

Animal Tracks



The Role of Veterinary Medicine in Animal Wellness

The Zoo's Director of Animal Health spells out the importance of veterinary medicine.

+ TRAINING AT THE ZOO

Animal Welfare in the AZA



CONTENTS

3 ENVIRONMENTAL ENRICHMENT

Learn about the enrichment that the ACPs use with the animals!

4-9 TRAINING AT THE ZOO

Find out how the animals at the Zoo keep mentally and physically fit.

11 ANIMAL WELFARE IN THE AZA

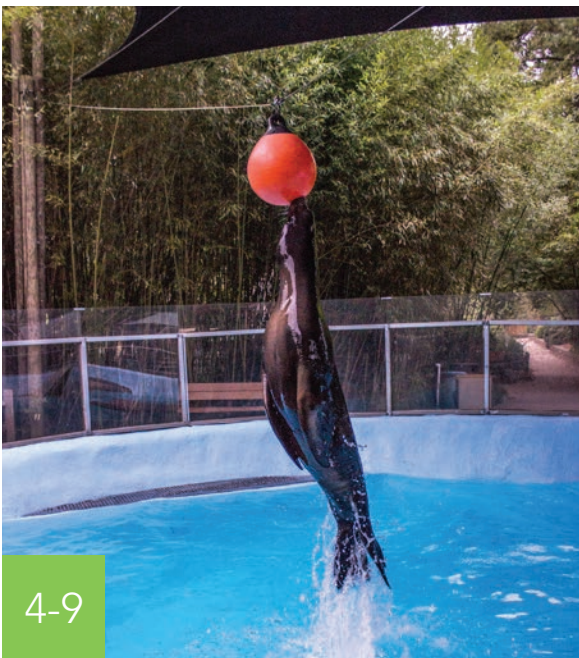
Hear how the Birmingham Zoo takes care of the animals in our care.

13 THE ROLE OF VETERINARY MEDICINE IN ANIMAL WELLNESS

The Zoo’s Director of Animal Health spells out the importance of veterinary medicine.



3



4-9



13



11

COVER PHOTO: The Birmingham Zoo’s new front entrance. Photo by Meghan Murphy.
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LETTER FROM THE DIRECTOR



Dear Members,

We did it folks! In late June, we were pleased to unveil our terrific New Arrival Experience & Welcome Plaza that completes phase 2 of our *Renew the Zoo Capital Campaign*. As a member of the Zoo, you have a unique place in our history — you inspire us to grow and add value to our legacy. Thank you for your tremendous support, your unwavering patience, and your energizing excitement! Every step moving us forward is a memorable milestone and a special shared experience that we all can celebrate.

I encourage you to bring your friends and family to visit your **new** Birmingham Zoo. See and enjoy all the new and amazing amenities. Take photos by the silhouetted Zoo plaque on the Donor Wall. Shop until you drop in the new spacious Gift Shop. If being outside in nature is what you love the most, I highly suggest sitting by the ponds for relaxing views of the waterfalls and Henley Park. Whatever your pleasure, our Zoo is the perfect place to peacefully unwind or have endless fun in the beautiful Alabama sun!

The best part... our Zoo is just getting started! We are currently working to expand and upgrade various animal habitats around the Zoo. Guests can look forward to the renovation of our current Predator building into a new Asian Passage exhibit (phase 3); including, creating a new habitat for our bobcat in Alabama Wilds with the addition of a new cougar, as well as a new golden eagle habitat. Also, plans have recently been completed for a new interactive flamingo habitat. We anticipate great things to come.

In this issue, we are bringing you behind-the-scenes as animal care staff share their unique stories of providing extraordinary quality care to our entire animal family. For decades, your Birmingham Zoo has been committed to exemplifying the ‘gold standard’ for animal welfare by meeting or exceeding the Association of Zoos and Aquariums (AZA) accreditation standards for modern zoological facilities worldwide.

Animals enrich our planet and our lives by helping us understand the natural world around us. AZA zoos and aquariums play important and complex roles in the conservation of animal species, preservation of wild and endangered populations, and animal welfare. Your Birmingham Zoo is proud to be your neighboring ambassador while creating a global community where all people value wildlife and wild places!

I am excited for our upcoming events, programs and projects as we continue to make your Zoo the best it can be: for our animals, our guests, our staff and volunteers, and for everyone in our community!

Sincerely,


Chris Pfefferkorn
President & CEO

MEMBER KIOSK: A NEW WAY TO ENTER THE ZOO!

Members can now enter the Zoo faster than ever! Simply head to our new scanning kiosks to enter into the Zoo quicker than ever before. No more waiting in line - bypass the ticketing booths and the new Membership Office!

Just a reminder, if you have not had the chance to get a new Membership card, stop by the new Membership Office at your convenience to get your new card printed.





BIRMINGHAM ZOO STRATEGIC PLAN

ANIMAL CARE & WELFARE

We aim to always provide animal care that addresses all of our animals' needs, from physical and nutritional to social and cognitive. This includes care that integrates responsible guest viewing, education, and ultimately contributes to conservation efforts and the advancement of scientific knowledge.

Objectives:

- (Animal Care) Provide exemplary animal care and well-being, leading with the best practices.
- (Staff Development) Invest in our staff and their knowledge and experience to ensure animals receive the best possible care.
- (Collection Planning) Create a responsible collection plan that we will house based on our animal care standards, with a focus on sustainability of populations in human care and conservation connections.
- (Nutrition) Provide appropriate nutrition for our animals based on known standards and experience.

INSPIRING PASSION TO
CONSERVE THE NATURAL WORLD



ENVIRONMENTAL ENRICHMENT

BY: STEPHANIE BRACCINI SLADE, PHD, VICE PRESIDENT OF LIVING COLLECTIONS

There are many facets to providing the best animal care that addresses the holistic needs of an animal, which includes mental and physical stimulation. Enrichment is meant to improve an animals' environment and care by encouraging natural behaviors and providing an outlet for natural instincts. In order to stimulate the brain and the body, we provide items for animals to play with, environments to experience, and new fun ways to obtain food.

Enrichment comes in many forms, targeting the many different sensory modalities through which animals experience the environment. It can be olfactory, or scent-based, using experiences like lavender spray on bedding, various perfumes spritzed around a habitat, or even the musk of an opposite sex, predator, or prey species.

Noises and sounds can be enriching as well, from the ambient sounds of nature to those of other individuals within a species. Auditory enrichment has been shown to lower rates of stereotypic behaviors and increase rates of social play in primates. This can be achieved by playing nature sound CDs or vocalizations recorded at other Association of Zoos and Aquariums (AZA) zoos to simulate the presence of social competition or other species.

The way a habitat looks and feels is also a form of environmental enrichment. Think about going home and rearranging your furniture - it would cause you to think more about where things go and how to navigate the space around you. We do the same thing for our animals, as they would encounter unknown and changing

spaces in a natural environment. This challenges them to think more and to move their bodies in new or different ways.

Stress can even be enriching in controlled and manageable amounts. Solving problems, thinking about how to deal with a new challenge, and exhibiting everyday coping mechanisms are good for animals and keep them cognitively stimulated and engaged in their surroundings. Animal Care Professionals utilize problem solving techniques as enrichment quite often. From simple puzzle feeders where an animal must move a food item through a puzzle, to solving a task to get a food reward, we encourage our animals to think creatively and stay sharp.

Enrichment is the best way to increase the level of care for our animals, as it addresses many of the needs of animals - social interaction, physical movement, thinking and problem solving, and fun! Sometimes enrichment comes in the form of something that is just fun to play with. The Animal Care Professionals are always adding new enrichment or changing things around, so be on the lookout for new and ever-changing enrichment!



HOW TO TRAIN YOUR SEA LION

BY: CELESTE HICKS, SEA LION ANIMAL CARE PROFESSIONAL III

Our Red Diamond Sea Lion Shows are fun, for our guests and the animals alike! We love being able to bring the sea lions up-close and personal to our guests. However, there is a lot of work that goes into training our sea lions.

We have two 11-year-old California sea lions, Giovanni (Gio) our female, and Farley our male. They have lived at the Birmingham Zoo for over 9 years and have learned more than 120 different behaviors. Our biggest priority is always the welfare of our animals. This means the most important behaviors are their husbandry behaviors like body checks, eye drops, tooth brushing, voluntary radiographs, injections, ultrasounds, and blood draws. The more that we can work with the sea lions to do these behaviors voluntarily, the more routine they become and the less stressful they are for everyone involved. Since sea lions are incredibly smart and motivated, we have the opportunity to train a wide variety of behaviors that are both mentally and physically challenging. Fan favorites include their jumps and flips, and of course their sweet dance moves.

We use positive reinforcement to train our sea lions, which means we reward the correct behaviors and ignore the incorrect behaviors. This is the same way you would train your dog, or your child, or your spouse! We utilize targets to ask the sea lions to position their bodies to complete the requested behavior. For example, the ball jump behavior

was trained using a long target pole. The Animal Care Professionals started by asking the sea lions to slightly jump out of the water. Then they raised the target pole bit by bit to ask them to jump higher and higher, until they jumped high enough to touch the orange ball. This is called using *successive approximations*, and it is a technique that allows the animal to succeed step to step towards the ultimate goal.

The time it takes to teach new behaviors can vary from minutes to over a year! For example, Farley learned how to do a whisker presentation in about 5 minutes, but his backflip behavior took more than 6 months to train. Behaviors related to veterinary exams tend to take a little longer to train due to the amount of equipment and the extra staff members around. This is when

we use something called *desensitization*. If you have a pet or a child, you have probably done this yourself, as well. Wherein *desensitization*, we expose the sea lion to the changes in small increments to keep the situation positive, and then we increase as needed.

This same method applies to how we train for the sea lion demonstrations. We work hard to keep our relationships positive with Farley and Gio. This helps them maintain the trust it takes to come out in front of hundreds of people they don't know. During the winter, the sea lions participate in training demonstrations instead of summer's larger shows. During the training demonstrations, guests are able to see the behaviors we are working on. However, when you come in the spring, you might actually have an opportunity to help us train and work on our performance! Each year brings a new theme and new behaviors to share with our guests. We hope you have been enjoying this summer's "A Day in the Life of a Sea Lion."

We welcome your feedback on Facebook or Instagram!

TEACHING THE BIG STUFF

BY: ADAM BROOKS, ELEPHANT MANAGER

Elephants provide a unique and rewarding challenge when it comes to their training and daily care, due to their high intelligence, large size, and personalities to match. It is important that the animal care

team creates a positive environment in which the elephants cooperate voluntarily with the animal care team and act as advocates for their own well-being. Our Animal Care Professionals always maintain a barrier between themselves and the elephants. The elephants can choose to participate in or leave a training session at any time. Luckily for us, they highly value the food rewards and the training session itself. While the food rewards are highly valued, none of the animals at Birmingham Zoo are required to work for their diets; they may get high valued items as rewards in training sessions or these treats may be added to an enrichment feeder. Diets are closely controlled for caloric intake and nutritional value.

Certain sections of the physical barriers are specially designed so the elephant can provide a requested body part on the people side of the barrier – for example, a small window through which the elephant can present his ear. This provides our team and veterinary staff better access to those areas of the body to provide the best possible care for the elephants. Blood draws from the ear, radiographs of the feet, and tusk care are just a few examples of routine procedures that the elephants take part in.

Because these behaviors are voluntary and built through trust, the stresses of these procedures are greatly reduced for the elephants. Training these incredible animals is not only important for their health management but also to stimulate and challenge their minds. In addition to medical related training, we also do exercise routines to keep them in good physical health and "fun" behaviors to stimulate their brains as much as their bodies. The Birmingham Zoo cares deeply for our big gray residents and we give them the best possible care by utilizing the elephants' choices, a relationship of trust, and a dedicated team of Animal Care Professionals.



DOTTING THE "I'S" AND CROSSING THE "T'S" ON TRAINING PRIMATES

BY: DANIELLE WILLIAMS, ZOOLOGICAL MANAGER, SOUTH AMERICA/PRIMATES

Animal Care Professionals (ACPs) use many tools in their daily care of animals who call the Birmingham Zoo home, including shovels, kitchen scales, and keen observational abilities, but one of the best tools at our disposal is the skill of animal training. Knowing when and how to apply training techniques during interactions with animals in our care greatly improves our capacity for continuous improvement of the level of welfare the animal residents' experience.

From the moment an animal arrives on grounds, whether by moving in from another zoo or being born here, ACPs are shaping their lives. At the core of our work is building relationships with these animals. We must get them accustomed to our presence, new homes and noises, and sometimes even new foods.

Early in the relationship, we might work on behaviors such as "shifting" from guest viewable habitats to off-viewing rooms, a basic behavior that allows us to set up enrichment, repair habitat furniture, and better monitor dietary intake and fecal output.

As the relationship between animal and ACP develops, an ACP may use their training skills to guide positive interactions between resident housemates or build an animal's confidence when it encounters new situations and items. Additionally, the animal care staff brings their relationship with an animal and their training techniques together to encourage the animals to be active participants in their own healthcare.

Training for medical behaviors can be both a challenging and rewarding process. Much like young children, the animals in our care do not understand the equipment we use to take care of them or that situations that are temporarily uncomfortable can benefit them in the long run. Two great examples of this process that we have achieved here at the Birmingham Zoo are training a male orangutan for

dental radiographs, or x-rays, and working with a male De Brazza's monkey for voluntary blood collection.

During daily interactions, South America/Primate staff noticed a small bump under our male orangutan Oliver's nose and increased pinkness around his upper incisor. One way to assess the issue would be to anesthetize Oliver and give him a check-up, but this would be the equivalent of a person going to the hospital and getting prepped for surgery without knowing whether surgery was truly required. Instead, the veterinary and animal care staff worked together to teach him to sit for dental radiographs. Oliver already knew how to open his mouth and hold it open when asked, as this is part of his daily routine, but now he had to learn to do this at a particular location – a special opening that previously had been installed for prenatal ultrasounds with Oliver's partner, Lipz. He also had to learn to let animal care staff place a small x-ray plate in his mouth with a pair of forceps while veterinary staff held the radiograph machine in close proximity. By working through each of these steps carefully, the team is now able to monitor Oliver's tooth root to better decide if or when a dental procedure is necessary.

Similarly, Huey, a male De Brazza's monkey, learned to allow veterinary staff to collect blood. Huey was well-practiced at presenting various body parts daily, as asked, so animal care staff could check him thoroughly. He was also comfortable permitting staff to inject him in the hip with anesthetic medication when it was time for his check-ups. ACPs were able to combine these behaviors, as well as familiarizing Huey with the presence of the veterinarian or veterinary technician. By utilizing behaviors he already knew and guiding him through the hurdles of becoming comfortable with new people, we have been able to regularly check Huey's blood after he overcame an infection last year.

With both situations, training facilitated the animal care team in providing a higher level of care for the animals, and the best part is that each of the animals chose to participate in the process!



Oliver, the Zoo's male orangutan, participating in the process of holding for dental radiographs with local veterinary dentist, Dr. Bert

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HOW TO PREPARE FOR RHINO CARE

BY: AMY TOMAN, ZOOLOGICAL MANAGER, TRAILS OF AFRICA

Who doesn't enjoy a nice relaxing day at the spa? Maybe you enjoy a deep tissue massage or even a mud bath to promote healthy skin. Regardless of your choice for a relaxing day, did you know that even the rhinoceros at the Zoo receive spa days and are pampered on a daily basis?

As a part of our Southern white rhinoceros training program, the animals participate in their own health care so that we can provide them the best care and welfare possible. The Animal Care Professionals in the Trails of Africa department have built strong relationships with our rhinoceros, and provide them with choice in each of their training sessions. All three of our rhinoceros have extensive training programs that are built on a foundation of respect through positive reinforcement training methods.

They regularly receive fly spray, baths, brushing for exfoliation, mud baths, voluntary blood draws and vaccinations, and mineral oil treatments on dry spots for their horns. Their horns are keratin-based, just like our hair or fingernails, and can occasionally have an appearance of split ends or fraying. The mineral oil acts as a deep conditioner for their horns. Our rhinoceros' favorite training sessions are when they receive full mud baths. In addition to their mud wallows, we help them

cover those difficult to reach areas with fresh mud to protect them from sunburns and flies.

In addition to all of the pampering, they also help us learn a great deal about rhinoceros reproduction in human care. Our females have breeding recommendations from the Species Survival Plan® (SSP) for Southern white rhinoceros, an Association of Zoos and Aquariums (AZA) based program for sustaining rhinoceros populations. The Animal Care Professionals in the Trails of Africa department monitor the estrous cycles of the females very closely by working with our conservation partner, the South East Zoo Alliance for Reproduction and Conservation (SEZARC). We collect fecal samples from both of our females three times a week for progesterone monitoring in case of future pregnancies. We also coordinate closely with our volunteers and seasonal employees for observations. They can fill out an ethogram or chart of observed behaviors during an active estrus cycle.

Since our rhinoceros have been paired together for several years but have not bred successfully on their own, the next steps are being considered for an artificial insemination program. Both female rhinoceros are trained for weekly voluntary transrectal ultrasounds. Since their skin is so thick, nearly 1-2 inches in some places, an external ultrasound is not a viable option. Their weekly ultrasounds allow us the opportunity to learn more about their natural estrous cycles and reproductive health.



All of our rhinos are trained to allow regular blood collection from their back leg (pictured), as well as their ear.



TRAINING THE G.O.A.T. (GREATEST OF ALL TIME)

BY: ANIMAL CARE PROFESSIONALS, CHILDREN'S ZOO

While the Birmingham Zoo has a variety of exotic animals throughout the Zoo, we also have Alabama-native animals in the Junior League of Birmingham – Hugh Kaul Children's Zoo and Alabama Wilds area. The native mammals in the Children's Zoo are on a consistently inconsistent routine. This mimics what their life might be like in the wild and keeps the animals guessing, which helps to prevent stereotypical behaviors. The Children's Zoo has a wide range of free-contact animals, which means the Animal Care Professionals (ACPs) can be in direct contact with the animals, though there are a few species for which we require a barrier between the animals and the ACP, like the North American black bears.

Each animal has a primary trainer and all the animals are trained using positive reinforcement. Some behaviors are taught to challenge the animal's minds and bodies, and some are intended to gain the animals' voluntary participation during veterinary exams and procedures. We do everything we can to make sure the animals are active participants in their own medical care. This helps reduce the amount of time for certain medical exams, and can even eliminate the need to anesthetize an animal for medical care. Many of our animals are trained to accept vaccinations, blood draws, and ultrasounds.

In addition to using positive reinforcement for medical procedures, we also use training to ensure our animals are getting the exercise they need to stay healthy. Every morning (as long as there is good weather) at 9:30am, the Zoo's dwarf Nigerian goats and Spanish goats go on a goat walk. This provides enrichment, which helps satisfy both the physical and psychological needs of the animals and allows them to make choices. It also helps exhibit their natural behaviors, like browsing in the woods. The Zoo's goats walk in a herd with a "leader" and a "follower" ACP.

Separate from the walk, the goats are also escorted to the North American black bear habitat to browse - while the bears are safely in their indoor habitat, of course! This allows for scent enrichment for both the bears and the goats, while also providing a unique landscaping opportunity. This type of enrichment teaches the goats to be more confident by training them to be more comfortable with the scent of the bears. Learning this confidence allows the goats to be more adaptable to new situations.

The goats can also be spotted at the corral, near the Alabama Barn in the Children's Zoo. The corral allows visitors a hands-on experience with the goats. The goats are trained to be well-mannered and can receive grooming by the visitors, which helps to provide positive enrichment for them, and a fun interactive experience for our guests.

The goats aren't the only animals that go on walks! Patty, the guinea forest hog, also goes out for walks through the Zoo as part of her enrichment. Patty walks on a harness and is taught to stand still on a "station" to allow her ACPs to put the harness and leash on her before she exits her stall in the Alabama Barn. This walk encourages Patty to express her natural behaviors and gives her an opportunity to get more exercise and see the varied Zoo environment.

Many of our birds of prey are brought out for "walks" as well. Most of these birds are rehabilitation animals that are unable to fly, thus deemed unreleasable by State authorities. In order to still enrich their lives in creative ways, we can have the bird perched and secured on the arm of the Animal Care Professional and walk them around the trail. Another enrichment method that we commonly utilize is scattering their food throughout their habitat so they can hop and walk to their food for exercise.

Be sure to stop by the Children's Zoo/Alabama Wilds on your next visit to the Birmingham Zoo! From the goat walk every day at 9:30am, to the Alabama Barn, to the Alabama Wilds Trail, there are plenty of opportunities to see some amazing animals native to our great state!





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ANIMAL WELFARE IN THE AZA

BY: LORI PERKINS, DEPUTY DIRECTOR

Welfare is the cornerstone of animal care in the Association of Zoos and Aquariums (AZA). But how do we define and understand a fluid concept like welfare? Animal well-being ranges on a continuum from very bad to very good – while we may all agree on what is definitively positive and what is unquestionably negative, there is a large gray area between the two extremes, with no clear or objective dividing lines. It's also important to recognize that animal welfare must be assessed at the individual animal level, not at the group or species level – good welfare will look different for various individual animals, just as the things that make people feel happy and comfortable vary for various individuals. Welfare is a relative concept, not an absolute, and thus there is no single measure of welfare – we must look at multiple variables over time to understand an animal's overall state of well-being. And finally, welfare is a quality of the animal, not a thing that we provide to an animal. We don't give an animal good welfare – we provide an animal with conditions that enhance its potential to experience good welfare.

So how can we maximize our animals' potential to experience good welfare? AZA's Animal Welfare Committee (AWC) is charged with leading the collective professional effort to continually improve our ability to enhance the well-being of the animals in our care. The AWC defines animal welfare as an animal's collective physical, mental, and emotional states over a period of time. An animal typically experiences good welfare when it is healthy, comfortable, well-nourished, safe, able to develop and express

species-typical relationships, behaviors, and cognitive abilities, and is not suffering from unpleasant states such as pain, fear, or distress. We can assess this potential by examining six key areas:

1. **Nutrition** – a suitable, species-appropriate diet that is provided in a way that ensures health and vigor, both behaviorally and physically.
2. **Environment** – an appropriate environment that encourages opportunities to self-maintain and promotes ongoing comfort and safety.
3. **Health** – good physical health including access to a preventive healthcare program as well as rapid diagnosis and treatment of injury/disease to ensure wellness through all life stages.
4. **Behavior** – high-quality habitats and appropriate social groupings that encourage species-appropriate behaviors and meet each individual's social and developmental needs.
5. **Choice and control** – the opportunity to exercise choice and control to enable animals to seek out and achieve individual goals.
6. **Affective or mental states** – the opportunity to experience predominantly positive emotional states and to minimize negative experiences.

AZA promotes the understanding that if these 6 key variables are in place and are effective, then we have enhanced the welfare potential of our animals. At the Birmingham Zoo, animal welfare is our highest priority. We embrace AZA's welfare focus by continuously evaluating our procedures related to animal housing, management, and care. Our Animal Care Professionals assess animal welfare on a daily basis through direct care and observation, as well as through a more critical and formalized process using science-based action plans. We believe that we have an ethical responsibility to ensure the well-being of the animals in our care, and a professional responsibility to help advance animal welfare science. This is an obligation we take seriously and carry happily, as we work to continually enhance the well-being of the animals we are privileged to care for.

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BEHAVIORAL OBSERVATIONS

BY: STEPHANIE BRACCINI SLADE, PHD, VICE PRESIDENT OF LIVING COLLECTIONS

With our Strategic Mandate of proving exemplary animal care, there must be a level of assessment present to evaluate our forward progress and allow for realignment. This is where science comes into play. Animal Care Professionals (ACPs), students from nearby universities, staff from other departments, and volunteers can all be trained to observe, record, and report back on the behaviors of our animals. This way, we can assess what we are doing, for better or not, and adjust our programs based on the reaction, behaviors, and overall outcome of our practices.

Much like with children, who is watching makes a big difference. ACPs carry meaning to their presence, usually acting as a prompt for something about to happen. This can cause animals to focus more on them and not engage in natural behaviors. In these instances, it's helpful to have an observer who the animals don't know. But it's also pertinent to ensure observational data is consistent and reliable. Behavioral scientists use

ethograms, or a collection of detailed animal behaviors, to focus on and record. Each observer must be trained on this list and reach a level of reliability before their observations are used.

How we use observations varies drastically. At the most basic level, to answer simple curiosity questions about our animals: what do they do all day? Do they interact with each other? How do they use their environment? The data can also be used to assess and improve animal care and wellness. Only through knowing how animals interact can we be sure they are thriving.

The Birmingham Zoo is constantly adapting, based on new observations and how the animals react to various daily enrichment and trainings. Each day, we are thinking outside the box to help provide the best care we possibly can for these animals. Next time you visit the Zoo, be on the lookout for one of the animal observers. You might even make some observations of your own!

THE ROLE OF VETERINARY MEDICINE IN ANIMAL WELLNESS

BY: STEPHANIE MCCAIN, DVM, DIPL ACZM DIRECTOR OF ANIMAL HEALTH

Animal wellness is a combination of an individual's physical and emotional health, and the Birmingham Zoo Veterinary and Animal Care teams work cooperatively to maximize both. With such a wide variety of species, this takes a lot of knowledge from all of the staff involved in an animal's care.

A key component to an animal's physical health is our veterinarians, both of whom have undergone advanced training in zoo animal medicine to provide veterinary care for the many different species living at the Zoo. Zoo animal medicine is ever advancing, just as human medicine is. Our Zoo veterinarians must keep up with new research and are constantly improving things such as anesthesia protocols, which help an animal safely sleep through a check-up, and medical treatments. We utilize a lot of the same tools as are used in human medicine, including ultrasound, endoscopy, and cold laser therapy. The big difference is all of our equipment must be portable. Some of our patients can't come to the hospital so we have to take the hospital to them!

While it is essential to daily husbandry for our Animal Care Professionals (ACPs) to have a good relationship with the animals under their care, it is also important for the veterinary team to have a good relationship with the animals. The ACPs at the Zoo set the foundation for the animals to participate in their healthcare by training behaviors such as blood collection, ultrasound, and more. However, when the veterinarian or veterinary technician shows up to perform the procedure, it is vital that the animal not be afraid and still want to participate in the behavior. Sometimes this relationship-building takes a little extra time in the form of many short visits with the animal during and/or outside of regular training sessions, but it is worth it in the end. The more medical behaviors an animal can do voluntarily with the help of the veterinary staff, the safer it is for

the animal and the better able we are to monitor the health of the animal on a regular basis. A great example of this is when our male De Brazza's monkey had an infection in his blood. He allowed us to draw blood on him regularly to monitor his body's response to treatment - something that would have required a fairly risky anesthesia, if he had not already been trained for voluntary blood collection.

While our veterinarians know a lot of things about a lot of animals, they can't know everything! We rely on fabulous support from our local medical community to help us with certain cases. We have a number of both veterinarians and human physicians with whom we consult, including ophthalmologists, cardiologists, dentists, surgeons, pediatricians and more! We are very fortunate to have such a supportive network of dedicated professionals who are always willing to help, sometimes on very short notice.

The Animal Care and Veterinary teams rely on each other to optimize the well-being of all of the animals in our care. Neither team could do their job without the support of the other. We work so well together because we share the same goal of giving each animal the best life possible.

Our male giraffe, Jalil, is trained to allow voluntary blood collection for health assessments.

Blood collection on a toad to evaluate its health.

Collecting a blood sample to recheck an infection on Huey, a male DeBrazza's monkey.



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DISHIN' THE FACTS ON ANIMAL NUTRITION

BY: STEPHANIE MCCAIN, DVM, DIPL ACZM DIRECTOR OF ANIMAL HEALTH

From the smallest fish to the largest elephant, and everything in between, Birmingham Zoo staff provides a healthy, balanced diet to every animal in our care. Each animal's diet is prepared fresh daily by our Animal Nutrition Center (ANC) technicians and Animal Care Professionals (ACPs), and, depending on the species, may include anything from produce to meat to fish to mice to hay to pelleted feed and more!

Similar to the way you may buy a bag of dog food or cat food, we actually buy bags of flamingo food and primate food. The ANC carries more than 40 types of bagged chow to feed the wide variety of species for which we care. The Zoo receives fresh, restaurant-grade fruits and vegetables twice a week, and, while preparing diets that contain this produce, we use the rule, "if you wouldn't eat it then don't give it to the animal." Of course that rule doesn't apply to the animals that eat raw fish or rodents (although we do have guidelines to evaluate the quality of those items as well)!

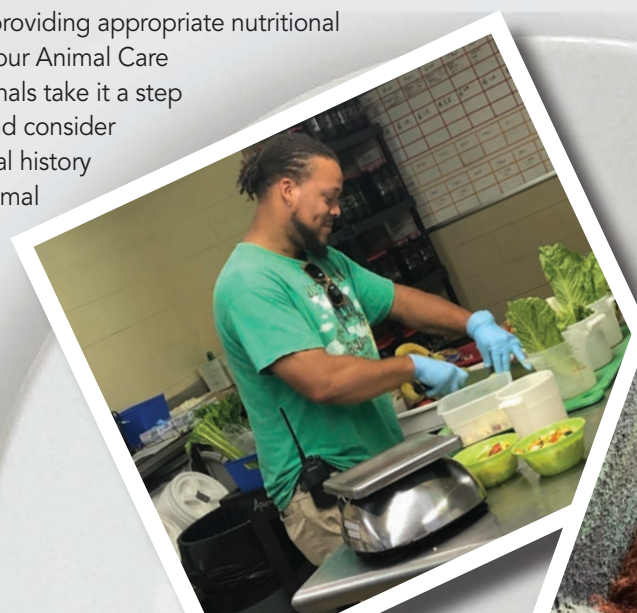
When developing animal diets, we consider what the animal would naturally eat to best mimic the same nutritional content. Protein, fat, calories, and carbohydrate content of food items are just a few of the categories considered. We regularly review and adjust an animal's diet based on season, age, weight, body condition, reproductive status, and a variety of other factors. As zoo animal nutrition is a continuously growing field, we also work with a veterinary nutritionist to help ensure we stay up to date as new information becomes available for different species.

Beyond providing appropriate nutritional content, our Animal Care Professionals take it a step further and consider the natural history of the animal

to determine how best to feed them. For example, in their natural habitat, a North American black bear will spend a large portion of their day walking and foraging for food, particularly during the fall when they are gearing up to den over the winter. While it would be easy to feed our bears out of a bowl twice a day, our ACPs choose to scatter food across the bear habitat multiple times a day so the bears mimic that natural behavior. At the opposite end of the spectrum, some snakes only need to eat once every few weeks. It is important that our ACPs that care for snakes select the proper size of rodent for each snake to avoid under- or over-feeding, and adjust the size of food items as the snake grows.

One important aspect of nutrition for many of the animals that call BZ home is browse. Browse is any plant material, including leaves, stalks, and sticks, that an animal may eat. Browse is important for proper dental wear and maintaining a healthy intestinal tract for many species, including primates, giraffe, and elephants, to name only a few. We use plants right from Zoo grounds that we know the animals like and that are safe for them. Our ACPs are trained by local horticulturists to identify a variety of healthy and safe browse plants, as well as those that may be toxic and must be avoided.

Some animal diets are simple and may contain only one item, while others are very complex and offer a variety of items that may vary every day of the week. Regardless of the species, our Animal Care Professionals, Animal Nutrition Center technicians, and Veterinarians work together to provide the best nutritional program for every individual!



VOLUNTEERS AT THE ZOO!

BY: CASEY HOBBS, VOLUNTEER MANAGER

Every day, volunteers give their time and energy to the Birmingham Zoo. Since the beginning of the year, over 100 volunteers have donated nearly 4,000 hours of time with activities ranging from educating guests about our resident animals to staffing our special events. The heart and soul of our adult volunteer program is our docents, 12 of which make up a quarter of all Birmingham Zoo volunteer hours. This summer, we are excited to expand our docent program with the goal of increasing opportunities for our guests to interact with a knowledgeable, dedicated, and skilled volunteer teacher. We are grateful to begin this process with a solid base of support from our current docents, some of which have been volunteering 20 years or more at the Birmingham Zoo.

Beyond the visible guest interactions in which our docents and volunteers excel, our department has been busy behind-the-scenes creating animal enrichment items for holidays and every day. Our volunteers were a huge part of putting together our Valentine's Day enrichment items this past February and recently contributed their time to putting together items for World Animal Weekend.

Another opportunity docents, and all volunteers, have to contribute meaningful time and service is in our animal observations. Each spring and summer, as we welcome chicks, cubs, and more into our Zoo family, volunteers are tasked with observing the interactions between the animals and their young. Volunteers monitor these interactions to ensure animal safety and further our research.

There are so many ways, both visible and behind-the-scenes, that volunteers contribute to our guests' (and animals') experience. Visit birminghamzoo.com for more information about becoming a volunteer at the Birmingham Zoo!



ANIMAL WELLNESS CAMP AT THE ZOO

BY: CHRISTINE LEWIS, ON-SITE PROGRAMS COORDINATOR

How do you take blood from a rhino? What goes into an animal's annual veterinary exam? What are the nutritional needs of a lion? All of these questions and more are being explored during the high school Animal Wellness sessions at Summer Zoo Camp.

At the Birmingham Zoo, we strive to protect the natural world, not only through excellent animal care and conservation efforts, but also by inspiring and informing the next generation of Animal Care Professionals. Zoo Keeper camp has been a long running camp at the Birmingham Zoo, creating opportunities for 6th-8th graders to explore what it means to be a Zoo Keeper. But, a career in animal care can take many forms beyond that. The Animal Wellness camp at the Birmingham Zoo is designed to expose a small cohort of 9th-12th graders to animal care careers and the methods we use to ensure that our animals are happy and healthy.

We keep this camp intentionally small in order to provide campers with the best opportunity to interact with and observe staff in spaces that cannot accommodate larger groups. Not only do campers observe and assist with the day to day care of some of our resident animals, but they also have the opportunity to explore preventive care with our veterinary staff, speak with our dedicated nutrition team, explore training as a husbandry tool, learn about animal care and conservation from our Vice President of Living Collections, and so much more.

One of our goals through this immersive experience is to expand our campers' future plans by exposing them to career opportunities that they may not have otherwise considered. This camp helps to shed light on all that we do to care for our resident animals at the Birmingham Zoo and promote careers in science, education, conservation, and other aspects of the zoological profession.

Above Caption: A group of Animal Wellness Campers observe an annual checkup on one of the Zoo's coyotes.

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EVOLVING ANIMAL HABITATS

BY: MARCIA RIEDMILLER, MAMMAL CURATOR

Many zoos today, including the Birmingham Zoo, are moving toward naturalistic habitats with more of a direct focus on the physical and psychological well-being of the animals. We are looking at animal behavior as it relates to their response to their environment, and their ability to engage in beneficial species-typical activities. As zoo professionals, we continue to learn daily and strive to continue to understand more about the animals in our care. Many of you likely remember Monkey Island – a habitat built around 1955 that was all concrete with a water moat. Some of you may even remember the monkey bars, swing set, and doll house on the island. While this habitat made it easier to see the animals, and it allowed guests to feed the monkeys back in the day (peanuts and loaves of bread were the popular food choices thrown to the animals), it probably did little for their well-being. Spider monkeys live in the tropical rain forest and find most of their food in the treetops.

In 1999, Monkey Island was torn down and the spider monkeys were moved to the Primate building where they have climbing structures, natural substrate, and two habitats to alternate between. The current bull elephant habitat was built in Monkey Island's former location. This large, 2 acre elephant habitat was designed with the elephants in mind. They can choose to take a swim, take dust baths, toss logs, push down trees, and do pretty much what an elephant does – be an elephant!

Our jaguar habitat is another great example of giving the animal choices. Khan, the Zoo's jaguar, can hide under the bamboo, as he would in the wild. The Animal Care Professionals strategically trim the bamboo so he still feels like he's hiding, but guests can see him, if you look closely. He also has a pool where he can catch live tilapia. When lounging, he can choose to hang out on the large tree and sun himself. Giving the animal choices and the ability to make decisions challenges them, as it does in the wild. The Birmingham Zoo strives to achieve the best possible care for the animals in our care by meeting and exceeding modern zoological standards. As your Zoo moves forward, we will continue to make the animals' well-being our primary focus.



At Alabama Power, we believe in supporting the things that make our great state a better place to live. The Birmingham Zoo exemplifies this idea by helping to protect animals and unite our community through wildlife education.

We proudly support the Birmingham Zoo.



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KIDS KORNER

The Animal Health Team at the Birmingham Zoo uses a variety of tools to assist in animal care and ensure the well-being of our zoo's resident animals. One important tool they use is the **radiograph**. Radiographs use electromagnetic radiation (or X-rays) to capture images of the bones and internal structures of animals. The Zoo's veterinarians may use radiographs to evaluate broken bones or to look for a foreign object that a patient swallowed.

Take a look at these radiographs and match them with the name of the animal listed below:

1 - Red Tailed Hawk _____

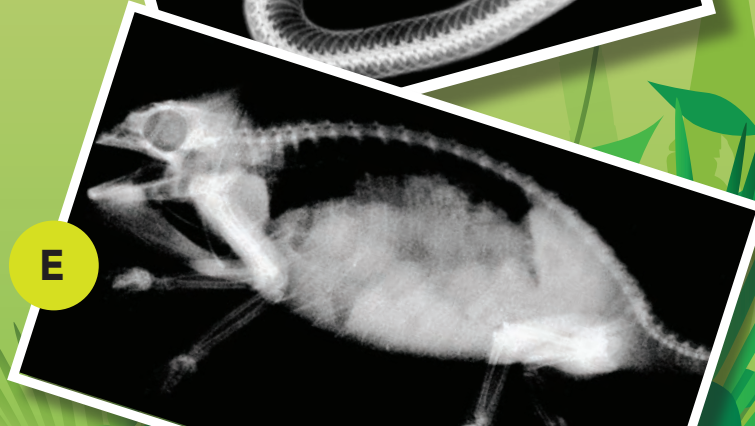
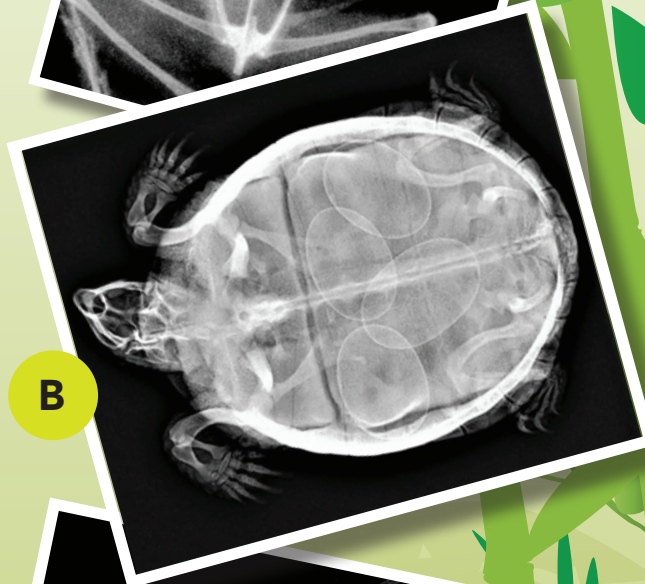
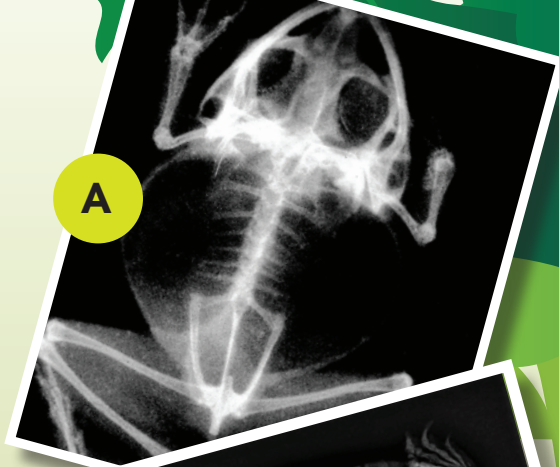
2 - Chameleon _____

3 - Turtle With Eggs _____

4 - Leaf Frog _____

5 - Python _____

ANSWER KEY: A(4) B(3) C(1) D(5) E(2)



COMMUNITY FOUNDATION OF GREATER BIRMINGHAM AND THE BIRMINGHAM ZOO

The Community Foundation of Greater Birmingham was founded in 1959 by a group of generous, dedicated leaders as a public endowment to support enduring change and success for the community. Although the issues facing the community have changed over the past six decades, the Foundation's commitment to supporting the region remains steadfast.

Throughout its history, the Community Foundation has supported the work of the Birmingham Zoo. In recent years, grants from the Foundation have supported the creation of the Junior League of Birmingham – Hugh Kaul Children's Zoo, Trails of Africa, and the Asian Passage. In 2018, the Foundation awarded a grant to improve the Alabama Wilds visitors' experience by building an outdoor classroom.

President and CEO of the Birmingham Zoo, Chris Pfefferkorn stated, "The Community Foundation of Greater Birmingham has been a leader in supporting the significant growth that the Zoo has experienced during the past 20 years. We are so appreciative of the Foundation's generous gifts to help us expand while improving the quality of life in north central Alabama."

In addition to the Foundation's regular grants, a number of individuals, families, and corporations continue to support the Birmingham Zoo through their Donor Advised Funds at the Community Foundation. The collective impact of these generous donors has helped the Zoo provide educational programs, support conservation efforts, and connect members of our community with the natural world.

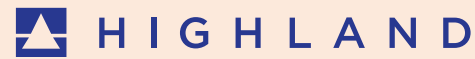
"As part of our new strategic planning process, we spent the last year listening to members of the community asking about the most important issues facing our region," said Christopher Nanni, President and CEO of the Community Foundation. "Building on existing assets and creating communities that are vibrant, connected, healthy and safe are a top priority for everyone. The Birmingham Zoo is a vital asset for our thriving community."



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Food and beverages will be available for purchase.

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UPCOMING EVENTS

August 2019

3 Pajama Jam (Night Event)

17 Pancakes and Princesses

17 Fairytales and Frogs

Now-August 28 Member Mornings: Wednesday Mornings

September 2019

13 IBERIABANK ZooGala (Night Event. Ages 21 & up.)

22 Sundaes in the Park (Member Appreciation Event)

October 2019

6 La Celebración (Hispanic Heritage Event)

11-13 & 17-31 Boo at the Zoo Presented By Wells Fargo



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