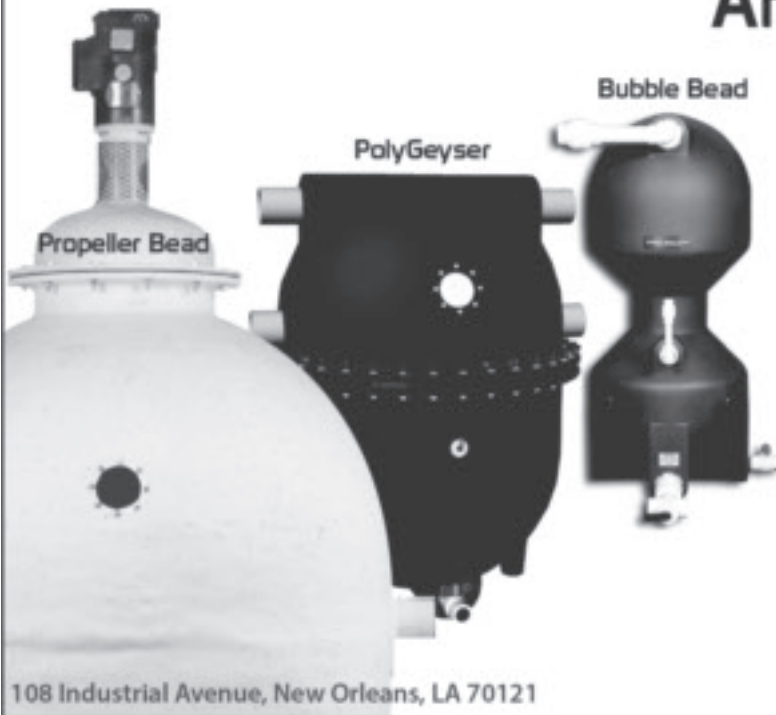


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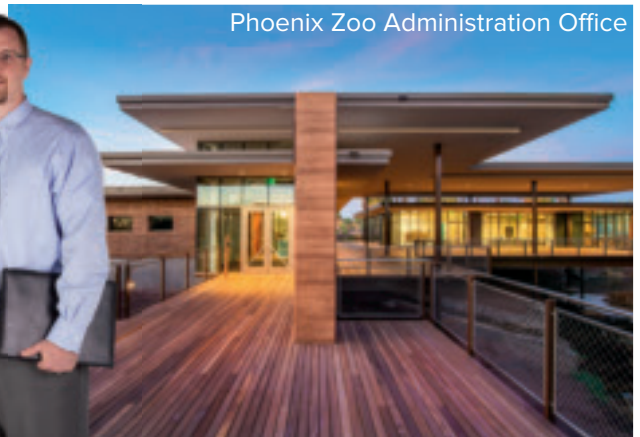
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Photos must be taken in 2015 or the last three months of 2014 by staff or volunteers at an AZA-accredited institution. *Connect* staff will judge the photos, and the winner will appear on the December 2015 cover. Other exceptional photos will be highlighted inside the magazine. The photos may also appear on AZA's website and/or other promotional materials.

Format for Submission:

Submissions should include the name of the photographer, the AZA institution, the species, the date of the picture and the equipment used. Only one photo entry will be accepted per photographer, so send in your best image. Pictures can include animals, people and zoo or aquarium scenes—if you think it will make a good cover, send it in.

Deadline:

The deadline for entries is 15 September 2015.

Format:

JPG, TIFF or EPS; 300+ dpi and

9"x12" in size (jpgs preferred).

Both electronic and hard copy images will be accepted—though electronic images are preferred. All submissions become the property of AZA and will not be acknowledged or returned. Send electronic images to Tim Lewthwaite at TLewthwaite@aza.org with "Photo Contest" in the subject line. Hard copies may be mailed to:

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AZA Publications Manager
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28 September - 4 October:
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Annual Conference
Woodland Park Zoo
Seattle, Wash.

<http://zooregistrars.org/conference.php>

OCTOBER 2015

7-11: From Good Care to Great
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Detroit Zoo
Royal Oak, Mich.

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11-16: 9th Annual Orangutan
SSP Workshop
Sedgwick County Zoo
Wichita, Kan.

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visitor_tickets-conferences.php](http://www.scz.org/visitor_tickets-conferences.php)

12-16: 2015 Zoos and Aquariums
Committing to Conservation
Denver Zoo
Denver, Colo.

www.zaccconference.com/

25-30: Managing Animal
Enrichment & Training Programs
Houston Zoo
Houston, Texas

www.aza.org/maetp.aspx

NOVEMBER 2015

4-5: Fruit Bat
Husbandry Course
Lubee Bat Conservancy
Gainesville, Fla.

[http://lubee.org/events/
husbandrycourse/](http://lubee.org/events/husbandrycourse/)

6-8: 2015 Southeast Regional
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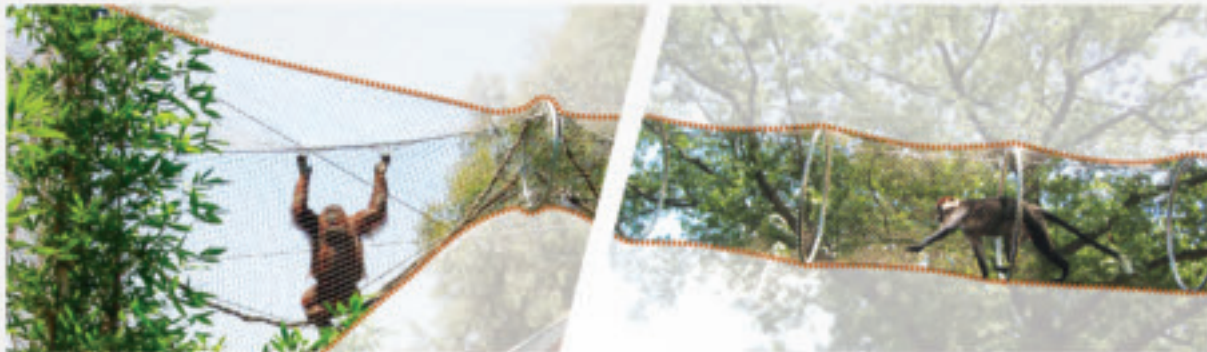
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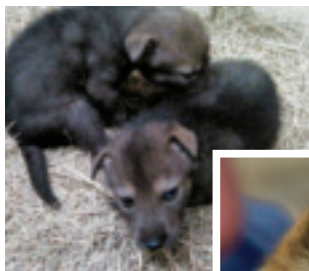
Births & Hatchings

CHEHAW WILD ANIMAL PARK

Albany, Georgia

The first red wolf pups born in the country this year were born at Chehaw.

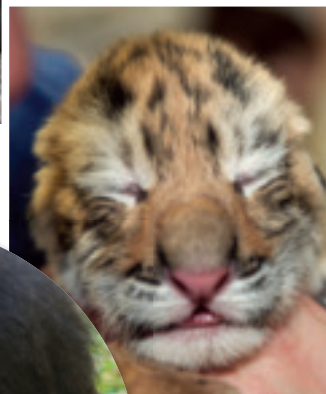
These four pups could, one day, help restore this critically endangered species. Chehaw's wolves are part of the Species Survival Plan® (SSP).



COLUMBUS ZOO AND AQUARIUM

Powell, Ohio

Two male Amur tiger cubs were born at the Columbus Zoo and Aquarium during the early morning hours of 21 April. The newborn cubs, weighing only 2.5 lbs., were initially monitored by the animal care team using a remote feed from a camera mounted in the den.



JACKSONVILLE ZOO AND GARDENS

Jacksonville, Florida

The Jacksonville Zoo and Gardens welcomed a second gorilla birth on 8 May. The parents, Madini and Lash, were recommended to breed by the Gorilla SSP.



LINCOLN PARK ZOO

Chicago, Illinois

A Japanese macaque, also known as a snow monkey, was born 2 May at Regenstein Macaque Forest. The baby is a male, and the birth was recommended as a part of the Japanese Macaque SSP.



CENTRAL FLORIDA ZOO & BOTANICAL GARDENS

Sanford, Florida

Two cotton-top tamarins were born in May. This is the first birth for the male and female tamarins at the Zoo. Cotton-top tamarins are one of several species at the Zoo that are involved in the SSP.



LEHIGH VALLEY ZOO

Schnecksville, Pennsylvania

A scimitar-horned oryx was born this spring during the Zoo's Party for the Planet™ celebration. This species is now extinct in the wild and is managed as part of the SSP.



For more Births & Hatchings, visit our website: www.azaanimals.org

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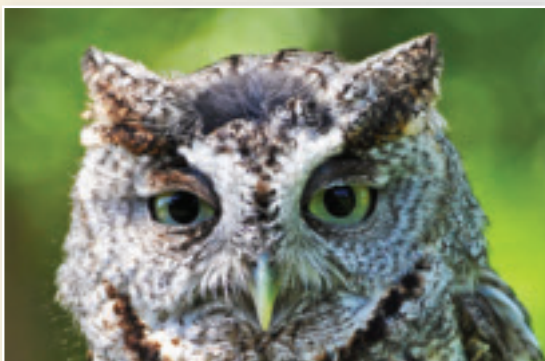
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