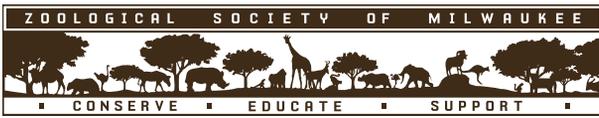


Alive



Inside

- Welcoming Two New Giraffes
- How Do We Transport Big Animals?
- Kids, Have Fun With Fish!
- Tales (and Photos) From the Congo
- Why She Stayed 12 Years at Summer Camp



The mission of the Zoological Society is to take part in conserving wildlife and endangered species, to educate people about the importance of wildlife and the environment, and to support the Milwaukee County Zoo.

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CEO's Letter



Last January I wrote about anticipating the arrival of at least one new giraffe in 2013. Happily, we now have two. Marlee arrived in mid-October and Ziggy came last May (see cover and page 15). They're both young and female and have the potential of eventually breeding with our male Bahatika. How did we get these tall creatures to our Zoo? Learn about the challenges of transporting animals from other zoos to Milwaukee (page 4). Since giraffe matriarch Malinde passed away in June 2012, the Milwaukee County Zoo has been eager to increase its herd size. Generous donors to the Zoological Society of Milwaukee (ZSM) came forward to help. The Bernie Ziegler family, in memory of Bernie's wife, Elizabeth "Liz" Ziegler, made a major donation to bring the two giraffes here and established a giraffe endowment. Bernie Ziegler, who was a very active member of the Board for about 20 years, is an honorary Board member and still an active ZSM supporter. Gordana and Milan Racic established the Reticulated Giraffe Endowment to support the Zoo's giraffe breeding and management program. Other donors who contributed: Dr. Craig Young and Dr. Sharon Busey, Sandy and Jerry Hafemann, Linda Levengood, James and Susan McNeely, and Judy O'Callaghan. We are blessed with wonderful supporters and extend our deepest thanks.

Dr. Robert (Bert) Davis,
 Chief Executive Officer

Winter: January-March 2014

Volume 34, Issue 1

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SUMMER CAMPS:

An Insider's View



Above: At age 10, Alexia attended the Zoological Society's Art Club class. Margo Pactanac photo



Alexia Smits, 14, takes notes in Wolf Woods at Careers Camp. Richard Brodzeller photo

Below: At age 11, Alexia (left) and Alexandria Cashmer, 11, attended Grossology camp. Julie Cheng photo

When school ended last June, 14-year-old Alexia Smits knew where she was headed: the Milwaukee County Zoo. For 12 years, Alexia has taken Zoological Society of Milwaukee (ZSM) summer camps, even repeating ones she's already attended. "It's a great way to spend a summer day and you may learn stuff that you didn't last year," she says. Mom Heidi Willems Smits notes that Alexia began at age 2 because it was an activity they could do together (for ages 2-5). Every year since, Alexia has wanted to return. "Kids love learning about animals," says Willems Smits. The ZSM makes it fun with hands-on activities, art in every class or camp, and instructors who get joy out of teaching. "Alexia almost feels like a staff member. It's like the kids feel an ownership of the Zoo, which is a wonderful thing for our community."

Alexia especially likes going behind the scenes during camp to talk with zookeepers. "You get to see what it's like and you can ask them questions. You learn so much more than if you had just been walking through the Zoo." On a behind-the-scenes tour of the Amazon River tank in the Aquatic & Reptile Center, "I remember a red line around the top of the tank," says Alexia. Don't go past the line or you might fall in, said the zookeeper, adding, with a mischievous smile, "and the fish would not hesitate to eat you." In Careers Camps, Alexia has learned about the jobs of Zoo staff from curators (who manage specific animal groups and plan for the future) to animal-



transfer specialists (who help bring new animals to the Zoo). Alexia is thinking about a career in the animal-health field. In Careers Camps, she learned that veterinary technicians and other Zoo staff often do field research, from studying iguanas in the Caribbean to penguins in Peru.

Summer Camps are offered for kids aged 2-14. Is Alexia sad that she's no longer eligible for ZSM summer camps? Not at all. That's because she's thinking about returning next summer as a high school assistant. This two- to four-week volunteer position for teens aged 15-18 allows them to help instructors by working

directly with kids on art projects and on Zoo tours. Alexia is a prime candidate, says Heather Thomack, a ZSM programs coordinator. "I've watched her grow her leadership qualities, and she's accepting of everyone in camp with whom she's participated."

By Dana Christen

Signup for Summer Camps

See the Zoological Society's Summer Camps brochure, packaged with this issue of *Alive*, for how ZSM members can register, **starting Feb. 5**. Camps are sponsored by Penzeys Spices.

ANIMALS ON THE MOVE

1. Staff from the John Ball Zoo check on Kiume the lion at our Zoo before he is moved. Kiume is the male, with mane. The female is Njeri, his sister. 2. Kiume goes into a secure crate to be transported. 3. The crate is wheeled to a van. 4. Tim Wild (hooded jacket) helps load Kiume into the van. Photos by Richard Brodzeller



1



2



3



4

It's 2 a.m. on Oct. 17 when the truck pulls in. Preparing for the precious cargo are eight Zoo staff. A temporary chute is put up between the truck's trailer and the animal building. The trailer backs up to the chute. "We make sure that it's lined up, and we tie the doors of the trailer to the chute so there's no way she can push her way out and get hurt," says Tim Wild, the Milwaukee County Zoo's curator of large mammals. As the interior door of the trailer swings open, out steps a 10-foot-tall, 1,000-pound, young female giraffe. She comes out pretty quickly, looking around a bit at the staff but not hesitating. She heads straight into her new home, the MillerCoors Giraffe Experience building. It has been a 40-hour journey from Zoo Miami in Florida, and Marlee the giraffe is ready to move and stretch.

Marlee is the second giraffe to arrive at the Zoo in about six months. On May 24 we welcomed Ziggy, also a young female from Florida (see story on page 15). Moving a tall animal across seven states from the subtropical south to the chilly north can be a challenge. You have to do it while the weather's still warm enough. You need a telescoping truck, where the top can be raised to about 18 feet to make it comfortable for the giraffe to enter and then lowered to 13-14 feet to drive safely under standard overpasses. And you need two drivers, taking turns sleeping, eating and driving. "We prefer to ship giraffes while they are still young so that their height doesn't even become a question," says Wild.

A tall animal is one thing, but imagine transporting a 5,500-pound hippo. "There are very specialized crates for those animals," says Wild. "The trick is getting the crated animal inside the truck. It usually takes a crane." When Happy the hippo arrived here at 3 a.m. on Sept. 29, 2009, he strolled out from a really sturdy crate atop a flatbed truck that backed up to a specially designed hippo entrance. Like Marlee, he walked right into the building without a hitch. Bob Meyer of Jo-Don Farms of

Franksville, Wis., hauled both Marlee and Ziggy and has been transporting camels, rhinos and other zoo animals for about 40 years.

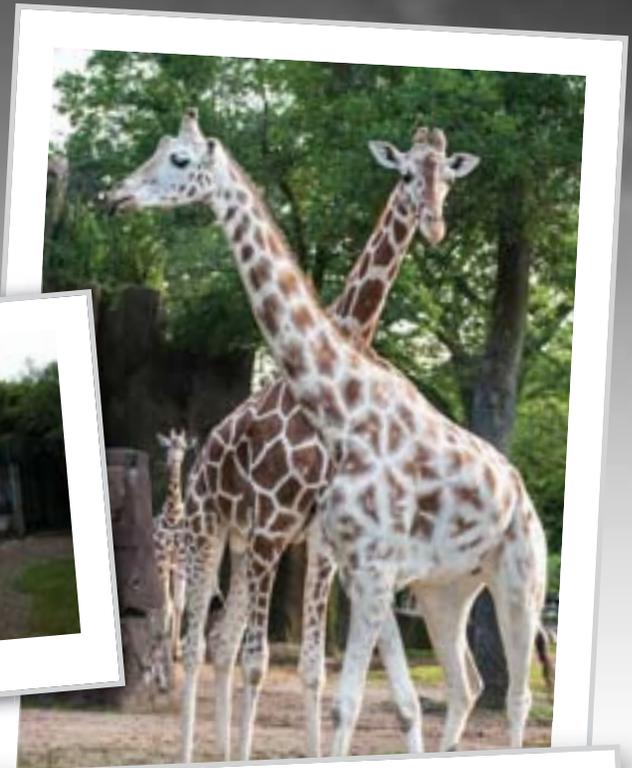
Meyer, who's had trucks break down and has been kicked in the head while loading a giraffe, says the physical challenges of transporting zoo animals sometimes are less of an issue than the paperwork and government regulations. For example, Marlee was held up starting on her journey for about three weeks because Florida recently changed its regulations for transporting animals, and animal haulers needed new permits that took two months to secure. Linda Bachers, the Zoo's registrar, says, "We had to really, really search for a hauler who had documents in place." The Zoo ended up hiring a longtime Florida animal hauler, who had the new permit, to ride with Meyer through Florida. "When we got to the Florida inspection station, the workers didn't even ask to see that new permit," notes Meyer.

Bachers, an expert on documentation papers and dealing with red tape, can list all the forms needed to move an animal within the United States (don't get her started on all the additional forms needed to move an animal here from another country, such as Canada or Mexico):

- **Specimen report** – This may be the most detailed because it's the individual animal's record, including age, weight, where it was born, its parents, who owns it, what zoo held it previously (or if it was born here) plus all the daily reports over the years that zookeepers have written.
- **Medical records** – The veterinarians prepare this detailed account for each animal.
- **Animal Data Transaction Sheet** – Zookeepers fill this out to describe the training they've done with the animal and the enrichment (stimulation, toys, special treats).
- **Diet sheet** – An account of the animal's food needs and preferences comes from the Zoo's Animal Health Center.



Giraffes Rahna and Bahatika in their yard, with Ziggy in the background.
Photo by Richard Taylor

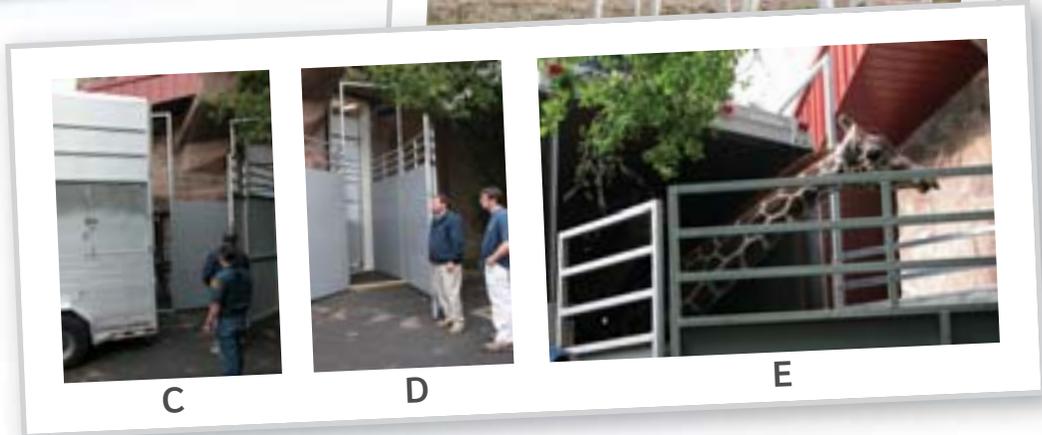


A

B

- A. A tall truck transports giraffes in 2006 to their remodeled quarters.
- B. The truck backs up to a chute.
- C. Setting up the chute from the trailer to the building.
- D. Ray Hren (far right) and Deputy Zoo Director Bruce Beehler await the giraffes.
- E. Malinde the giraffe heads out of the truck.

Photos by ZSM Creative Department



C

D

E

- **Health certificate** – This is signed by the vets.
- **State import permit** – Wisconsin and several other states require this.
- **U.S. Department of Agriculture (USDA) form** – required for mammals only. It has to be signed at both departure and receiving points.
- **Airway bill**, if animal is flying.
- **U.S. Fish & Wildlife Service (USFWS) permit** for certain animals like the dwarf mongoose, which is considered an injurious wildlife species. If it got loose, it could harm other animals or agriculture. Depending on the species, USFWS may require other permits, too.

“We put this whole packet of transport documents in a manila envelope, and it’s taped onto the animal crate,” says Bachers. “The packet contains everything the receiver needs to know to care for the animal: its personality, if it’s friendly to people, what its medical needs are, what it likes to eat.”

On Dec. 19, 2012, our Zoo shipped out Kiume, one of its three lion youngsters born in July 2011. The lions needed to go to other zoos for breeding and to make room for more cubs if their mom, Sanura, became pregnant again. “For moving an animal

out, our Zoo has to do the veterinary exams,” says Wild. “The vets do the exams based on what the receiving zoo asks for and also based on any state requirements.” Testing and getting results take about a week. On the day of departure, our Zoo’s staff usually load the animal into a carrier and then into a vehicle (see photos of Kiume on page 4).

The USDA has rules for transporting animals, notes Wild. There are space requirements for each animal. You have to get food and water to them. Drivers have to check on the animals during the trip (the giraffe driver had a camera on Marlee so he could view her from the dashboard the entire trip). Someone has to stay with the vehicle at all times. “Weather is always an issue,” he adds. Kiume was headed to the John Ball Zoo in Michigan. It was winter. “Lions are less sensitive than giraffes, but the weather can’t be too cold. The John Ball Zoo came to pick up the lion themselves with a van, and they could control the temperature. Usually when we ship or receive animals, whoever receives the animal lets the other know that it has arrived safely.” Kiume arrived safe and sound.

By Paula Brookmire

Hugo Warner was riding on the pillion of a small motorcycle for hours on end, bouncing along 70 miles of rocky dirt path cut through thick African forests across remote districts in rugged country. When his driver stopped to rest, Warner was so stiff he could barely get off the bike. "Riding as a passenger for this distance is extremely uncomfortable," says the 35-year-old British national. "But we tried not to stop very often because we were so keen to reach our destination." The destination: Etate, the research station for the Bonobo & Congo Biodiversity Initiative (BCBI), the Zoological Society of Milwaukee's award-winning conservation project. Etate is also a patrol post in Salonga National Park, Democratic Republic of Congo (DRC). Besides scientists and park guards, few people visit Etate. Warner was neither.

"I found out about Etate quite by chance," he says. "A zookeeper at the Lola ya Bonobo ape sanctuary in Kinshasa referred me to 'Madame Gay' Reinartz, with whom I struck up a correspondence at the end of 2011." Dr. Gay Reinartz, BCBI director and the Zoological Society's conservation coordinator, invited Warner to visit Etate during one of her twice-a-year research trips. "On Gay's advice I took the 'scenic' route," says Warner. That included a flight from Kinshasa, capital of DRC, to a small town called Boende, followed by the 70-mile motorcycle trek to a village called Watsi Kengo. There Warner joined Dr. Reinartz, Patrick Guislain (BCBI field projects coordinator), and other members of the BCBI team. "They took me in their motorized pirogue for the three-hour home stretch on the meandering Salonga River. We arrived just after nightfall."

Warner was on "holiday," feeding his fascination for remote places and endangered species such as the bonobo. As an international development consultant for PricewaterhouseCoopers, he lives and works between London and Kinshasa.

When Warner finally arrived at Etate on April 21, 2012, he was awestruck. "It's an astonishingly well-ordered station in the middle of the dense jungle," he says. But the amazing part of his journey began when he joined the team on research missions into the forest. "The rainforest is initially very foreboding and disorienting," he says. "On stepping into it, you feel that you're in someone else's home. But you acclimatize, bit by bit, especially under the guidance of trackers, whose home this is." Still, making headway in the rainforest is painstaking. "You sweat profusely, and your clothes chafe the skin. Progress is slow given the thickness of the undergrowth. You walk for what seems like miles, hacking through the bush before realizing you've only come a couple hundred meters." With dry British wit, he adds, "That said, it was truly excellent exercise."



Bonobos in a treetop.



At the Zoological Society's research station are (from left) Etate's chief guard Bokitsi Bunda, visitor Hugo Warner and guards Isasi Bianga and Isomana Edmond.

Congo *By* Camera

It wasn't until the seventh day in the rainforest that Warner finally encountered wild bonobos. "It was a heart-stopping experience," he says. "I was taking a rest with one of the guards when we heard their familiar squeal some tens of meters away. Off we went, trying to move as quickly but quietly as possible. The bonobos were, of course, alert to our noisy presence before we saw them, and they took to the treetops. But there they stayed, looking at us curiously as I struggled to regain my composure and take some decent photos. There's very little that can compare with meeting the intelligent and curious gaze of the bonobo." Warner also photographed "bongos, slender-nosed crocodiles, the rare



A wolf monkey.



Fungi on the jungle floor.



Bokitsi Bunda holds up favorite bonobo food, marantaceae.



Weaver ants.



A caterpillar.



A tent camp.



A crested guinea fowl camouflaged in the trees.

red Tshuapa colobus monkey, and more diverse and beautiful invertebrates and birds than I could ever hope to identify."

Warner's time with BCBI staff has turned him into a "big fan" of the project. "They are really operating on the frontlines of bonobo-conservation efforts in a part of the world that has, shall we say, tremendous PR problems." He says BCBI's core mission –to locate bonobo populations, study their habitats, and provide support and training to the park guards – would be challenging in any context. "Quite apart from doing that in such a remote and occasionally inhospitable place, one is faced with astonishing levels of red tape and poverty-driven corruption. This can be discouraging to even the most determined people trying to make change in Congo."

Despite the odds, Dr. Reinartz has clearly won the confidence of her Congolese colleagues and the neighboring population, he says. "She has had palpable success." Warner was also impressed with her colleagues. "Patrick Guislain is not just a serious academic but an *homme de terrain* (field expert). He is equally at home repairing canoes as he is fine tuning radios." Bokitsi Bunda, Etate's oft-serious-looking chief guard, is also a deadpan comic talent, says Warner. "I particularly enjoyed his impersonation of a sleeping bongo on one of our forest walks." Warner praised research assistant Mozart Ngomo for captivating the children from a school who visited Etate and for pointing out "things I had missed, such as subtle traces left by bonobos on the forest floor." Isomana Edmond, the guard accompanying Warner the day they saw bonobos, has an astounding knowledge of "virtually every square inch of the ever-changing forest."

The trip to Etate left Warner with indelible memories: "the arresting hoots of bonobos in the distant forest...baths each morning in the tea-colored, tannin-rich water of the

Salonga River...the occasional intense rainfall that is particularly striking in the forest...satellites slowly tracing their way across the brilliant night sky...torchlights at night reflecting in the jewel-like eyes of spiders in Etate's lawn...the weird, alien-looking fish that characterize Congo's rivers...the telltale pinpricks under your clothes which indicate you've picked up some angry little ants whilst marching through the woods...and the piercing cries of tree hyraxes surrounding Etate at night." On these pages are a few of his trip photos. For more, go to zoosociety.org/Warner. For BCBI information, go to bonoboconservation.org.

Warner has taken other excursions to remote places in the DRC, from climbing volcanoes to visiting gorillas in the dangerous eastern part of the country. But his trip to Etate stands apart. "So far, I have only made one trip to Etate," he says. "How I would love to go back!"

By Zak Mazur

Billie Harrison likes meat-eating fish, venomous snakes, and hairy tarantulas. But sometimes her enthusiasm for these animals comes back to bite her. When her grandmother came to visit her at home a few years ago, Harrison wanted to show off her meat-eating Oscar cichlid. "As I was about to feed the fish, it launched itself out of the tank and landed on the carpet, flopping around and getting matted with cat hair." Grandma gasped. Harrison dove for the fish to save it. Well, the cichlid lived for several more years. "But I couldn't get my grandma to visit for some time."

Harrison's family has gotten used to her obsession with types of animals that repel many people. Besides fish, Harrison has had pets such as snakes, a tarantula and a peppered cockroach. This fascination has guided Harrison to the study of anthropology and conservation biology at the University of Wisconsin-Milwaukee, then to a job at the Racine Zoo where she became the assistant curator of ectotherms, and finally to her current position as area supervisor of the Milwaukee County Zoo's Aquatic & Reptile Center. While that means caring for some of her favorite animals, she also gets a chance to educate people about animals they might fear. Snakes and lizards, for example, are ectotherms. "An ectotherm is an animal that needs an external source of heat to maintain suitable body temperature," says Harrison. Mammals, in contrast, are endotherms and can regulate their own body temperatures. The trade-off, she says, is that endotherms require a near constant supply of energy – or food – whereas ectotherms require less food, but become sluggish without an external heat source. They survive cold Wisconsin winters by going into a state of brumation, when body functions slow down and they use very little energy.

Harrison brings to the Zoo a wealth of in-field research experience, a lot of which she gained volunteering with Craig Berg, aquarium and reptiles curator for the Milwaukee County Zoo, before she started working here. Both have been involved over the years with Milwaukee's Urban Ecology Center, where Berg is an advisor. Berg assisted Harrison with an intensive mark/recapture study of the Butler's gartersnake, which has lost much of its habitat. Harrison managed the project from 2006 to 2011. In 2007 Berg tapped Harrison to help with his field work on frogs and snakes in the Caribbean because his long-time colleague – Robert Henderson, curator emeritus at the Milwaukee Public Museum – was unable to go. Harrison has traveled to the Caribbean every year since. She assists Berg with studies of various species on the Island of Grenada in the Caribbean: the endangered Grenada frog, the Grenada Bank tree boa, and a reef-monitoring project (see page 14) off the island's near-shore reefs through Wisconsin Lutheran College. The Zoological Society of Milwaukee has provided funds for several of the projects and for production of three- to five-minute films that teach the people of Grenada about the value of conserving their country's frogs, snakes and lizards.

"Billie is a valuable member of the team," says Berg. "She has incredible stamina. She wakes up early in the morning and scuba dives among the reefs. Then she works late into the night to do field work on frogs." Visiting the Caribbean isles is a holiday for most, but research missions are all work and no play. Says Harrison: "It's very challenging physically. We do a lot of hiking, maintaining our paths with machetes and working late hours." Once, she mixed two things many people fear:

On the Job



Loving *Those* Animals

Eastern
massasauga
rattlesnake

DID YOU KNOW?

Timber rattlesnakes (right) and the endangered eastern massasauga rattlesnake (above) are Wisconsin's only venomous snakes.



Photo by E. Marie Rush, DVM

During nighttime research in November 2012, Billie Harrison collects a Grenada tree boa for veterinarian Marie Rush, who was taking blood samples.

animals.” Researchers also have found snake venoms to have very stable anticoagulant properties, and some venom-based drugs already are treating human blood-clotting disorders.

One of the challenges of conserving animals like snakes and tarantulas is that many people don't empathize with them, she says. “Most people's experience with these animals has been through movies and the media, where they are portrayed in a negative, aggressive manner.” But in most cases snakes want to avoid confrontation and prefer to stay hidden, or move away. “Many people find mammals to be more compelling because we can better interpret their behavior; it can even be similar to our own,” she says. Harrison, however, notes that reptiles can display behavior similar to humans. Many species of female snakes stay with their babies for extended periods of time, and crocodylians call to their young and carry them in their mouths.

In addition to working with various ectotherms at the Zoo and in the field, Harrison is also passionate about educating the public about them, particularly young people. “This is how we can help ensure these animals will exist in nature in perpetuity,” she says. Although Harrison “grew up grabbing gartersnakes,” she doesn't expect everybody to share her obsession. And when she says she's obsessed with snakes, fish and other ectotherms, she's not kidding. She has a tattoo on her forearm of a gartersnake to prove it.

big snakes and graveyards. “A Grenadian gentleman interested in tree boa conservation took us around his property to look for them,” she says. “His land abuts a cemetery. It's very strange to tiptoe around fresh graves looking for beautiful boas in the dark.”

During her years at the Racine Zoo, Harrison became involved in conservation programs for Wisconsin's two venomous snake species. “Many people don't know we have venomous snakes here,” she says. “They aren't found in the Milwaukee area, and people don't tend to enter their habitats.” One of these is the timber rattlesnake, found among the bluffs along the Mississippi River and the Wisconsin River. “They have great camouflage; so people usually don't see them.” The other venomous snake is the endangered eastern massasauga rattlesnake. Much of its Wisconsin habitat has been destroyed.

Berg says it's rare to find someone with Harrison's knowledge of snakes, amphibians and fishes who also has management experience. That background, combined with her field work, helped her secure the job as area supervisor at the Zoo's Aquatic & Reptile Center in November 2012. Now, one of her many responsibilities includes coordinating the outreach program of the Eastern Massasauga Rattlesnake Species Survival Plan® (SSP) for the Association of Zoos and Aquariums. SSPs help manage the care of endangered species throughout North America. “We are working toward breeding them in captivity,” she says. The Zoo has two eastern massasaugas that are not on exhibit, and Harrison hopes to exhibit the pair in spring. Why are these snakes so important? “They are topline predators. Both timber and massasauga rattlesnakes consume a great many rodents, ground squirrels, amphibians and other snakes,” she says. “Plus, they are absolutely gorgeous

By Zak Mazur



A timber rattlesnake.



A rose-haired tarantula.



A grunt sculpin swims near purple sea urchins.

Animal photos by Richard Brodzeller

Kids Alive

underwater WONDERS

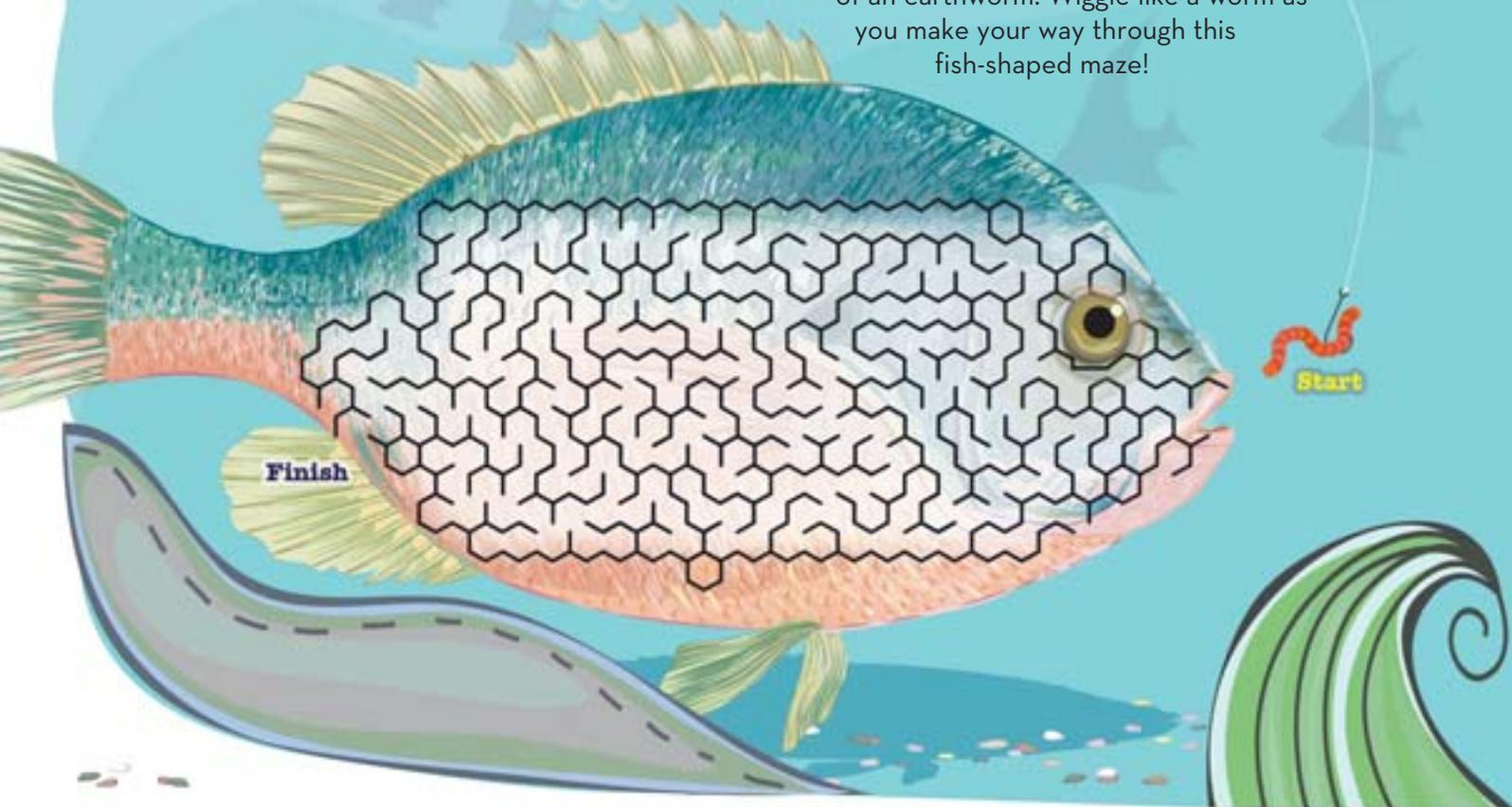
Cichlids



There's a world of wonder under water with fish that come in wide variety. The 50-foot whale shark looms over the less-than-half-inch midget dwarf goby. Scientists have discovered more than 27,000 species of fish. Some live in fresh water while others have salty ocean homes. Some fish, like the seahorse, can give birth to live babies. Some can lay up to 300 million eggs, like the ocean sunfish. There are fish that eat meat, such as the moray eel, and fish that feast on plants, like the grass carp. Fish even differ in sleeping habits. Catfish are nocturnal and sleep during the day. Zebrafish are diurnal and are active during the day. Dive even deeper into the world of fish with activities on these two pages. Swim through the maze. Create your own fish using an egg carton. Gulp down a seaside snack as you test your fish smarts with a quiz. After you think you've got the answers, visit zoosociety.org/funstuff for the solutions and more activities!

Fish Maze

Most fish, including Wisconsin-native fish like bluegill, catfish, carp and bass, eat meat and can't pass up the taste of an earthworm. Wiggle like a worm as you make your way through this fish-shaped maze!



Egg-Carton Fish

Save a used egg carton to make these eco-friendly fish! Have a fin-tastic time “swimming” through the sea and exploring your surroundings.

You will need:

Cardboard or foam egg cartons
Child-size scissors
Thin paintbrush (4 to 5 inches long)
Non-toxic orange acrylic paint
Water-based glue
Orange construction paper or any stiff paper
Orange chenille pipe cleaner, cut into 1-inch pieces
Small googly eyes*

1. Cut out 2 individual cups from egg carton with scissors.
2. With paintbrush, paint the outside of each carton cup. Let paint dry before next step.

3. **Fish body:** Put glue around cut edge of one carton cup and attach to second cup.
4. **Fins:** Go to zoosociety.org/funstuff and print out template for fish fins. Cut out fins. Trace them onto construction paper; then cut out fins again.
5. See directions on template to glue fins on fish.
6. Fold each 1-inch pipe cleaner piece in half and glue onto front of fish to make lips.
7. Glue on googly eyes and you're done!

*Googly eyes are plastic eyes used for crafts. Visit zoosociety.org/funstuff for prices and where to buy.



Sea Snack

Enjoy a deep-sea treat! Cookies and marshmallows create the ocean floor, and fish-shaped candies fill the gelatin “sea” with marine life.

You will need:

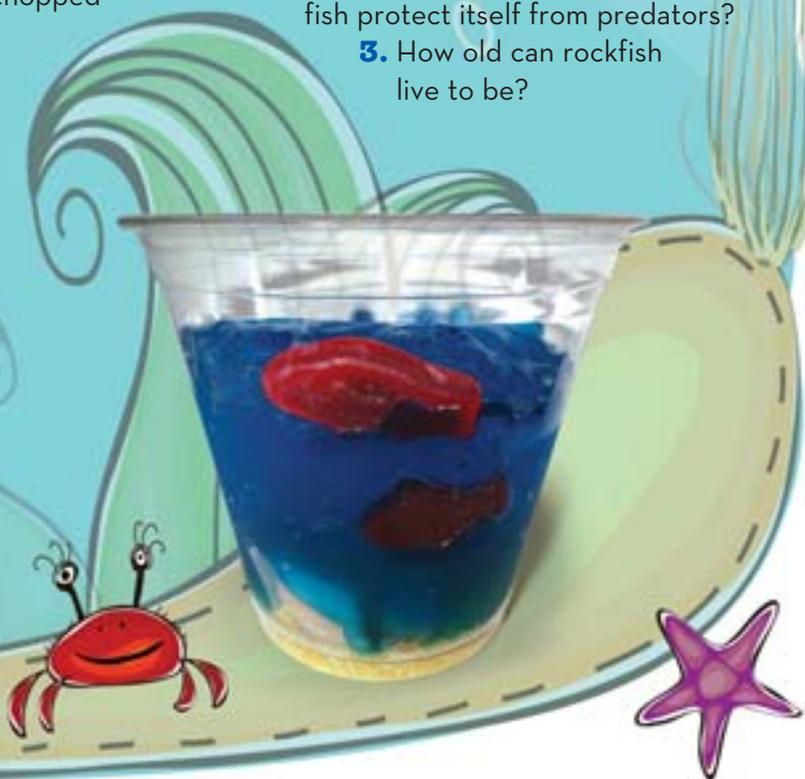
1 package Jell-O Berry Blue Gelatin (3 ounces)
 $\frac{3}{4}$ cup boiling water
 $\frac{1}{2}$ cup cold water
Ice cubes
4 clear plastic cups (9 ounces each)
 $\frac{1}{2}$ cup Nilla Wafers (or similar cookies), coarsely chopped
20 mini-marshmallows, cut in half
15 gummy fish

1. Have an adult mix gelatin and boiling water in medium bowl. Stir 2 minutes until gelatin is completely dissolved.
2. In separate bowl, add a few ice cubes to cold water to measure $1\frac{1}{4}$ cups. Add to dissolved gelatin and stir until water slightly thickens. Remove unmelted ice. Refrigerate gelatin 20 minutes until it's much thicker but not firm.
3. Divide chopped cookies and marshmallows evenly among 4 cups.
4. Remove gelatin from refrigerator and quickly stir to create bubbles. Pour into cups and refrigerate 1 hour or until firm. Just before serving, push gummy fish into gelatin. Enjoy!

Marine Mentality

See more than 65 species of fish at the Milwaukee County Zoo's Aquatic & Reptile Center. There you'll find answers to these aquatic queries! Can't come to the Zoo? Go to zoosociety.org/FunStuff for the answers.

1. In what kind of habitat can you find Wisconsin's state fish?
2. How does the California sheephead fish protect itself from predators?
3. How old can rockfish live to be?



Helping Us Teach



When it's 4 a.m. at Camp Leakey, it's time to rise, says Trish Khan. "We would follow the orangutan through the forest all day and then return to camp after dark." Camp Leakey is a research site in the Indonesian West Kalimantan province of the island of Borneo in Southeast Asia. There Khan, who is the Milwaukee County Zoo's area supervisor for primates, spent several weeks working with Dr. Biruté Galdikas, a primatologist who's a pioneering researcher on orangutans. Khan collected data on the diets and the kinds of trees these endangered apes use. Meanwhile, back in Milwaukee, Khan cares for orangutans. She even stayed in an exhibit with baby orangutan Mahal when the toddler first arrived in Milwaukee and needed around-the-clock care. Now, Khan shares her experiences with children in Zoological Society of Milwaukee (ZSM) Conservation Education camps and classes.

Sharing stories about animals is just one way that Zoo staff help the ZSM's Conservation Education Department to provide enriching summer camps and classes throughout the year. Zoo staff also allow



Trish Khan lived in an exhibit space with baby orangutan Mahal for several days to acclimate the toddler to his new home.

Photo by Richard Brodzeller

selected classes to go behind the scenes or they let ZSM instructors bring small animals, like chicks, into classrooms. Sometimes the animal being studied is the human zookeeper, veterinarian, curator or other Zoo staff member. For example, the ZSM offers several zoo-related Careers Camps each summer for kids ages 12 to 14. "If the kids really want to learn about a career at the Zoo, they get firsthand accounts directly from the keepers or other staff," says Heather Thomack, a ZSM program coordinator. Thomack says that Khan gives one of the most passionate speeches about her work with orangutans. Her real-world field experiences add credibility and excitement to ZSM classes and camps.

As part of its public-private partnership with Milwaukee County, the non-profit Zoological Society provides education programs as a support service to the Zoo. These include classes

and camps that individuals may register for as well as programs designed for groups of schoolchildren. Classes on field trips to the Zoo, for example, can solve a zoo-animal medical mystery in the ZSI: Zoo Science Investigation class. Using logic and reasoning, students from fourth to eighth grade figure out solutions to real-life veterinary cases. "The kids are learning about the animals within the context of the Zoo," says James Mills, director of Conservation Education.

To keep the content and curriculum current, ZSM educators consult animal staff managers for the most up-to-date information on Zoo animals. "Our education staff learns something new every time we speak to the Zoo staff since enrichment, training and medical care with the animals are always changing," says MaryLynn Conter Strack, a ZSM program coordinator.

The collaboration between Zoo staff and ZSM educators plays a major role in Zookeeper class, offered every September



Meeting children in Careers Camp, Trish Khan talks about the Zoo's Macaque monkeys.

Photo by Richard Brodzeller



At the Horse Barn, farm attendant Amy Munes talks with children in Junior Zookeeper summer camp. Photo by Richard Taylor

for ages 6 to 10, and in the popular summer camps called Junior Zookeeper (ages 4 and 5) and Senior Zookeeper (ages 6 and 7). These programs often go behind the scenes, and they focus on what zookeepers in different areas of the Zoo have to know. "For example, keepers in the Aquatic & Reptile Center need to be able to scuba dive to clean the tanks, know about water quality to keep animals healthy, and learn how to safely work with venomous animals," says Conter Strack.

In Junior Zookeeper summer camp, kids get to try out zookeeping themselves. First, each child gets a tan "zookeeper shirt" to wear before heading from the classroom into the Zoo. Then it's off to the farm where they each choose a rake or a shovel. Then they go inside the barn, where the general public is not allowed. Their job? Make up the stall of Gypsy, the Zoo's horse,

by raking or shoveling hay into a cozy pile. (Of course, per health regulations, the stall has been pre-cleaned to remove any horse droppings. And the horse is not in the stall.) “They’re learning about what zookeepers do,” says Conter Strack. Sometimes a Zoo staffer will be around to say hi, as was the case for the photo on page 12; a zookeeper talk is not part of this camp, however.

Zookeeper classes aren’t the only ones where children have live animal encounters. Bunnies, guinea pigs, owls, hedgehogs, frogs, ducks, turtles, snakes, chinchillas and other “education animals” may be brought to any of the eight classrooms in the Karen Peck Katz Conservation Education Center. For example, in the April class Watch the Birdie (for children age 2 with an adult), fluffy, yellow baby chicks visit the classroom.

For other classes and camps, kids go behind the scenes in various Zoo areas. In the Small Mammals Building, a zookeeper will bring out a fruit bat and walk around the room, showing kids an up-close view they wouldn’t otherwise have. In the Aquatic & Reptile Center, they might go above the first-floor exhibits to see the tops of the aquariums and how keepers feed the fish. These visual, behind-the-scenes experiences create memories (see story on page 3) and motivation to learn more about animals. “Zoo staff have a high level of knowledge based on their personal experience with the animals,” says Conter Strack. Adds Thomack: “In the eyes of the children, Zoo staff have a mystique about them.” Getting to interact with staff is an experience unlike any they’ve had at the Zoo before, and “it reinforces what we’re teaching.”

By Dana Christen



During a Zoo Class tour, Mitchell G. was wide-eyed upon seeing a fruit bat held by Rhonda Crenshaw, area supervisor of the Small Mammals Building.

Photo by Richard Brodzeller



Amy Munes leads Gypsy the horse to the front of her yard to greet children for a photo.

Photo by Richard Taylor

Classes & Camps:

To see the availability of spring Zoological Society classes or to register, go to zoosociety.org/spring. For summer camps, sponsored by Penzeys Spices, go to zoosociety.org/summer.



Studying Reef Life

A research group from Wisconsin is scuba diving along the coast of Grenada, a Caribbean island 100 miles north of Venezuela. Vivid colors greet them from under water: varieties of coral with green or yellow or pink tinges, yellow-and-black angel fish, salmon-colored squirrelfish, black-and-white spotted moray eels, multicolored damsel fish. As they head from north to south along the coast, something happens. The phosphate and ammonia levels go up. Coral-reef variety goes down. From above the water, you can see a line of soil and fertilizer runoff from hills to ocean, polluting the water. The coral reef is under attack.

“Historically in the Caribbean, it was 80 percent coral and 20 percent algae. Now it’s just about the reverse,” says Bob Anderson, a professor at Wisconsin Lutheran College in Milwaukee. Anderson and his students in collaboration with St. George’s University in Grenada and the Milwaukee County Zoo have been studying the reef and its wildlife for several years and documenting the changes. The Zoological Society of Milwaukee has



Student Jon Jossart and Craig Berg scuba dive off Grenada.

helped fund some of the research expenses of two Zoo staff in the study: Craig Berg, reptile and aquarium curator, and Billie Harrison, area supervisor of the Aquatic & Reptile Center.

Too much algae, as people living near Wisconsin lakes know, is not good. Fertilizer runoff is a big cause of algae growth. Along the Grenada coast, algae grow over the coral, which is a living organism, and compete with it for sunlight. Some algae secrete a substance that inhibits the development of the coral polyp. Pollution – along with overfishing – has changed the fish population, too. There are fewer plant-eating fish that gobble up algae. Also, the types of coral have changed. Massive coral, the type that builds reefs, is on the decrease while branching coral – sometimes called the weed of the reef – is increasing.

The researchers film and take photos of the sea bottom, counting fish, coral and other attached organisms. They follow the same fixed transects (2-meter by 30-meter tracks) each year to document the changes. Between 2008 and 2012, they found that algae increased. Macroalgae (which grows over coral) was higher in non-protected areas

than in a government-protected area. “We hope to be able to show the public a visual difference,” says Anderson, who, with students Emily Bolda and Katie Musser, gave a presentation at the Zoo in spring 2013. The eventual goal is to go from monitoring to recommending action that will turn things around, says Anderson. Grenada, for example, doesn’t have regulations on types of fertilizers people can use. Grenada began enforcing limited-use restrictions in an official Marine Protected Area only in 2010. This ongoing scientific study will not only provide evidence to support resource management, says Anderson, but also will contribute to a broader understanding of coral reefs throughout the Caribbean.

By Paula Brookmire



An angel fish swims near the reef.



▲ A beneficial sea egg cleans algae from dead coral so new coral can grow.

▼ Competition for space on the reef is intense. A mat zoanthid (left) starts to cover a massive brain coral as brown cyanobacteria (blue-green algae) encroach on both coral and zoanthid.

Giraffes

Arrived: Ziggy on May 24 and Marlee on Oct. 17, 2013

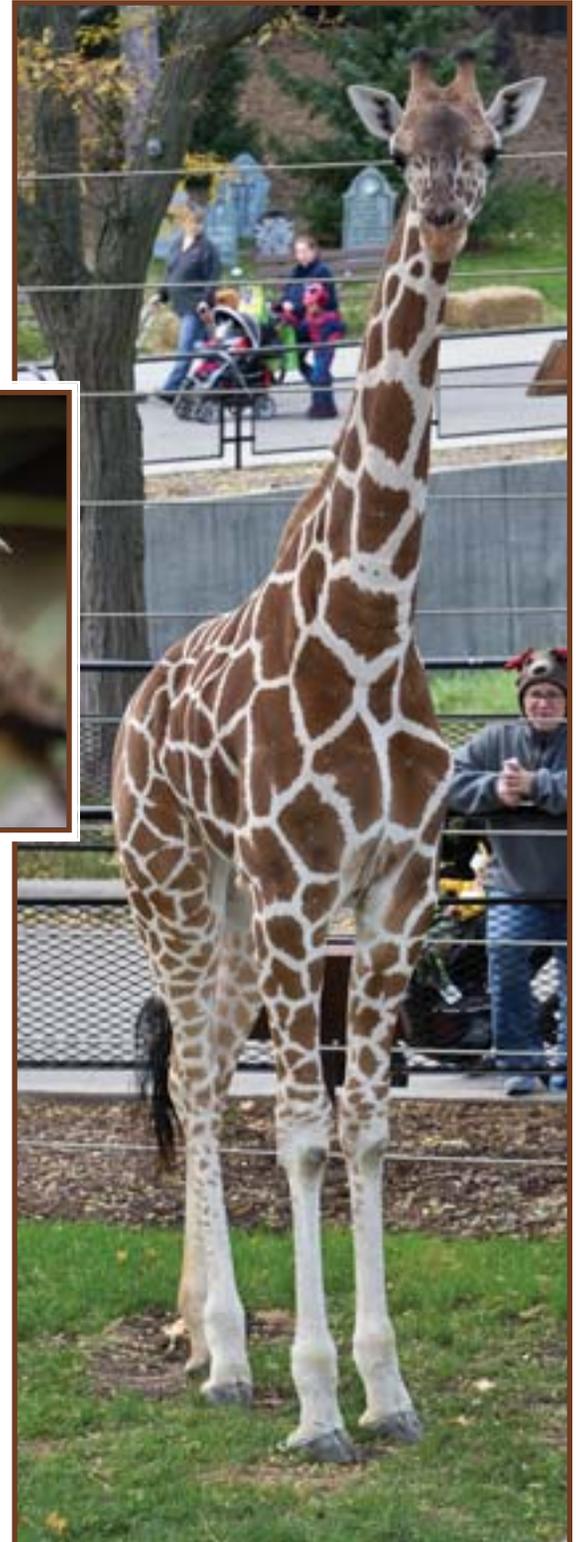
MillerCoors Giraffe Experience

What's Gnu?



A child recently transferred to a new school tends to form bonds with a child near her own age. It's the same with giraffes. Two young females recently joined the Milwaukee County Zoo's two veteran giraffes. Both came from Florida: Ziggy, 3 (see cover), from Disney's Animal Kingdom and Marlee, about 20 months (at right), from Zoo Miami. "They probably bonded because both are new and young," says Tim Wild, curator of large mammals. Bonding signs include nuzzling and nibbling each other's necks and faces, coupled with sniffs and licks. Their bond didn't exclude acceptance by resident giraffes Rahna, a 21-year-old female who is distinctly lighter than the others, and Bahatika, an 8-year-old male. "They've all integrated as a herd quickly," adds Wild. You can identify Marlee because, at 10 feet tall, she's the shortest of the four giraffes, has the darkest face, and her spots are more solid. Ziggy has polka dots inside her spots. As newbies they share certain behaviors. "They watch people; they pay attention to their surroundings," says Wild. "But Rahna and Bahatika mind their own business."

Zookeeper Ray Hren works with the giraffes and notes the dynamics. "Once in a while Rahna lightly knees the two youngsters to gently nudge them to move, or gives an occasional half-hearted head swing out of annoyance," he says. "It depends on her mood." Bahatika already is showing interest in Ziggy, who at age 3 may be showing signs of early sexual maturity (which typically begins at 3 to 4 years old). If Ziggy goes into estrus by spring, Wild says they'll "let it happen." Giraffes have one of the longest gestation periods in the animal kingdom (14 to 15 months). With luck, the Zoo's giraffe herd could grow to five by the summer of 2015. Ziggy and Marlee were acquired thanks to a major endowment to the Zoological Society established by the Bernie Ziegler family in memory of his wife, Elizabeth "Liz" Ziegler.



Cape thick-knee

Arrived: July 26, 2013

Herb and Nada Mahler Family
Aviary, Termite Exhibit

In the open woodlands and savannas of sub-Saharan Africa, cape thick-knees see you long before you see them. But at the Milwaukee County Zoo, close proximity makes it easier to spot these ground-dwelling birds that are so well-camouflaged. You may notice them because of their striking eyes. "They have large nocturnal eyes that give them superb eyesight," says zookeeper Bryan Kwiatkowski. Phoebe is the Zoo's veteran thick-knee, identifiable by a purple band around her left leg. Newcomer Phillipé has a green band on his left leg. Their thick "knee" joints are actually heels that "bend opposite of our own," notes Kwiatkowski. Key survival adaptations are their brown-and-white speckled coats, which provide camouflage when they stand still, and their acting skills. Cape thick-knees flop "helplessly" near their ground nests to lure predators away. When the young are out of harm's way, the parent "recovers" and flees. These birds mate for life. It's hoped Phillipé – who came from the Fresno Chafee Zoo in California – will eventually breed with Phoebe, hatched at our Zoo. You also can identify Phoebe by her behavior. Because Phoebe was hand-raised, "she has little fear of humans and has no problem letting keepers or the public know this," says Kwiatkowski. So if one of the cape thick-knees runs up to the edge of the exhibit and stares at you, it's probably Phoebe. "She's letting you know this is her space," he adds.

Remodeling the Gorilla Yard



Zoological Society of Milwaukee County
10005 W. Bluemound Rd., Milwaukee, WI 53226-4383
zoosociety.org



Habitat Help:

Help us update the Milwaukee County Zoo's outdoor gorilla habitat. To make this a special place for gorillas to play and relax, we hope to include:

- A water feature for splashing and drinking
- Berms to create resting places and protection from the wind and the elements
- Resting platforms to allow basking in the sun and "people-watching"
- New landscape vegetation to provide browse treats during the summer months
- Enrichment items (toys and activities) that stimulate the gorillas' natural curiosity

Donate here:

To give to the Zoological Society's 2014 Annual Appeal, please see the flyer packaged with this magazine, go online to ForTheApes.com or call (414) 258-2333. All donations are tax-deductible.

(414) 258-2333 or ForTheApes.com

Some of the funds raised will help upgrade the gorilla outdoor yard, and some funds will provide direct cash support to help all of the Zoo's animals. Donors of \$75-\$249 have their names listed on a sign; donors of \$250-\$499 receive larger recognition on a sign; donors of \$500-\$999 receive individualized recognition; and donors of \$1,000 or more receive larger individualized recognition. Donors of \$2,500 receive individualized recognition on a bench to be placed in the Zoo. To comply with WI Statute Section 440.455, a financial statement of the Zoological Society will be provided upon request.