



Volume XXX, Number 6

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Riverbanks Hours of Operation

Open daily 9am – 5pm except Thanksgiving day & Christmas day 9am – 6pm Weekends during Daylight Savings

Riverbanks Zoo and Garden is located at 500 Wildlife Pkwy, Columbia SC 29210

Subscriptions to Riverbanks are \$24 per year. Members of Riverbanks Society are entitled to one free subscription along with free admission and guest passes, discounts at Zoo & Garden gift shops, invitations to special events and much more. To subscribe to Riverbanks or to join the Society, visit www.riverbanks.org or call 803.779.8717 x1111.



Riverbanks Magazine

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ASSOCIATION OF ZOOS AQUARIUMS

Riverbanks Zoo & Garden is accredited by the Association of Zoos and Aquariums and a member of the American Public Gardens Association.



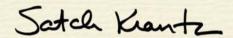
The Observation Deck

As I have stated countless times before, there are many fascinating things that take place behind the scenes throughout the Zoo and Garden. Without question, one of the most interesting is the Zoo's animal commissary. Tucked in a corner of the Zoo's administration building, the commissary cranks out 300 individual diets for 2,000 animals, 365 days a year – come rain, sleet or snow, or any other emergency-related matter.

That's just part of a very complex story. Each and every diet must be individually formulated, whether for a 5-ton elephant, a 400-pound tiger or a 6-ounce bird or fish. And even this is not as simple as it sounds. Each diet results from a collaborative effort between the veterinarians (nutritional value), the curators (biology of the animal), the keepers (the likes and dislikes of the individual animal) and the commissary staff (value and budget). Due to the intricacies involved, the diets for a newly arrived group of animals may take a year or more to finalize.

After a diet is determined, Riverbanks Commissary Manager Dave Nellermoe must identify a source for and then purchase the various components of the diet. If we're lucky, and the animal is a herbivore (plant eater), its diet will be comprised of fruits and vegetables that are readily available at the State Farmers Market. Dave has been making weekly visits to the Farmers Market for more than 30 years and has developed a great relationship with many of its vendors. Sourcing food items for some species is not quite that simple. Particular diets require us to turn to suppliers for such specialty items as canned monkey chow or bear biscuits (yes, there are such things). We also purchase fish (penguins) and meat (carnivores) by the ton as well as fresh eucalyptus (koalas) weekly from suppliers out of Florida and Arizona.

The complexity of feeding our animal collection is fascinating, indeed. And it is also necessary, which is just one reason why the ongoing support of Riverbanks members and donors is so critical. As always, I thank you for your past, current and future support. The animals really do depend on it.





Turn the page for an inside look at what it takes to feed the animals.

To make a year-end, tax-deductible donation to the Annual Fund and help feed the animals, visit www.riverbanks.org and click on Donate.











Food for Thought

When making diets, every single ingredient must be portioned and weighed to very specific sizes outlined by veterinary and senior keeper staff. With digital metric scales, we accurately weigh all ingredients. Many diet items for birds and other small animals must be weighed precisely to within 1 or 2 grams of the target weight shown on the diet card. So with an average of 5 items per diet and a total number of diets that fluctuates around 300, we must attempt to correctly weigh, count, portion and otherwise ensure the quality of about 1,500 individual diet ingredients every day! Furthermore, none of these numbers is static, as diet changes are made constantly. So while commissary staff must meet daily deadlines, we must also maintain constant vigilance when preparing each diet in order to minimize mistakes.

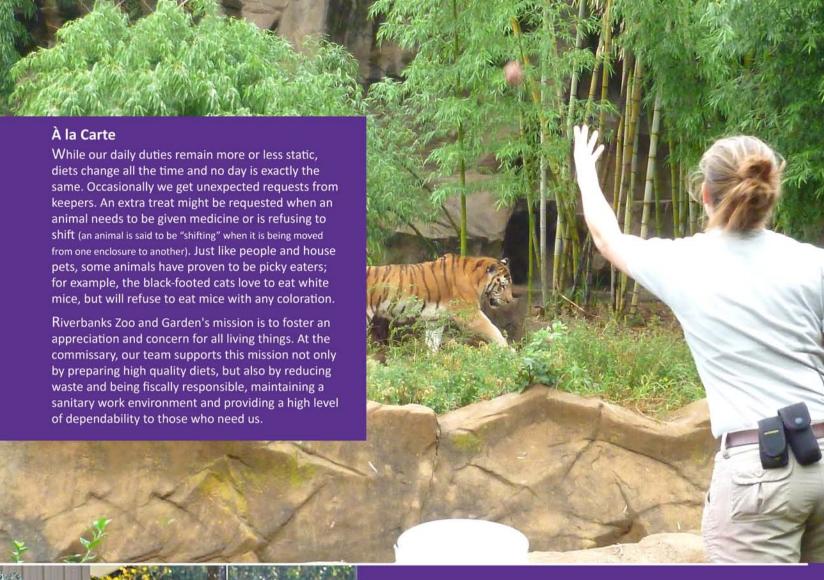
We are also subject to stringent sanitation protocols as per USDA regulations. Every tech is required to wear rubber gloves, and the kitchen is divided into meat and non-meat prep areas so as to avoid cross-contamination. I have worked in many kitchens over the years, and ours is amongst the cleanest that I have ever seen.

So how much does it cost to feed Riverbanks' growing animal collection? The number fluctuates, but our annual budget hovers around \$500,000 for animal feed alone. About 25% of this budget is devoted to just one group of animals, the koalas. Their diet consists solely of living eucalyptus plants shipped from growers in Florida and Arizona. The plants have to be shipped quickly after being cut before the leaf tips (favored by koalas) start to degrade. This requires overnight delivery, so shipping costs are almost as much as the eucalyptus itself.











You can help feed the animals with a tax-deductible gift to Riverbanks' Annual Fund:

\$25 COULD FEED A KOALA ONE MEAL

\$50 MAY FEED ONE OF OUR BABY GIRAFFES FOR A WEEK

\$100 COULD FEED A GORILLA FOR A COUPLE OF WEEKS

\$500 MIGHT FEED A PENGUIN FOR A YEAR

\$1,000 COULD FEED A TIGER FOR THE WINTER

To make a year-end contribution to the Zoo's Annual Fund, please visit www.riverbanks.org and click on Donate.

Mark Your Calendars

November

5 - Pumpkin Smash 11 - Veteran's Day 19 – First Bulb Sale Pick Up Day 19-23, 25-30 - Lights Before Christmas

December

1-23, 26-30 - Lights Before Christmas 10 - Partnering for Penguin Conservation

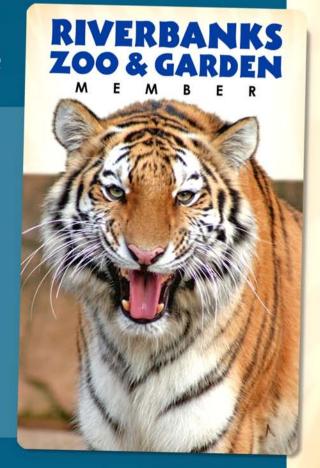
For more information about these and other upcoming events, visit www.riverbanks.org.

"Like" Riverbanks? Join our Fan Club on Facebook! Visit www.facebook.com/riverbankszoo Follow us on Twitter @RiverbanksZoo

New and Improved Membership Experience

Next time you renew your Riverbanks membership, you will be introduced to a brand-new kind of membership experience.

All of your membership information, benefits and guest passes will be stored on a new membership card. We are very pleased to offer this state-of-the-art program to our members, and in an effort to "Go Green." your new card will be available to pick up at the ticket booth on your next visit to the Zoo.



Questions? Visit our website at www.riverbanks.org or email us at societyinfo@riverbanks.org.



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Decorate Your Yard with Ornamentals

Many people often ponder about what kind of annuals or shrubs to put into the ground in the fall that will still flower throughout the winter season. Well, ornamental cabbages, kales and mustards could possibly be the answer to your question. Ornamental kales, mustards and cabbages are members of the mustard family, which include your average cabbages, broccoli, brussel sprouts, cauliflower, collards, rutabagas and turnips. The common question, "Are they edible?" will arise, and the answer to that is yes. They are not often eaten but used for decorating the home and landscape.

Ornamental cabbages, kales and mustards are most commonly used in the landscape for their colorful and attractive foliage. During flowering season, they develop large rosettes of colorful leaves commonly variegated with cream, rose, pink and purple. After a few harsh frosts, the color ironically intensifies and provides a brighter and more vibrant appearance. Cabbages and kales can be differentiated in that the cabbages do not form as tight a head, they have solid-colored leaves that are not as ruffled as the kales, and they are usually edged on the outsides in a contrasting color. Most of the mustards do not form heads at all but are just leafy.

Ornamental cabbages and kales make awesome mass plantings and provide a more interesting look in mixed or single containers. If planted indoors, they require bright light as well as moist soil. If planted outdoors, they prefer full sun. If left to grow in a shady area, they may become leggy and unattractive.



Top Plant Performers of 2011

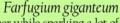
If you're looking for some fresh foliage to grow in next year's garden, check out these five hot picks from last summer.

Melodie Scott-Leach, Director of Habitat Horticulture



Salvia 'Wendy's Wish'

This hardworking salvia flowered its heart out since June and was only stopped by frost!



Large glossy leaves kept their cool all summer while sparking a lot of conversation among visitors. Boasting an alien-like appearance, this fave is a real trooper in the shade garden.



Celosia 'Fresh Look Red'

One of the few celosias I have seen that maintains its color and leaf health all through the season. Plan to grow it next summer!

Capsicum 'Purple Flash'

Grown mainly for the tricolor foliage, Purple Flash makes you feel cool just walking past it. This top performer grew well through the heat and maintained its vivid color.



Pennisetum 'Foxtrot'

Foxtrot is like the little grass that could. Flowering began in June and looked great through the summer and into fall. This pennisetum keeps its vase shape well and is a great backdrop for perennials.



GARDENING TIPS FOR NOVEMBER-DECEMBER

THINGS YOU SHOULD KNOW ABOUT PLANTING SPRING-FLOWERING BULBS

Most spring-flowering bulbs purchased and stored in September/October are generally planted in the November to January time frame depending upon the temperature of the soil. Here are some things you should know if planting spring-flowering bulbs is on your gardening schedule this fall:

Bulbs grow best in full sun or part shade, but flowers will last longer if they do not receive midday sun.

Good drainage is essential for spring-flowering bulbs. If drainage is a problem, improve it by mixing 2 to 3 inches of organic matter into the beds 10 to 12 inches deep.

Apply fertilizer and lime according to the results of a soil test. The pH for most bulbs should be between 6 and 7. It is not necessary to fertilize bulbs that are planted for only one season's flowering.

In general, bulbs are planted 3 to 4 times as deep (measured from base of bulb) as the width of the bulb. Large bulbs should be spaced 3 to 6 inches apart, small bulbs 1 to 2 inches. For best appearance, plant bulbs in masses.

For more information about spring-flowering bulbs, visit www.clemson.edu/hgic/plants/ landscape /flowers/hgic1155.html





As we approach the end of the year, I thought I'd share with you a partial list of animals that were either born at Riverbanks or arrived here from other AZA-accredited zoos and aquariums during 2011. Keeping in mind that I write this article with a full four months remaining in the year, this list helps to form an appreciation for all that routinely happens behind the scenes in order to maintain Riverbanks' animal collection.

-Ed Diebold, Director of Animal Collections & Conservation

BIRTHS AND HATCHES

BIRDS

Bali mynah (0.0.1 or 0.0.2 chicks in the nest box)

 Riverbanks has played a lead role in the captive husbandry and conservation of this critically endangered species.

Blue-crowned hanging parrot (2.3)

- This is a first hatching for this species at Riverbanks.

Spectacled owl (0.0.1)

The last time this species hatched at Riverbanks was May 2003.

REPTILES

Aruba Island rattlesnake (2.0)

- Endangered

Emerald tree boa (0.0.5)

- This is a stunningly beautiful species of snake.

Pan's box turtle (0.0.6)

- Critically endangered (Including these 6, there are now 75 in the ISIS* database.)

Vietnamese long nose snake (0.0.9)

MAMMALS

Giraffe (2.0)

- There now has been a total of 6 giraffes born at Riverbanks since February 2009.

ACQUISITIONS

AQUARIUM

Electric eel from Ripley's Aquarium

Spotted lagoon jellyfish (0.0.34) and Upside-down jellyfish (0.0.14) from Tennessee Aquarium

both new species for Riverbanks

Swell sharks (2.0) from Sea Life Aquarium

- another new species for Riverbanks

BIRDS

Curl-crested aracari (1.1) from Dallas World Aquarium

Eastern screech owl (0.1) from Carolina Raptor Center

Great horned owl (1.0) from Carolina Raptor Center

Green wood hoopoe (0.1) from Tautphaus Park Zoo

Red-billed leiothrix (3.1) from North Carolina Zoo

(originally in the collection as of January 1974, but not in the collection since January 1994)

Rufous fantail (1.0) collected from Saipan Island (Marianas)

Tawny frogmouth (1.0) from SeaWorld Orlando and female from San Diego Zoo

White-headed buffalo weaver (1.0) from Disney's Animal Kingdom and (0.1) from San Diego

a new species for Riverbanks.

Wreathed hornbill (1.0) from Oakland Zoo and (0.1) from St. Catherine' Island

- This species has not been in the Riverbanks collection since October 1976.

REPTILES

Sulawesi forest turtle (1.0) from private source

MAMMALS

Amur tiger (0.1) from Columbus Zoo

This tiger was born at Riverbanks in June 2003.
 Hoffman's two-toed sloth (1.0) from Topeka Zoo
 Red-ruffed lemur (0.1) from Palm Beach Zoo

Mule (1.0)

for pony rides

Shetland pony (1.0)

- for pony rides

Legend

*International Species Information System

1.0 = 1 male

0.4 = 4 females

0.0.7 = 7 unknown gender

Zooventures

Make sure you check out www.riverbanks.org for available dates and times or to register.

Early Childhood Classes



Young explorers and parents: Get ready to discover exciting things about nature! Each class is a learning adventure designed to teach your youngster new concepts that are appropriate for young minds. Classes are a combination of story time, songs, games, hands-on activities, animal encounters* and crafts.

*when available

Ages: 2 to 5 Length: 45 minutes \$9 per child Location: Wildlife Classroom (across from the Farm)

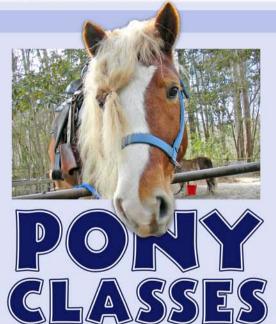
(Note: If you are not a Riverbanks member, a general admission ticket will be required in addition to the program fee.)

Animal Aerobics

Let's do the crabwalk, kangaroo hop and the inchworm! Come swing, slither, swim, hop, crawl and groove while learning about interesting ways animals move.

I Want to Work at the Zoo

So, you think you may want to grow up and work at the Zoo? Even if you think animals are too smelly to work with as a zookeeper, there are many other jobs at the Zoo you can do. Come prepared to dress up in many different hats for this fun-filled class.



Meet our Shetland ponies <u>and</u> our NEW mule "Jolly" up-close and personal!

Sure to be an unforgettable experience for young pony lovers, participants get a chance to feed, brush and ride the ponies.

Parent participation is required for children ages 3 to 7.

FAMILY ON SAFARI OVERNIGHT

Ages: 5 to adult Cost: \$39 members \$44 general public

Experience the zoo that few get to see, the Zoo at night! Riverbanks staff are your guides on an unforgettable night of activities and behind-the-scenes tours. Families should bring their own sleeping gear, tents and sense of adventure.

Price includes snack, light breakfast and entry into the Zoo.

COME DISCOVER THE NIGHTLIFE AT RIVERBANKS ZOO AND GARDEN!

NIGHT HOWLS

Ages: 6 to adult Cost: \$30 per person Group size: 15-50

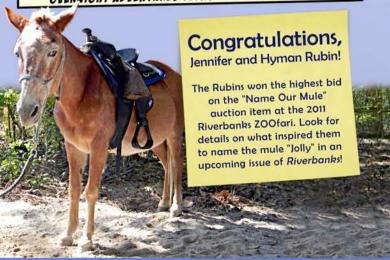
Looking for a nocturnal adventure without the sleepover?
Then Night Howls is the perfect compromise for your pack!
Meet education animals up close, take a look at some
out-of-sight places with zookeepers and enjoy a yummy snack.
Finally, discover what animals are sleeping and which ones are
awake with a fascinating night hike.

CLIPISTAVAS

Ages: 6 to adult Cost: \$48 per person November 28-December 15 Group size: 25-50

Celebrate the season with a new holiday tradition, a group sleepover at the Zoo! Meet animal friends up-close and learn about their special winter adaptations. Take a peek behind-the-scenes and be dazzled by the holiday lights. Wrap up your festive evening with a snack and night hike through the Zoo. The next morning, wake up to the call of the siamangs, enjoy a light breakfast, meet an animal friend, and then enjoy the rest of the day exploring the Zoo.

TO REGISTER FOR NIGHT HOWLS OR LIGHTS BEFORE CHRISTMAS OVERNIGHT ADVENTURES PLEASE CALL 803.978.1113



HOMESCHOOL MONDAYS

Class times are: 9:30-10:15am for ages 5 to 7 10:45-11:30am for ages 8 to 10 12:00-12:45pm for ages 11 to 13

December 5 and 12

Penguin Palooza Ages: 5 to 7

Penguins really like to chill...or do they? Put on your formal attire because you're invited to a Penguin-palooza to discover some pretty surprising things about penguins.

Slow and Steady Ages: 8 to 10

Some animals are busy beavers, but some just like to hang around. Does slow and steady really win the race?

Join us at the Zoo to find out!

The 3 "R's" Ages: 11 to 13

What's the difference between a renewable and non-renewable resource? How long does it take some resources to renew? What is sustainability? Join us at the Zoo to find out the answers as we study the 3 "R's": reduce, reuse and recycle.

January 9 and 23

What's for Dinner? Ages: 5 to 7

Do you eat like a bear, or is a tiger's menu more to your liking? Join us at the Zoo to compare your menu to some animals and see what's for dinner.

Spineless Wonders Ages: 8 to 10

Just because we're spineless, doesn't mean we're wimps. We spineless wonders have some pretty amazing defenses. This class explores the wonders that comprise 95% of life on Earth!

A Little Help Here! Ages: 11 to 13

We all need a little help every now and then. Animals do, too. Ecosystems can't run without interdependence. Join us at the Zoo to see why we all need a little help from our friends.

February 13 and 27

Eat Your Veggies Ages: 5 to 7

We're told to eat our veggies and that's all some animals know. Join us at the Zoo to meet some amazing herbivores and see how animals and plants really depend on each other.

Arachn-olympics Ages: 8 to 10

Spiders and other arachnids perform some physical feats that would make an Olympic athlete envious! Join us at the Zoo to see how you stack up to these tiny wonders and whether you can win a medal in the Arachn-olympics!

Inquiring Minds Ages: 11 to 13

Have you ever wondered why a flamingo stands on one leg? Are elephants really afraid of mice? Inquiry is the key to finding the answers. Only inquiring minds should join us for this class because, after all, inquiring minds want to know.



Fire and Ice

Surviving extreme temperatures is what penguins, tortoises and cockroaches do best! Come chill with us as we explore living on the edge of glaciers and volcanoes. Zoo campers will sizzle with excitement as they learn through storytelling, crafts, games, Zoo walks, animal encounters and behind-the-scenes tours.

Ages: 5 to 10 years old

Dates: Monday, December 19-Thursday, December 22

Time: 9:00am-3:00pm

Drop Off: 8:45am–9:00am (Main Zoo Gate) Pick Up: 3:00pm–3:15pm (Main Zoo Gate)

Cost: \$150 for members, \$205 for general public

Extended Stay & Play: 3:00pm to 5:00pm, \$60 per participant Early drop off is not an option for Winter Camp. All children must be picked up by 5:15pm.

Daily Pack List: Lunch*, snack and filled water bottle.
*Lunches must be non-microwavable and non-refrigerated.

Space is limited, so register today! Register online at www.riverbanks.org or complete this form.

Child's Name	e:				Age:
Street Addre	ess:				
City:			State	: Zip:	
Member #: Email:					
Phone (h):_			Work/Cell:		
		T-shirt	Size (Circle One)		
Child S (6-8)		Child M (10-12)	Child L (14-16)	Adult M	Adult L
		shirts MUST be wor tary T-shirt. Additio			
		CALCULATE YO	UR ENROLLME	NT FEE	
\$150	4 day session (members)			\$	
\$205	4 day session (general public)			\$	
\$60	Exte	Extended Stay and Play Option (5:15 pickup)			
		TOTAL FEE ENCLOSED			

PLEASE READ THE FOLLOWING

Registration is by mail or by secure online form only: www.riverbanks.org Full payment MUST accompany registration.

Written cancellations MUST be received no later than two weeks prior to camp date to receive a refund (minus \$30 processing fee).

SEND FORM AND FULL PAYMENT TO:

Winter Break Camp- Riverbanks Education Department PO Box 1060 – Columbia, SC 29202-1060

Please make checks payable to Riverbanks Zoo and Garden.

Applicants will be enrolled in the order received.

If all sessions are full, your enrollment form will be returned to you and your child will be placed on our waiting list.



Kids' garden programs include a lesson, craft and story.

Ages: 3 to 4 with an adult • \$9 per child (with adult)
Time: 10:00 - 11:00am • Location: Botanical Garden

Give Thanks to Trees - November 3 and 10

Trees provide so many things for us to be thankful for. Join us as we do a tree walk, make a leaf book and take a look at how wonderful trees are.

FOR ADULTS



Using fresh greens, seed pods and natural accents, you can create unique decorations for the holidays. This workshop will cover the basics of how to use natural materials, and everyone will make something to take home.

November 19, 10am to noon . Cost: \$20



growing good kids.

Hands-on gardening classes for bigger kids

Ages: 8 to 10 (Level 1) and 11 to 13 (Level 2)
Time: 10am to 3pm • Location: Botanical Garden • \$20 per child

Saturday, November 12

- Level 1: Try your hand at designing a backyard as everyone learns about the elements of symmetry, color and balance.
- Level 2: Learn how the water cycle affects the natural world by investigating all the phases of the cycle and uncovering the importance of wetlands as an ecosystem.

Saturday, December 10

- Level 1: Delve into the world of fruits and nuts as we learn all about how they grow, the many different varieties available and some fun things you can do with them.
- Level 2: Discover the secret life of plants as we uncover the processes within that make plants grow.

Saturday, January 14

- Level 1: Explore how we can care for natural resources through a variety of hands-on crafts and explorations
- Level 2: Take a look at how all the parts of the plant work together to survive.

Junior Master Gardeners for Homeschoolers

JMG provides an opportunity for youth to interact and bond with nature through hands-on gardening, scientific experiments and arts. Level 1 (ages 8 to 10) explores insects, plant life, fruits and vegetables, design and more. Level 2 (ages 11 to 13) focuses on plant growth and propagation methods, as well as the effects of soil and water cycles on plants.

Sessions take place on Wednesdays beginning in January.
Students will complete certification for the entire program during that time. Participants are required to do a set number of group activities with the leaders, as well as individual activities each week on their own, in order to obtain certification.

Dates: Wednesdays, January 11 – May 24 Time: 10am to 12:30pm Ages: 8 to13

Cost: \$150 per child includes handbook, T-shirt and supplies

Questions about Garden programs? Call 803.978.1131

Where Science Class and the Natural World Meet

- Kristin Ziegler, Courtney Randle, Ishmael Abdus-Saboor and Heather Doggett, Director of Conservation Education



After an enthusiastic welcome from Riverbanks Zoo and Garden staff, sixth grade ZooBot students fanned out over the facility searching for the common and scientific names of animals in a scavenger hunt.

As the students worked, they learned about zoo etiquette and appropriate ways to behave and engage with the animals at the enclosures. Students learned to read the Zoo map and locate important buildings they will visit during future trips. They also took turns reading animal enclosure informational signs and answering probing questions raised by the ZooBot teachers. This was the new students' introduction to the Zoo.

ZooBot is a science-infused magnet program at Longleaf Middle School in partnership with Riverbanks Zoo and Garden. Through hands-on activities and field studies, students gain a greater understanding and respect for the world around them. "They understand their impact and become ambassadors to their families for nature," said co-lead teacher Kristin Ziegler. Riverbanks' education department was instrumental in developing the curriculum and vision for the program.

Kenna Lucas was one of those sixth grade students at the Zoo. Not even a month into the school year and she's got it all figured out. "ZooBot is about wildlife and what happens in it. It's an extraordinary experience and an amazing place to learn," she said.

Now in its third year, 145 students participate in the magnet program. Sixth graders focus primarily on the living things, while seventh graders learn about conservation of the natural environment. As they prepare to transition into high school, eighth graders discuss careers and ecological issues with an eye to formulating solutions. ZooBot is an interdisciplinary magnet program, which means teachers across the school collaborate to ensure that assignments and projects relate to the core mission of the magnet.

Longleaf Middle Principal Katinia Davis says, "ZooBot is an integral part of the instructional programs at this school. We are most fortunate to have a strong partnership with Riverbanks Zoo and Garden and appreciate the staff working closely with us to design a magnet program that allows students to explore the many branches of science."

At the Zoo, students receive exclusive access to composting in the elephant enclosure, animal dietary kitchens and veterinary clinics. Projects include an overnight field study at the Zoo, designing animal enclosures and enrichment activities, making behavior and adaptation observations, creating art based on animal themes and conservation issues, as well as crafting public service announcements to be aired on Longleaf Middle's news shows and R2TV, Richland Two's cable access channel on Time Warner Cable.

Heather Doggett, director of conservation education at the Zoo says, "ZooBot students have the rare opportunity to experience Riverbanks Zoo and Garden like nobody else. Multiple visit programs like this forge lasting relationships to the natural world and allow for deeper questions and connections to applied science. I am always impressed with the students' thirst for answers and their caring attitudes towards wildlife; they are certainly budding conservation stewards."



In addition to regular trips to Riverbanks Zoo, students can look forward to field studies like an aquatic insect project at Sesquicentennial State Park, a guided tour of Congaree National Park and a study of ecology, marine biology and marshland ecosystems on SeeWee Island in Awendah. A trip to the South Carolina Aquarium features a talk with veterinarians at the Sea Turtle Rehabilitation Hospital.

In February, students will travel to Disney World to participate in the Youth Education Series (YES). Students will receive a behind-the-scenes look at running Disney's Animal Kingdom including how staff members train animals to keep them healthy and thriving in captivity.

Around Longleaf Middle, ZooBot students maintain gardens and compost beds and are responsible for collecting and sorting recyclable items for the school. This year also marks the beginning of quarterly community events, such as an Adopt a Pet Day, Learn about the Environment Day and Recycling Day.

According to lead teacher Courtney Randle, the program offers an alternative to students who don't want to dwell in the cyber world. ZooBot students are more apt to be outside, where they can investigate bugs, rocks, animals and nature in general. Randle describes the magnet as a place where that kind of student can "shine."

Sixth grader Justin Wright is one such student. "Personally, what I love about ZooBot is interacting with plants and animals, helping and learning more about my environment and surroundings," he said.



Learn more about the ZooBot program at www.ZooBot.wikispaces.com

from Red

Red-necked Wallaby Macropus rufogriseus

Status in the Wild

Where's Home?

Red-necked wallables live in eastern and southeastern Australia. They prefer coastal woodlands that have nearby grasslands.

Digs at the Zoo

The Kangaroo Walkabout exhibit, across from the Bird Conservation Center

Best Time to See Me

The Kangaroo Walkabout opens at 10am and closes an hour before the Zoo closes, but you can still see the animals from outside the exhibit. The animals are most active during early morning and late evening. Their feeding time is when the walkthrough closes, so if you walk past their exhibit at that time they will be up and active.

What's for Dinner?

Red-necked wallabies spend a lot of time eating grasses and other plants. At the Zoo, we give them branches of edible trees along with a diet of mixed fruits and vegetables including grapes, lettuce, apples, cucumber, corn and more.

Did You Know?

Red-necked wallabies have very strong back legs and tails, which allow them to get around by hopping. Wallabies can hop 4 to 6 feet high and jump up to 25 feet! They have smaller forepaws that are used to dig in the dirt when looking for food. They also use these paws to hold larger pieces of food and pull branches within reach.



Keeper's Note

Red-necked wallabies are part of the marsupial family. When born, a baby is the size of a jelly bean and is not fully developed yet. The joey stays in its mom's pouch for about six months so that it can continue to grow and develop before it starts to explore the outside world.

Since wallabies have thick fur, they keep themselves cool by licking their forearms and hiding underneath the various bushes that we have in the exhibit. Wallabies are good swimmers, so on a very hot day you might even see one cooling off in the pond. Our wallabies can be difficult to spot when you visit the Kangaroo Walkabout, so make sure you look around carefully to see how many wallabies you can find!

- Alyson Goodwin, Mammal Keeper

to Green

Green Chromis Chromis viridis

Status in the Wild

Where's Home?

This fish makes its home on coral reefs throughout the Indo-Pacific, from the Red Sea all the way to the Ryukyu Islands of Japan down to New Caledonia.

Digs at the Zoo

Coral Reef Gallery in the Aquarium-Reptile Complex

Best Time to See Me Anytime

What's for Dinner?

These diminutive fish are primarily planktivorous. This means that they eat tiny plants and animals that float in the water. Plankton can include organisms such as algae, shrimp and fish larvae, copepods and fish eggs. At the Zoo, we provide a mix of small meaty items like mysis shrimp, live Artemia and small krill. A few times a week, we also offer rotifers and a bit of "green water" that contains the microalgae Nannochloropsis sp.

Did You Know?

Green chromis are classified in the family Pomacentridae, or damselfishes. The most well-known relative is the clownfish. However, the genus Chromis is the most numerous genus of damselfish, containing over 75 described species!



Keeper's Note

Both as aquarists and visitors, we tend to overlook some of the small fish on display in our aquariums. But it's important to know that even tiny fish are valuable in and well-suited to their particular environment.

The green chromis, while only reaching a maximum size of around 3 inches, is a very important shoaling species on shallow coral reefs. In fact, in the wild, groups of hundreds or even thousands of individuals are not uncommon. They come out of their coral branch hiding places to feed on the plankton, but they also contribute back to the plankton by producing clutches of eggs that number in the tens of thousands.

Eggs are laid on substrates, such as sand and coral rubble. When these eggs hatch, the larvae become a good food source for many fishes. In addition, juvenile and adult green chromis are eaten by other reef inhabitants, including hawkfishes, angelfishes, triggerfishes, and even larger damselfishes.

At the Zoo, you'll see our small group often swimming together. We provide them with a complex habitat designed to mimic their natural home.



SUPPORT SCIENTIFIC RESEARCH

Partnering for Conservation Running with Penguins

Dean Schuster has been training in the Famously Hot Columbia summer, and now is going to train with the penguins at Riverbanks Zoo on Saturday, December 10! He'll run all day long on a treadmill at the Zoo's penguin exhibit to raise money for and celebrate our Antarctic friends. Come by and talk with Dean about his upcoming adventure, his love for penguins and our shared responsibility to care for the natural world. Don't be surprised if he's slightly out of breath, he'll rack up about fifty miles during the event. Now that's commitment to conservation!

From the Antarctic Continent...

Riverbanks is working with Dean Schuster to support Oceanites (Ocean-Eye-Tees), a nonprofit organization that does real-world penguin research and conservation on the Antarctic Peninsula. The assessment and monitoring activities of Oceanites has been a lynchpin for penguin and environmental conservation for more than two decades.

...to the Rocky Shores of Peru

In addition to supporting the ongoing work of the Oceanites Project to protect Antarctic penguins, a portion of the funds raised by Dean will allow for Riverbanks staff to participate in another important, ongoing field conservation initiative for Humboldt penguins in Peru.



Dean Schuster, an experienced ultra-marathoner from Columbia, is serving the important cause of penguin conservation in an outlandish, extreme way. He's running the Antarctica Marathon! Really! The race is a full marathon (26.2 miles) and will take place on the Antarctic Peninsula on March 9. 2012.

Because the race is remote and the landscape inhospitable, very few runners worldwide have ever attempted it.

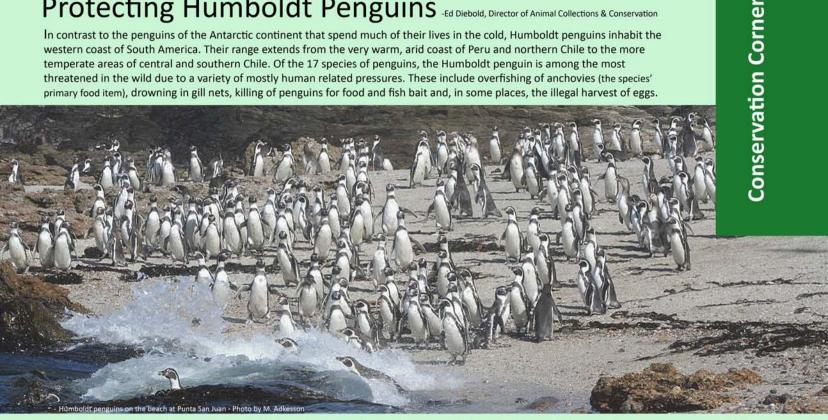
Come to Riverbanks on Saturday, December 10, to celebrate penguins with us! They'll sing your praises, or at least squawk them with the greatest sincerity.

Follow Dean's Adventure Twitter: @deanguin Web: runningwithpenguins.com



Protecting Humboldt Penguins -Ed Diebold, Director of Animal Collections & Conservation

In contrast to the penguins of the Antarctic continent that spend much of their lives in the cold, Humboldt penguins inhabit the western coast of South America. Their range extends from the very warm, arid coast of Peru and northern Chile to the more temperate areas of central and southern Chile. Of the 17 species of penguins, the Humboldt penguin is among the most threatened in the wild due to a variety of mostly human related pressures. These include overfishing of anchovies (the species' primary food item), drowning in gill nets, killing of penguins for food and fish bait and, in some places, the illegal harvest of eggs.



Importantly, unlike its Antarctic counterparts that nest on the surface of the ground, the Humboldt penguin is predominantly a burrow nester. It is the interesting nature of burrows in which the species prefers to nest that creates a unique challenge for the Humboldt penguin. The penguins dig their nest burrows into deep layers of guano (aka bird droppings).

Throughout its range the Humboldt penguin is intimately associated with a trio of marine bird species commonly referred to as "guano birds." These species, the Guanay cormorant, Peruvian booby and Peruvian pelican nest along this rugged shoreline in staggering numbers. Over countless nesting seasons, they have laid down deep deposits of guano into which the Humboldt penguin digs to create its nest.

So, why does nesting in a burrow that is excavated in guano deposits pose a challenge for the Humboldt penguin? The answer is that the guano is a valuable commodity; it is harvested periodically by the local people as a rich, organic fertilizer. The process of harvesting guano creates a disturbance that disrupts the nesting cycle of both the Humboldt penguins and the guano birds. Overharvest of the guano, in turn, poses a threat to the Humboldt penguin by eliminating its primary nesting habitat.

Fortunately, at Punta San Juan, the largest Humboldt penguin nesting colony in Peru, penguin biologists have worked with the government agency PROABONOS to establish a method that allows for the sustainable harvest of guano with minimal impact on the native wildlife. A joint management agreement was signed in 1998 between PROABONOS and the Punta San Juan Project (PSJ) to use the site for research and conservation. The agreement allows for the PSJ Project to advise PROBOANOS on the timing, location and manner in which guano harvests are conducted. It also allows the PSJ Project to provide observers, who monitor the harvest in order to ensure that disturbance to wildlife is kept to an absolute minimum. Subsequent guano harvests in January through March of 2001 and 2007 have clearly demonstrated that this management model is mutually beneficial for the government, the workers and the wildlife.

Another guano harvest is currently being planned for January through March 2012. Through the Riverbanks Field Conservation Associate's Program, one of our staff members will have the opportunity to observe the 2012 harvest. This individual will partner in the field with staff from other AZA-accredited institutions as well as Peruvian nationals. Participation in this great "rubber meets the road" field conservation effort is one of the many ways in which Riverbanks contributes to the conservation of wildlife and wild places around the globe. The presence of Riverbanks staff will make a real difference for the conservation of this critical Humboldt penguin nesting colony at Punta San Juan and for the multitude of guano birds that co-inhabit the area. Acknowledgement goes to the Wildlife Conservation Society, St. Louis Zoo and Brookfield Zoo for spearheading past and current conservation efforts at PSJ.

> 2007 Guano Harvest Volunteer Observer Campaign, Punta San Juan Guano Reserve, FINAL REPORT, Lima, May 20th, 2007 Susana Cárdenas, Guano Harvest Coordinator, Associate Researcher-CSA, Patricia Majluf, PSJ Project Coordinator Director-CSA



The Riverbanks Field Conservation Associates Program (RFCAP) is an exciting new initiative that allows Riverbanks staff members in all areas of operation to apply for various opportunities to participate in field conservation programs around the globe. The RFCAP is the result of the efforts of Bob Davidson, Immediate Past Chair of the Riverbanks Society Board of Directors. Bob has an appreciation and understanding of the potential value of these amazing experiences not only to Riverbanks but also to the professional development of Riverbanks staff members. It is because of his vision and effort that the first "class" of four Riverbanks Field Conservation Associates were able to travel to Suriname in the spring of 2011 to participate in sea turtle conservation efforts in partnership with the World Wildlife Fund (WWF) and the Sea Turtle Conservancy. Thank you, Bob, for making this exciting new professional development program a reality.

Drawn to Vature

Do you enjoy watching animals and being outdoors? Have you ever wanted to be an artist? Now is your chance! Grab a clipboard or notebook and head to the Zoo.

Here are two easy art projects you can do at the Zoo that will help you focus on the beauty and shapes found in nature.



A scarlet macaw drawing submitted by Gracie R. of Columbia

Animal Art

a notebook or clipboard with paper Supplies:

a pencil

crayons or colored pencils

your imagination

Find a quiet spot near an animal of your choice.

Sit and watch for a couple minutes. (Don't draw yet, just appreciate the animal.) Note the animal's shape, color and movement. Really look at the animal before you start drawing. Notice the little details.

Now pick up your pencil and draw the simple outline or shape of the animal (no need to worry about colors or shading at this point).

Next, add details like claws, whiskers, feathers or fins.

Lastly, add color!

Tree Rubbings

a crayon with the paper peeled off Supplies:

a few sheets of paper

Staying on the Zoo's pathways, choose a few trees to make rubbings from and follow these steps:

Lay a piece of paper over the bark of a tree and, using the side of the crayon, rub the paper. Soon the bumps and ridges of the bark will appear through the paper.

Next to the rubbing, draw a picture of a leaf from that tree.

Now choose another tree with different bark for your next rubbing and repeat the steps above.

When you are all done, ask an adult to help you find a book or website about trees to see if you can figure out the kind of trees you chose for your rubbings.



FİYE WAYS TO TURN YOUR WHITE CHRISTMAS GREEN

Light Up with LEDs

Brighten your holidays with significant money and energy savings by replacing incandescent lights with LEDs (light-emitting diodes). Three 100-light strands of LED bulbs running 5 hours daily from Thanksgiving to New Year's Day will use on average only 3 kilowatt-hours—an energy cost of just 30 cents. In that same period of time, large incandescent bulbs can spin your meter at a rate of 472 kilowatt-hours, costing nearly \$60. With a 100,000-hour life span, your Christmas LEDs could last more than 50 years!

Something Old, Something Borrowed...

Planning to buy holiday decorations this year? Two-thirds of households buy new Christmas decorations each year and spend over \$7.5 billion! If these households diverted just \$6 of their decorating budget to reusable items, the money saved could pay to heat 5.9 million New England homes every hour between Christmas and New Year's Day. Before you buy new, consider decorating with seasonal plants (poinsettia, holly, pinecones, etc.), reusing items from previous years, swapping ornaments with friends and family, or collecting discounted vintage items from an antique shop.

Tie One On for Nature

Get creative this holiday season! Instead of decorating gifts with standard ribbons and bows, use recyclable paper bows (natural fiber raffia), dried flowers or a reusable scarf, bandana or cloth napkin. If two out of three households saved just an arm's length of ribbon, we could tie a bow around the earth!

That's a Wrap

Fancy paper can look pretty under a tree, but have you ever wondered how much of it turns to trash? Between Thanksgiving and New Year's, Americans produce an extra 2 billion pounds of garbage per week, mostly as a result of gift packaging. You can reduce wrapping rubbish reusable by being resourceful and choosing packaging like tote bags, baskets, bowls or flower pots. If you still prefer to wrap it up, be sure to look for recycled content and save excess pieces to use next year. If 40 percent of US households reduced their holiday paper consumption by just two sheets this year, the savings could gift wrap the island of Manhattan!

Lighten Santa's Load

Zoo memberships, tribute bricks, gift cards, concert tickets, restaurant certificates and movie vouchers can be great alternatives to packaged and wrapped holiday presents. And if you buy these gifts online, you'll not only save between 5 and 10 pounds of packaging waste, you'll also reduce the time, stress and energy associated with traffic, crowds and long lines. If 50 percent of households replaced just two packaged presents with gifts that could slide into an envelope, 50 million pounds or more of waste could be saved!

For more great conservation tips, visit environmentrtp.org

What is the Kid's Commission?

Riverbanks Zoo and Garden's Kid's Commission is the go-to source to test the kid appeal of the Zoo's newest programs, attractions and exhibits. The Kid's Commission meets on Monday evenings, approximately six times a year. There are 12 positions available, each for a one-year term. Commission members are outgoing, creative and eager to help conserve wild animals and wild spaces. Each meeting will consist of a sneak-peek into how the Zoo runs, a project and a light snack.

How do I apply? Mail in your name, age, school, address, email, phone number and a description of yourself along with a paragraph answering the question: "If I ran a zoo, what would I do?"

When are applications due?

Applications are due by November 30, 2011

Where do I mail my application?

Please send to:
Kid's Commission
c/o Conservation Education Division
PO Box 1060, Columbia, SC 29202-1060

When will I hear from Riverbanks?

Entrants selected for interviews will be contacted by phone in December.

Riverbanks Zoo and Garden thanks all entrants, but only those selected for interviews will be contacted.

RIVERBANKS SOCIETY

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