

ANIMAL KEEPERS'

MARCH 2010

FORUM



The Journal of the American Association of Zoo Keepers, Inc.

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36th Anniversary - 1974 - 2010

MISSION STATEMENT

(Revised April 2009)

American Association of Zoo Keepers, Inc.

The mission of the American Association of Zoo Keepers, Inc. is to advance excellence in the animal keeping profession, foster effective communication beneficial to animal care, support deserving conservation projects, and promote the preservation of our natural resources and animal life.

This month's cover features a drawing of Black and White Colobus (Colobus guereza) drawn by Jessa Franck, a keeper at Mesker Park Zoo in Evansville, IN. Guereza inhabit the forests of sub-Saharan Africa, usually in groups of a single adult male, one or two females, and their offspring. Guereza move primarily by quadrupedal walking and bounding. Their primary diet is leaves and they have multi-chambered stomachs with bacterial colonies that allow them to digest cellulose. This anatomical feature gives them a pot-bellied appearance and also produces lots of gas. Their diets may also include fruits, flowers and twigs. They have a slow metabolism and spend up to 50% of their time resting. Another distinct feature of Colobus is the lack of thumbs. Infants are born after a six-month gestation period. Their initial coloring is white with pink faces that gradually darken after several weeks. Female Guereza average 9.2kg [20.28lbs.] and males average 13.5kg [29.76lbs.]. Their long tails average 26-28 in. [66-71cm] in length. This species reaches sexual maturity at between 4-6 years and may have a lifespan of up to 22 years. At one time the Colobus was hunted excessively for its beautiful fur, leading to its extermination in some areas. Its skin has been used to make dance costumes, hats and capes. Today, the greatest threat to its continued existence comes from loss of habitat as forests are cut down. This species is listed on Appendix II of CITES. Mesker Park Zoo currently has 1.2 Black and White Colobus: Rafiki, Michael, and Zoe. Thanks, Jessa!

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the editor. The editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or email contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone 785-273-9149; FAX (785) 273-1980; email is akfeditor@zk.kscoxmail.com< If you have questions about submission guidelines, please contact the Editor.

**Deadline for each regular issue is the 10th of the preceding month.
Dedicated issues may have separate deadline dates and will be noted by the editor.**

Articles printed do not necessarily reflect the opinions of the *AKF* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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BFR Website: <http://aazkbfr.org>**

Scoops & Scuttlebutt



Announcement from AKF Editor on Avian Husbandry Issue

We have been very fortunate to receive a lot of great submissions on all aspects of avian husbandry to include in the planned dedicated issue of *Animal Keepers' Forum*. In fact, we have so much material we have decided to combine the April/May issues into one expanded edition in order to include all of the material together. Articles include such topics as training, enrichment, hand-rearing, artificial insemination, medical issues, breeding, etc.

So, we wanted to make this announcement now so when you do not receive a separate April issue of *AKF* you won't think you have missed it or it has been lost in the mail. We anticipate that this expanded dedicated issue on Avian Husbandry will be published and mailed by mid- to late April.

Diane Olsen, Assistant Curator, Behavioral Management Coordinator, and Pelecaniformes TAG Chair from Moody Gardens in Galveston, TX is serving as Consulting Editor for this special issue of *AKF*.

BIG Benefit for Contributing to TT or EO Columns!

Calling all AAZK members interested in the possibility of FREE registration to the 2010 AAZK National Conference! Get your training and enrichment articles into the Enrichment Options & Training Tails Column editors to be considered for a complementary registration to the next AAZK National Conference in Philadelphia (August 22-26, 2010). The AAZK Behavioral Husbandry Committee will choose one article printed between January 2010 and June 2010 in either the *AKF's* Enrichment Options or Training Tails columns to be awarded a FREE conference registration.

Submit Enrichment Options articles to: Julie Hartell-DeNardo (julieh@oaklandzoo.org) or Rick Kotarsky (rkotarsky@cityoftulsa.org). Submit Training Tales submissions to: Angela Binney (Angela.C.Binney@disney.com) or Kim Kezer (kim@kezer.net).

Small print: Authors will be notified by July. Only one registration will be awarded no matter how many authors are on the paper – designation of which author of a multiple-author paper is to receive the free registration is not the responsibility of AAZK or the AAZK Behavioral Husbandry Committee.

Follow Conservation Work Worldwide on Twitter

Wish you could be in the field with world-renowned conservationists? The next best thing is to follow them on Twitter. Beginning this month, @IndplsPrize will feature conservationists on seven continents tweeting about every major animal species group. Each conservationist will send at least two tweet messages a day for two weeks.

The following heroes of conservation will provide a first-hand account of their day's work:

- Jan Ramer <http://www.adventures-in-climate-change.com/adventures-in-climate-change/Mountain_Gorilla_Doctor/Mountain_Gorilla_Doctor.html> (Gorillas in Africa)
- Jason Williams <<http://www.indyzoo.com/pdf/IndyZooMag3Q09.pdf>> (Iguanas in Dominican Republic)
- Laurie Marker <<http://www.cheetah.org/?nd=people>> (Cheetahs in Africa)
- Charles Foley <<http://www.examiner.com/x-9773-Providence-Parks-Examiner~y2009m9d28-Saving-the-African-elephant--Dr-Charles-Foleys-presentation-at-Roger-Williams-Park-Zoo>> (Elephants in Africa)
- Carl Safina <<http://www.blueocean.org/about-us/blue-ocean-institute/founders>> (Oceans ecology in the USA)

- Aniruddha Mookerjee <<http://www.outlookindia.com/article.aspx?228497>> (Wildlife Trust India)
- Pati Medici <http://www.tapirs.org/Downloads/newsletters/tcn_18_low.pdf> (Lowland Tapir Conservation in Brazil)
- Anne Savage & Rosamira Guillen <<http://wildlifeconservationnetwork.org/wildlife/cottontop.html>> (Proyecto Titi Cotton-Top Tamarins in Colombia)
- Steve Shurter <<http://www.giconline.org/okapi.asp>> (Okapi Conservation Project in Democratic Republic Congo)
- Joe Riis <<http://vodpod.com/watch/2087882-pronghorn-migration-joe-riis-rick-ridgeway-hall-sawyer>> (Pronghorn Passage in the USA)
- Jana Johnson <<http://articles.latimes.com/2007/mar/26/local/me-blues26>> – (The Butterfly Project in the USA)

If you're new to Twitter, it's easy to create an account. Just go to www.twitter.com and sign up. Click the Find People tab, and type IndplsPrize in the search box. Once IndplsPrize appears, click on the icon that looks like a person to start following. In just a few minutes, you can trace Laurie Marker's footsteps as she tracks cheetahs in Africa or Gerardo Ceballos' efforts to save the endangered species in Mexico.

New AAZK Award Announced

Certificate of Merit in Conservation Award

The American Association of Zoo Keepers, Inc. (AAZK) is the administering organization of the Certificate of Merit in Conservation presented by the AAZK Awards Committee. The purpose of the award is to recognize outstanding keeper-initiated contributions to conservation of wildlife and their habitats. It is hoped that recognition of outstanding efforts by keepers to contribute to conservation will provide incentive to keepers to continue to be leaders in this important endeavor.

The Certificate of Merit in Conservation Award was established in 2010 by the Conservation Committee, Amanda Kamradt, Chair. The award is presented at the annual AAZK National Conference.

Qualifications:

1. The nominee must be a full-time animal care professional individual or team, employed in any North American zoological institution, aquarium or related facility.
2. The nominee must be nominated by an AAZK member. You may nominate yourself.

Nomination Procedure:

1. List the name(s) of the keeper(s) who initiated the conservation project, the institution's name, address, phone and director.
2. List and *document* outstanding keeper-initiated contributions to a conservation project. Verification of these facts must be signed by the zoo director, curator, or immediate supervisor of the nominee.

The deadline for nominations is MAY 1st of each year.

Selection Procedure:

The Awards and Conservation Committees will independently review each nominee.

Time to Nominate Your Peers for AAZK Awards

Nominations are being accepted for 2010 for the various awards given out by AAZK, Inc. each year at our National Conference. This year's awards will be presented at the conference in Philadelphia, PA (August 22-26, 2010). Award nominations should be submitted to the AAZK Awards Committee, Chaired by Janet McCoy from the Oregon Zoo.

Information about these awards, including criteria for nomination and the required forms for submitting your nominations are available on the AAZK website (www.aazk.org) - look under the Committees link. Please be aware that nominations for all awards must be received by **1 May 2010**. Completed nomination forms and any accompanying documentation materials should be sent to: Janet McCoy, AAZK Awards Chair, 846 NW 170th Dr., Beaverton, OR 97006.

The AAZK Awards include:

- Lifetime Achievement Award
- Lee Houts Excellence in Enrichment Award
- Certificate of Merit for Zoo Keeper Education
- Certificate of Excellence in Exhibit Design Renovation
- Mazuri® Animal Nutrition Award
- Jean M. Hromadka AAZK Excellence in Animal Care Award
- The Lutz Ruhe Meritorious Achievement - AAZK Professional of the Year
- Certificate of Merit in Conservation Award
- The AAZK Chapter of the Year Award

IMPORTANT NOTICE for all Members with PayPal Accounts

All AAZK members who use a PayPal account for renewing memberships or making purchases on the AAZK website are please asked to make sure that the address in their PayPal profile is their current mailing address. If this address is not current, your monthly *Animal Keepers' Forum*, your membership card, or any merchandise purchases you make on the website will be sent to an incorrect address and will not be forwarded to a newer address. Please take a moment and double check your PayPal profile to make sure it displays your current mailing address.

Internet Searching for a Cause

What if AAZK earned a penny every time you searched the Internet? Or how about if a percentage of every purchase you made online went to support our cause? Well, now you can! GoodSearch.com is a Yahoo-powered search engine that donates half of its advertising revenue, about a penny per search, to the charities its users designate. Use it just as you would any search engine, get quality search results from Yahoo, and watch the donations add up! Each search generates a penny for AAZK - and that can add up quickly! Here is an example of how much AAZK can earn: 100 supporters each search 4x a day = \$1460/year; 500 supporters each search 4x a day = \$7300/year; and 1000 supporters each search 4x a day = \$14,600/year

So get in the habit of searching using GoodSearch.com and support AAZK, Inc.!



July 18 - 24, 2010

Starting Planning Now!

From the Executive Director

I spent almost 25 years in the animal business as a volunteer, animal keeper, and finally as a Supervisor. I have since left the zoo business and in addition to being the Executive Director of your Association, I am a full-time safety professional for a large municipality.

During my annual visit to the doctor where we all get poked and prodded in places that we'd rather not, my doctor administered a hearing test and informed me that I have advanced hearing loss in the high frequency range, and it will not be too long down the road when I will have to be evaluated and fitted for hearing aids. Huh? Could you repeat that?

As I normally do (it's my job), I digest and process the information seeking root cause. Because there is no contributing hereditary factors and I was not a member of a rock band in the seventies, the root cause points to my employment stint in the zoo profession.

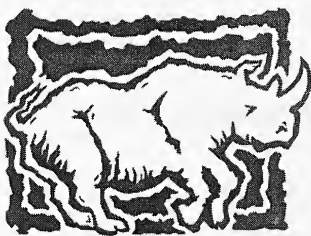
Almost 25 years of squawking macaws and cockatoos, trumpeting elephants and screaming primates (and employees) have affected me with profound hearing loss. That's bad news. The very bad news, hearing loss does not regenerate. It will never get better, and it will only worsen over the course of the remainder of my life. It is permanent.

As a safety professional, I understand the dynamics of hearing, hearing loss and hearing protection. I am also an advocate for safety in this profession. Every zoo and aquarium facility plans for both natural disaster and animal escape. You most likely drill and train and practice response until the reaction becomes routine; which you should.

But in the zoo business, we continue to overlook the small stuff. The chronic exposures that do not have an immediate effect on the body, but over the course of time, will become life altering. So do yourself a favor; wear your personal protective equipment when required and when it's not required; quickly evaluate the eventual outcome of chronic exposures over the course of your career.

Follow these simple steps:

- Stretch before you start work.
- Wear latex or nitrile gloves when handling or dispensing medication to your animals.
- Wear a dust mask when working with hay, straw and dried fecal material.
- Voluntarily wear an N95 respirator when handling any disinfectants, bleach and pool chemicals.
- Wear a form of hearing protection when working with animals and/or machinery in enclosed spaces.



**AMERICAN
ASSOCIATION
of ZOO KEEPERS**

Twenty-five years from now, you'll thank me – but I won't hear you.

Ed Hansen
AAZK Executive Director

AAZK Announces New Members

New Professional Members

Alessandro Gambelli, **Safari Park (Italy)**; Siobhan McCann, **Zoo New England (MA)**; Elyse Pasquale, **Beardsley Zoo (CT)**; Bryan Sincavage and Crista Melchiorre, **Cape May County Zoo (NJ)**; Christine Vela, **Trailside Zoo (NY)**; Laurie Bay and Gil Myers, **Smithsonian's National Zoological Park (DC)**; Ian Shelley and Melinda Schlegel, **Virginia Safari Park (VA)**; Lori Clark, **Lynnwood Park Zoo (NC)**; Jeff Gray, **Sam's Path Zoo (GA)**; Nancy Kitchen, **Jacksonville Zoo & Gardens (FL)**; Colleen Reed, **Center for Great Apes (FL)**; Ashley Martin, Melissa Wright, L. Caroline Jones, Matthew England, Jennifer Martin, Lynn Klein, Meghan Nemes, Jessica Kretzschmar, Kelley Rogers, Josh Meyerchick, Carla Thompson and Tray Morgan, **Birmingham Zoo (AL)**; Jessica Linck, **Columbus Zoo & Aquarium (OH)**; Kenzi Lowrance and Abbie Mingus, **Indianapolis Zoo (IN)**; Matthew Ardaiole, **Potawatomi Zoo (IN)**; Aimee Fannon, **Ft. Wayne Children's Zoo (IN)**; Sara Baby, **Binder Park Zoo (MI)**; Benjamin Sutton, **Minnesota Zoo (MN)**; Maicie Sykes and Carey Goedel, **Lake Superior Zoo (MN)**; Rebecca Hannah, **Peoria Zoo (IL)**; Jennifer Callahan, **Sedgwick County Zoo (KS)**; Heather Huberty, Wendy Irwin and Stephanie Abel, **Omaha's Henry Doorly Zoo (Ne)**; Brian Patrick Gregory, **Audubon Zoo (LA)**; Emily Blanchard, **Tulsa Zoo & Living Museum (OK)**; Stephanie Appleton, **Caldwell Zoo (TX)**; Taylor Howard and Ryan Herman, **Frank Buck Zoo (TX)**; Brooke Vincent, **Houston Zoo (TX)**; Eric Carlson, **Denver Zoo (CO)**; Mark Heully, Lindsay Koch and Lauren Perry, **Santa Barbara Zoo (CA)**; Donielle York, **Monterey Bay Aquarium (CA)**; Brooke Webber, **Sacramento Zoo (CA)**; and Shannon Jensen, **The Alaska Zoo (AK)** We do not publish the names of new and/or renewing members who do not list their facility on their membership application/renewal (There were six in March).

New Institutional Members

Great Bend Zoo, Great Bend, KS
Scott Gregory, Director

Pine Grove Zoo, Little Falls, MN
Marnita Van Hoecke, Director

Renewing Contributing Members

Ann Outlaw, Big Pinekey, FL
Central Florida Zoo Docent

Renewing Institutional Members

Disney's Animal Kingdom, Lake Buena Vista, FL
Kathryn Hall, Animal Program Administrator

Milwaukee County Zoo, Milwaukee, WI
Chuck Wikenhauser, Director

Northeastern Wisconsin Zoo, Green Bay, WI
Neil Anderson, Director

The Wildcat Sanctuary, Sandstone, MN

Tiger Creek Wildlife Refuge, Tyler, TX
Terri Werner, Director of Operations

Wildlife World Zoo, Litchfield Park, AZ
Mickey Olsen, Director

Safe Haven Rescue Zoo, Imlay, NV

Wild Wonders, Inc., Bonsall, CA
Jackie Navarro, Executive Director

California Wolf Center
Julian Center for Science, Julian, CA

High Desert Museum, Bend, OR
Tracy Suckow, HR Manager

Woodland Park Zoo, Seattle, WA
Deborah Jensen, President & CEO



RATS AND MICE

Bill & Marcia Brant

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Coming Events

Post Your Coming Events Here
email to: akfeditor@zk.kscocxmail.com

April 15 –18, 2010 - 4th Otter Keeper Workshop

The Cincinnati Zoo in Cincinnati, Ohio will host. This year the focus of the workshop will be expanded to include all of the otters managed under the Otter SSP® North American river otters, Asian small-clawed otters, African clawless, African spot-necked and giant otters. Keepers working with any of the species are welcome to attend. Topics will include: captive management issues, enrichment, training, water quality, health care, nutrition, diet, hand-raising, exhibit design, lots of sharing of information between keepers. A waiting list will be maintained once the workshop is filled. Information can be found on: www.OtterSpotter.com For more information contact: David Hamilton at Seneca Park Zoo, 2222 St. Paul St., Rochester, NY 14617; phone: 585-336-2502; fax: 585-266-5775; email: dhamilton@monroecounty.gov

April 25-30, 2010 - Animal Behavior Management Alliance (ABMA) Annual Conference - In Pittsburgh, PA. The theme of this 10th Anniversary Conference is "Defining a Decade: Animal Management - Past, Present, and Future".

Conference programming includes: Dr. Vint Virga, a Veterinary Behaviorist as keynote speaker, formal presentations, numerous workshops and seminars, a poster session, and site visits to animal facilities. Registration is open and all conference details can be found at www.theabma.org. The conference will be held at the Hilton Pittsburgh located in downtown Pittsburgh. Mention that you are with the ABMA and receive a special room rate of \$119/night. Reservations must be made by March 23, 2010 at 412-391-4600. Contact Nicole Begley at nicole.begley@aviary.org or 412-323-7235 ext 216 with questions.

May 11-15, 2010 - International Gorilla Workshop – 2010

Oklahoma City Zoo is excited to host the 2010 International Gorilla Workshop. We hope you'll join us for these informative sessions. Our keynote speakers who are confirmed are Dave Morgan and Charlene Jendry. We are in final confirmation stage to get Dr. Ilana Kutinsky here as our third keynote. The Gorilla Workshop was created to promote and improve husbandry, management and conservation of gorillas. It is necessary to collaborate with colleagues to better provide for and understand gorillas in our care. The 2010 Gorilla Workshop will include a number of topics with an emphasis on multi-male and bachelor groups, as well as innovative and best practices in gorilla husbandry.

Registration fees of \$195 are due by 10 February 2010. A late fee of \$30 will be assessed after 10 February. Ten dollars from each registration will be combined to benefit one or more in situ conservation project(s). If you have other general question about the workshop, OKC, etc, please contact Brian Aucone, BrianA@okczoo.com, 405-425-0283.

August 30 - September 3, 2010 - 7th International Penguin Conference - in Boston, MA. Hosted by The New England Aquarium. For info email ipcboston@neaq.org

September 7-12, 2010 - National AZAD Conference Hosted by Brookfield Zoo, Brookfield, IL USA. Call for Papers--Share your ideas by presenting a paper addressing ways people can work to conserve our Earth and all the gifts it gives us. For further information email AZAD2010info@gmail.com

September 27-30, 2010 - AZA Orangutan SSP® Workshop - To be held at the Denver Zoo, Denver, CO. Theme: "Conservation & Husbandry Innovations for the New Decade" Climb Up to a Higher Branch at the 4th Annual Orangutan SSP® Husbandry Workshop! - Focused on the care and management of orangutans, the workshop will bring together orangutan caregivers and managers, researchers, and field biologists to share the most current information on husbandry, conservation, and emergent issues pertaining to captive and wild populations of orangutans. Workshop registration fee is \$125. The workshop will be held in conjunction with the Orangutan SSP® Masterplan meetings which will take place on Sunday, September 26, 2010. For additional information contact Ronda Schwetz at rschwetz@denverzoo.org. Online registration will be available soon at www.denverzoo.org. Pre-Conference Trip to Cheyenne Mountain Zoo Sunday, September 26—more details soon!

September 28-October 2, 2010 - 20th International Zoo Educators' (IZE) Biennial Conference - at Disney's Animal Kingdom, Orlando, FL. For more information, please visit <http://www.izea.net>

Upcoming AAZK National Conferences

- 2010 - Philadelphia, PA - August 22-26
www.philadelphiaazk.org
- 2011 - San Diego, CA - August 24-28
- 2012 - Syracuse, NY - September 23-27

For information on upcoming AAZK conferences, watch the AAZK website at www.aazk.org



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Fourth Call For Papers



The Greater Philadelphia Chapter of AAZK invites you to submit abstracts relevant to our theme “A Return to our Roots for the Growth of our Future” for the 2010 National AAZK Conference. Abstracts will be accepted for one of three categories: papers, posters, and workshops.

Papers

Authors will give a 15-minute presentation with a five-minute Q&A session immediately following. Papers should discuss techniques, achievements, or innovative approaches to animal care and husbandry, welfare, conservation, education or research.

Posters

Posters will be on display throughout the conference and presenters must be available for discussion with other conference delegates during the designated poster presentation session.

Workshops

Those interested in running a professional workshop should submit an abstract, a list of group leaders, format of discussion, expected number of participants, and length of workshop.

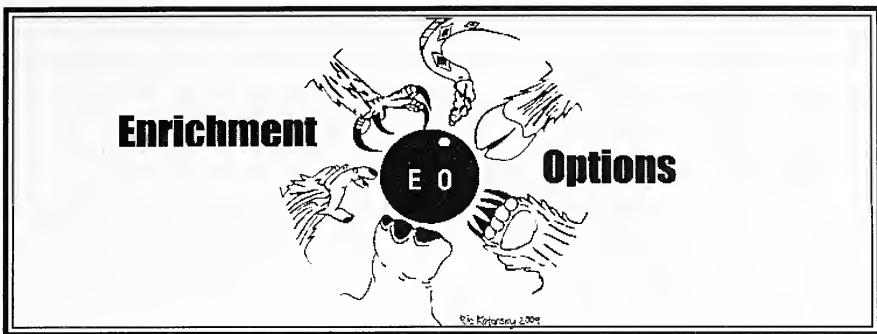
Guidelines for Abstracts:

Abstracts should be no longer than 300 words and should be submitted in Microsoft Word via email to conference@philadelphiaaazk.org. Be sure to include the following information:

- ◆ Title of paper, poster or workshop (specify which type of presentation)
- ◆ Full name of presenter and authors
- ◆ Institution/Affiliation
- ◆ Position/Title
- ◆ Short bio of yourself for introduction
- ◆ A/V needs
- ◆ Contact information, including email address

Deadline for abstracts is 1 May 2010. Presenters will be notified regarding acceptance by 1 June 2010. All final and complete papers must be received by 15 July 2010 in order to be included in the program.

For more information, please visit our website at www.philadelphiaaazk.org or contact us at conference@philadelphiaaazk.org.



EO Editors -

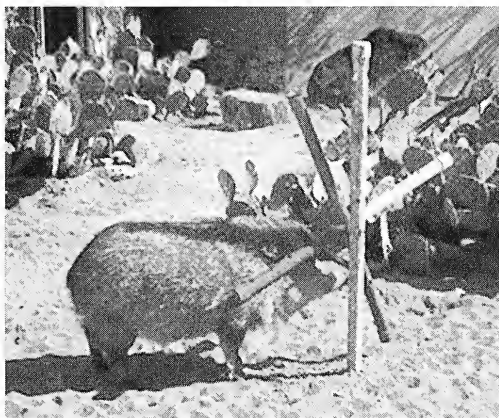
Julie Hartell-DeNardo, Oakland Zoo and Ric Kotarsky, Tulsa Zoo & Living Museum

Pecs, cameras, action!

*By Melissa Looney
Tulsa Zoo and Living Museum, Tulsa, OK*

*Special thanks for all the help from
Dana Wilson and Marcie Tarvid*

What do you do when someone says, “you have two days to make a new and creative enrichment activity for a video shoot.” You make a windmill, of course! It requires thought and manipulation by the animal. Plus, it is colorful, easy to make, and has moving parts!



The windmill we will build in this article was created for our collared peccaries (*Pecari tajacu*), Sunny, Nina, and Gregory Pec. It was inspired by the peccary’s natural tendency to root through substrate and move things with their snouts. We knew the peccaries would naturally be able to move the sails around and make their food fall out. We use the grain mix from their daily diet to fill the windmill, and they enjoy it every time!

The peccaries at the Tulsa Zoo live in a desert-themed exhibit with basic decorations, cacti, and lots of sand. There are minimal areas for hanging any type of enrichment. Therefore, we constructed a post to hold the sail (the main moving part of a windmill) that could remain in the exhibit after the sail was removed. This allowed lots of other new and fun enrichment activities for the peccaries (pecs) later. Basically, this paper is about one way to make a post that should not fall over in the sand (boring) and how to turn it into a super cool windmill! We will start with the boring post first. It requires concrete that can be drying while we learn how to make the sail. The whole project can be completed for under \$35.

Post. Your post does not have to be complicated. If you have a straight, vertical section of perching in your exhibit, bolt the sail right to it. Or, you could mount a piece of 2x4 to a mesh wall and bolt the sail to the 2x4. There are lots of options. The only thing you need to make sure of is that the sail is allowed to spin straight up and down without hitting anything. Our post needs to be more elaborate because we are working in a sand pit. The ground is about two feet of sand over rock and dirt. Driving a post may be difficult and may not be stable. Easy removal is also a must. We work hard enough without creating new problems.



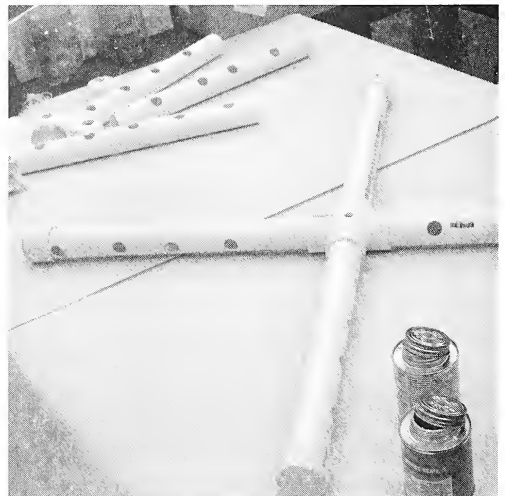
With all this information in mind, here is what I came up with.... Take a 5' piece of 1 1/4" PVC and drill a couple of 1/2" holes around the last 2" of one end. Get a 12-quart plastic storage container, about 16"L x 10"W x 6"D. Mix up enough quikrete concrete to fill it about 3/4 of the way full. Just follow the mixing and safety instructions. Put a couple inches of concrete in the container, push the PVC pipe (the end with the holes drilled in it) down into the center of the container, and finish adding the rest of the concrete. Make sure the concrete goes inside the bottom of the pipe and through the holes. This keeps the PVC firm in the concrete. Let the concrete dry. Our concrete does not need to be pretty because we are going to bury it. However, if your post is going to be exposed, you could decorate it. Just line the bottom and sides of the storage container with pretty river rock, leaves, pine needles, etc. and then add the concrete. For this application, I would try Quikrete® sand/topping mix. Sometimes the gravel in the regular concrete mix gets in the way of sinking the decorations. Once all of

the concrete is added, press more decorations into the top of the concrete. After it dries, remove the concrete base from its container.

Right now we could stop and have a very handy browse and toy holder, but we will need extra stability in case the pecs get frustrated and try to push it over. We could use tons more concrete, but toys should be easy to use and move. Instead we are going to add a platform to the post. The concept of the platform is rather simple. It has a hole in the center and slides over the post and rests directly on the concrete. The pecs will not be able to push over the post because they will have to stand on the buried platform and concrete base to reach the windmill. Next, cut a 3'x3' piece of 15/32" plywood large enough to put the PVC pipe through and then use a jigsaw to cut a 1 1/2" hole in the center of the plywood platform. It is not as hard as it sounds. Just use a drill bit to make a hole for the jigsaw blade to go into. Insert the blade and make a circle cut. It does not have to be pretty because it will be buried. Set all this aside so we can work on the sail.

Sail. The sail is made out of 1 1/4" PVC. Cut four 1 1/2' pieces and drill 3/4" holes every couple inches down opposite sides of the PVC. The size of the holes were decided by the size of the pecs grain mix. You will need to pick a size that works best for your animal. Do not drill the holes straight across from each other. Alternate locations to help better hold the food in the PVC pipes. (We have found that Forstner cable bits are the best at drilling holes in PVC. You can buy an eight-piece set of bits 1/4"-1 3/8" for only \$20. Regular drill bits work as well, but we love the Forstner bits.) Carefully clean up the edges of the new holes by scraping off any jagged edges with a knife or file. Cap one end of each arm of the sail.

Drill a 5/16" hole in the middle of the PVC cross. Drill through both sides and make sure the holes are directly across from each other. If they are at an angle, the sail will be wobbly. Place the uncapped ends of all four arms into the PVC cross. The holes should be facing the arm next to it, so if an arm of the sail is horizontal to the ground, food should be able to fall out of hole onto the ground.



Hold the assembled sail up the PVC post and estimate what height will suite your animal. We want the peccary to be able to use their snout to spin the sail. Peccaries are between 20-24" tall. We do not want the sail to hit the ground. Therefore, drill a 5/16" hole through the post about 21" above the concrete base. Once again, make sure the two holes are level or the bolt will go through at an angle and make the sail wobble or hit the post.

After the hole is drilled, push the 5"x 5/16" bolt through the PVC cross. To allow the sail to spin, we need to put about a 3/4" space between the sail and the post. Therefore, place nine 5/16" washers on the bolt, and put the bolt through the post. Screw on the nut, but do not over tighten. Give the sail a spin, and see if any adjustments need to be made.

Paint. Since the post is going to stay on exhibit, we will burn it with a torch to make it look as natural as PVC pipe sticking out of sand can look. Simply take the torch and lightly run it over the PVC. I hear the fumes are toxic, so wear a respirator. Do not let it get too hot or the pipe will actually bend. I burn one side at a time. This allows one side to stay cool and stable.



As for the sail, we want to be creative. In a desert-themed exhibit, the peccans can use a splash of color. Use Krylon® fusion plastic spray paint to paint the sail. We had to wait till after the video shoot to paint ours because it takes seven days to cure. The paint can still be scratched off but does not flake off in chunks for the animals to eat. We chose to paint each sail a different color (red, blue, green, and yellow). Then we tie-dyed the PVC cross. It turned out awesome if I do say so myself.

Glue. Since the sail is so large, you may want to glue the arms in place. The weight may pull them out of the cross. However, PVC does stay together pretty well, and this sail will be a real pain to clean in a basic sink if it is glued together. You will probably need to use a water hose instead. The peccaries have other PVC toys they play with safely, so we do not feel it would be a safety hazard if they pulled an arm off the sail to play with it. Therefore, we do not technically need to use glue. You should evaluate your own particular animal's behaviors to decide if you want to glue the sail together or not. Nevertheless, we are going to glue! Pull off an arm, prime the outside of the last 1/2" of the uncapped arm and the inside of the PVC cross. Add PVC glue to the same areas. Slide the arm back in place. Make sure the holes are still facing the right direction. It will dry very quickly, so act fast. Repeat this process for the other three arms of the sail.

Installation. Now that the parts are all ready, we need to prep the area. Dig out a 3'x3' wide section of sand about an inch deep. You want it deeper than the plywood is thick because the piece of plywood will be buried under the sand. In the center of that hole, dig another hole deep enough to put the post's concrete base inside. Put the base of the post in the hole. Make sure the post is straight up and down. Slip the plywood over the PVC post, and place it directly on top of the concrete. Bury the base to hide it from the people and the peccans. You may be able to get parts to attach the PVC pipe directly to the plywood and bypass the concrete, but we are limited to what is available in the enrichment shop. Put a 1 1/4" PVC cap on the top of your post to keep the rain and other junk out of the post.

Put your sail back together. Run the 5" bolt through the PVC cross, washers, and post. Put on the nut, and installation is finished! To fill the sail, spin it to where two arms are vertical and two are horizontal. Take off the highest cap and use a funnel to dump the food straight inside. If you fill it



pretty quickly, the food will plug the holes as it rises and fills up the lower arm. As the peccos spin the sail and the food moves around, the holes will unclog. One full arm is enough food to keep the peccos busy for 20 minutes or so. Release the peccos, and let the fun begin!

Where is the wind blowing this project now? We are getting ready to make several smaller version of the windmill. While the peccaries are smart and can manipulate the larger sails, they do not seem to show their typical eagerness to interact with this enrichment. We believe it may be too cumbersome for them. We want to make sure the smaller sails remains challenging, so we will drill less holes of a smaller size. We are also going to make several for our raccoons, swift foxes, and arctic fox. We are even going to try it with our whitetailed deer. We found that our deer will play with anything they think has cracked corn in it!

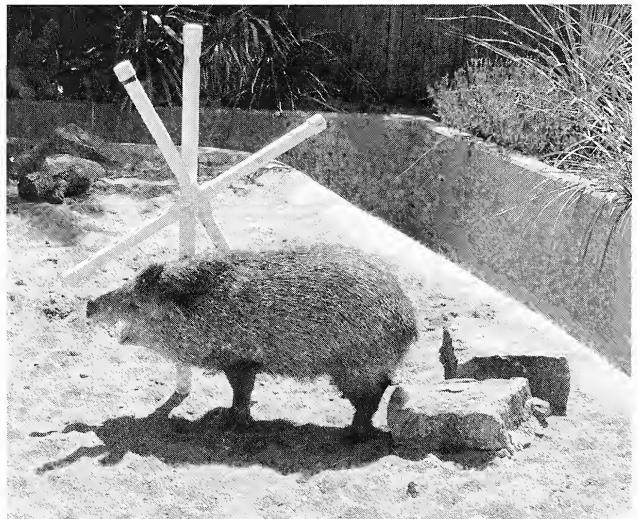
For the most part, this project has turned out to be a big success. The windmills were dreamt up, created, and installed for the video shoot with two seconds to spare. The peccaries got a new enrichment item. And, the public enjoys watching Sunny, Nina, and Gregory spin their new windmills.

Shopping list for one windmill

- (1) 12 quart storage container/box
- (2) 1 1/4" x 9' PVC
- (5) 1 1/4" PVC caps
- (1) 1 1/4" PVC cross
- (1) 5"x 5/16" bolt
- (1) 5/16" nut
- (9) 5/16" flat washers
- (1) 80 lb bag Quikrete® concrete mix
- (1) 8'x4' x 15/32" plywood

Optional

- Variety of Krylon® paint
- PVC primer & glue
- Forstner cable drill bits



Photos provided by the author.

People Skills For Animal People



KEEPERS AND COMMUNICATION, Part III

By Judie Steenberg (12/09)

Retired Zoo Keeper

Maplewood, Minnesota

“Getting the Word Out”

Ideas are valueless if they are not conveyed. The information you have acquired as a Keeper can be of great importance to others; your colleagues, the zoo community, volunteers and zoo visitors. As a Keeper you are at the heart of your zoo’s activity and probably participate in many aspects of your zoo’s operation

Are you communicating your ideas, information, and the knowledge you have acquired, to others? If not, why not? You have something to say....don’t be stopped because you think you can’t give a talk to a group or put your ideas down on paper. If you have any desire at all to communicate in these ways you can learn to and most likely will become very good at it. The key to oral and written communication is YOU. If you want to, you can do it! Others already have, simply because they had something they wanted to communicate.

Probably the most difficult means of communication is public speaking; yet it can be most effective. At a Speaker’s Bureau Workshop I attended, the Director of a local theater talked about “How to speak to an audience”. After a few short hours of listening to him, several members of the group, who were quite inexperienced in public speaking, were able to go out and deal with any situation and audience using the guidelines he had given us. Following are some of those ideas and suggestions on the subject of public speaking.

A survey of more than 20,000 business men taking a speech course indicated three general problems:

1. Stage fright
2. How to organize their thoughts
3. How to speak clearly and convincingly

Stage fright is almost universal with speakers. For some it is minor and others monumental. But, in any case, it is real and cannot, should not, be ignored. It is a reality and can be controlled but probably not completely eliminated. In fact it can be “used” to enhance your presentation. Even experienced speakers can have a sense of stage fright and the key to controlling it is accepting and dealing with the problem. It is analogous to an athlete being “up” for an important game. It is a natural reaction to a situation that you don’t have to deal with on a daily basis. Your metabolic rate increases because you have an added need for alertness and strength. Take advantage of it, use the added energy to get into the game.....the anxiety will begin to leave as you begin to speak. You can learn to control the physical and mental manifestations of stage fright.

Physically, use that energy to take a firm grip on a chair, podium or table; push your feet into the floor, clasp your hands tightly behind your back – don’t be afraid of it...use it! Does your throat get tight?...hum a bit. Do you feel like you can’t breathe?...hold your breath for 30 seconds, it’s guaranteed you’ll have no trouble taking a breath. These aren’t tricks but simple basics and they do

work. To deal with the mental aspect of stage fright...remember, you have something to say and that's what's most significant! If you have been asked to speak and have something to say...that is what is important. You don't have to give that presentation but you have an idea, experience or information, which you want to share so go with it and be enthusiastic about it. Get up there and establish eye contact with your audience before you start to speak....it tells them that you are sincere and that you have something to share. Public speaking is conversation with the questions eliminated until after the presentation.....unless you say otherwise. Some speakers prefer to answer questions as they speak.....it's up to you.

Organizing your thoughts in preparing your presentation is an important first step. Know your material, study it and be sure of yourself! Ask yourself these seven questions and answer them in writing.

1. What is your viewpoint? (Your general purpose for speaking.)
2. What do you want to accomplish, what are your objectives?
3. Who is your audience? (This must be asked every time the presentation is given; no two audiences are alike.)
4. What brings your audience together, what is their common interest?
5. What knowledge do they have of your subject? (What might have they read, heard or experienced?)
6. What is their attitude?
7. What can you expect from the audience? (There will be different expectations with different audiences.)

Analyze each audience by the number, age, education and experience. Use the interest of your audience as the base upon which to build your presentation, to make it interesting to them. Get them on the first few sentences by appealing to their interest, revealing the importance of the subject, or by creating suspense. Avoid telling jokes unless they relate to the subject. The human mind remembers best what it perceives at the beginning and the end of a message rather than what's in the middle. Use the middle to reinforce your message. Your closing lines should tie in to the opening sentence if possible.

Having a clear and convincing delivery will add to the impact of your speech. Good speakers are not those with good voices (golden tones) but those who have an interesting delivery, sound natural and are easy to understand. Remember, public speaking is enlarged conversation. Pause before and after important ideas and change tempo; increase the speed of delivery when excited or covering information easily understood and decrease the tempo when making a definite point. Change your volume to emphasize ideas but also use contrast – a whisper can have a tremendous effect and prevents monotony. Under score important words with a pause, volume or pitch. If they sound funny you may be underscoring the wrong words, probably adjectives adverbs and articles; nouns and verbs are usually the words to underscore.

There are several common problems that speakers come up against but they all have solutions.

- When using a visual aid, such as a Power Point Program, always present from the front of the room. Even without direct eye contact you can relate to the audience better and your voice will carry more effectively. Lead into the slides; explain what they intend to cover before beginning.
- Don't overload Power Point slides and then read all of the information; expand on talking points.
- Lapse of memory? Recognize it, deal with it and go on to the next point.

- Time limit – cover fewer points well
- Paranoia of peer group. This can be a major factor with Keepers (we all worry about what our peers will think). Be prepared, know your material well and get rid of the feeling. You have been asked to speak and you have information to share. Acknowledge that there are others present who also know about your subject but you are there to give your ideas, and information.
- Children’s attention span can be a problem - talk to them as people; don’t be phony and watch your vocabulary, but don’t talk down to them.
- Combination audiences – children and adults. Go with your primary purpose. If necessary acknowledge the children’s presence and/or impatience and go on.
- Written speech – will give you confidence in having prepared it but leave it at home. Don’t know an answer – admit it, and offer to find out. It will give added authority to your other answers.
- A quaver in your voice? – So what! Take a deep breath and get on with it - what you have to say is more important, be enthusiastic.
- Signals you are losing an audience are noise, restlessness, sleeping....wrap it up.
- Inquiry method (asking questions of your audience) – ok to use, in fact for some audiences it is more effective, but it will take longer to cover your material. Be sure to have the answers and be able to redirect questioning.

Be careful to avoid the “don’ts” when giving a presentation, such as:

- Don’t try to give all data to everyone and over communicate.
- Don’t shift contexts, mingle ideas and confuse your audience.
- Don’t mumble or gesture to the distraction of your audience.
- Don’t laugh to conceal your lack of information or wander through your dissertation in a disorganized manner.

Be prepared, determine your purpose, analyze your audience, evaluate the situation, organize your material and then present your program it with a clear, convincing delivery and enthusiasm. You have something important to say.

Note: The next People Skills for Animal People column will address “The Written Word”. This column will appear in the June 2010 issue of *Animal Keepers’ Forum*.

Upcoming AZA National Conferences

September 11-16, 2010 - AZA 2010 Annual Conference - Hosted by Houston Zoo, Houston, TX.

September 12-17, 2011 - AZA 2011 Annual Conference - Hosted by Zoo Atlanta, Atlanta, GA

September 8-13, 2012 - AZA 2012 Annual Conference - Hosted by Phoenix Zoo, Phoenix, AZ

September 7-12, 2013 - AZA 2013 Annual Conference - Hosted by Kansas City Zoo, Kansas City, MO

For info on AZA Conferences, see http://aza.org/ConfWork/AC_Intro/index.html



**Crisis Management Resources for Zoos
and Other Animal Care Facilities**

***New Resource CD
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*This CD includes - in searchable PDF format - all of the papers, resource lists, and species protocols originally published in the 400+ page book, Resources for Crisis Management in Zoos and Other Animal Care Facilities (1999), as well as all the manuscripts published in the November/December 2007 issue of *Animal Keepers' Forum* dedicated to crisis management in zoos. The original 1999 book has been out of print for some time and is no longer available for purchase.*

The CD is searchable by author, title or word. Chapter Titles from the original Crisis Management Book include: Factors That Influence Crisis Management in a Zoological Setting, Developing an Emergency Preparedness Plan, Emergency Response and Crisis Management Teams, Public Relations and the Crisis Situation, Animal Restraint and Animal Identification Techniques, Dealing with a Crisis Situation: Case Studies/Zoological Crisis, Case Studies/Natural Disasters, Case Studies/Manmade Disaster, Case Studies/Injury or Death at the Zoo, and Taxon-Specific Crisis Management Protocols. The Appendices includes Resource Lists, Sample Forms and a list of Vendors with products useful in crisis situations. Included papers from the dedicated issue of *AKF* include: Crisis Management Planning in Zoological Institutions, Disease Risk Communication and Highly Pathogenic Avian Influenza, Developing a Weapons Team for Dangerous Animal Emergencies, Who's Afraid of the Big Bad Wolf?, Chemical Restraint of Exotic Animals in a Emergency Situation, The Veterinary Role of First Responders to a Medical Emergency in a Crisis Management Situation, Critical Incident Stress Management: A Proven Tool for Addressing Staff Needs After a Traumatic Event, Developing a Program for Dangerous Animal Emergencies: Procedures for Animal Escapes, Unauthorized Person in with Dangerous Animals, Dive Safety in Zoos and Aquariums, Wildlife! One Facility's Response and Lessons Learned, Keeping Communications Equipment Powered in an Emergency, The Terrorist Threat to Zoological Institutions, Hurricane Preparedness: Lessons Learned from Hurricane Katrina, Training Dangerous Animals Safely is No Accident, Firearms Use and Training in AZA Institutions, and Aspects of a Safety Program for Zoos and Aquariums.

Cost of this resource CD is \$25.00 for AAZK Members and \$50.00 for nonmembers. First class postage is included. This CD may be ordered online at the AAZK website (www.aazk.org) under "Publications" or you may order by calling the AAZK Office at 785-273-9149 and making your purchase with a Mastercard or Visa.

Why Display Native Animals?

By

Terry "Rock" Moeslein, Assistant Education Director/Interpretive Naturalist
Virginia Living Museum, Newport News, Virginia

Why not have native animals at your zoo? It is easier to find local species from wildlife rehabilitators. They are easier to maintain in a native climate and find local support for their health and well-being. But there are other valid reasons why a typical zoo might consider keeping animals more often found within their state or local area.

Generally the zoos in the past hundred years were places where people could go to see rare or very unusual animals - sometimes for free and sometimes at a cost. Except in the larger cities, people of the 1800's to early 1900's were more aware of the wildlife and wild places in their areas than are many people today. Children explored the local woodlands, swamps, creeks and meadows. People hunted, trapped and ventured into or lived in rural areas. One would commonly see bald eagles and owls, raccoons, fox, muskrats, deer, chipmunks and bear. Then, as today, local animals were not always seen as exciting as new and exotic ones. People went to the zoos to see the variety of new and unusual animals.



Barred Owl

(Photo: Karl Rebenstorff/Virginia Living Museum)

We typically think of animals from other countries as being the most interesting and less likely to be seen or known by our guests. For many people, any animal that is different from what is normally encountered is more engaging. However, due to time constraints

and technology, fewer families know much about their own neighborhood beyond identifying the common birds, mammals, reptiles, amphibians, insects and plants.

Today, children and families can learn about the world and its animals through special television programming or the Internet. There are Distant Learning opportunities where schools' students can talk with scientists, researchers or people of knowledge in various fields. Nature DVDs can take us to and teach us about places most people will never have the opportunity to visit. Information and images are readily available, but life's first-hand wildlife experiences are slipping by. We can see it all, but we're missing important parts of the experience. People and especially children are spending less time exploring their outside world, their neighborhood, their yards or the local parks. And while we have access to worldwide imagery, we need better access to our own area's natural partners and connections. Images and information cannot compete with real experiences. The Internet and High Definition Television cannot match the reaction that a living animal with its subtle movements, smells, sounds or instantaneous antics can elicit in us. There is a valuable link made when we physically and emotionally interact with wildlife and wild places and share it with people we know. If we are to encourage people to care about wild places and animals, it is important to bring animals and people in closer contact, to personalize our experience. This is the place where zoos, knowledgeable staff, inspiring educators and easier viewing can lend a hand.

In 1987, the 21-year-old Peninsula Nature and Science Center became the Virginia Living Museum. Our focus changed. We were to



Bobcat

(Photo: Karl Rebenstorff/Virginia Living Museum)



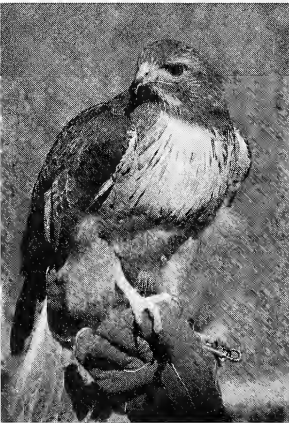
Gray Fox

(Photo: Karl Rebenstorff/Virginia Living Museum)

Aquariums and the American Associations of Museums.

In the past 33 years, I have worked as a wildlife rehabilitation director, an interpretive naturalist, a science educator, a camp counselor, a trip leader to far off places, a field biologist and a teacher of regional, wild flora and fauna. It continues to delight me to teach anyone the importance of relationships and wonderment of life on earth. I do not ask for someone to love snakes or spiders, but I hope that after some time, an appreciation, respect or at least a tolerance of these or other creatures will come from our shared experiences. Such conversions cannot happen unless we are in the presence of the animal. But it is not only the animals that we display that make an impression.

A valuable lesson that I learned 30 years ago is that people are more excited to see what they do not expect to see. While visiting southwest Florida, I was told to visit the Ding Darling National Wildlife Refuge where I would see Roseate Spoonbills. As an enthusiastic birdwatcher I was delighted to go. And there I saw Roseate Spoonbills. It was cool to watch them. I was excited. Overly excited? No. I knew that they would be there. However, when the Black-necked Stilts flew in close by I was beside myself with real excitement. I knew little of the area and never knew that the Stilts frequented



Red Tailed Hawk

*(Photo: Karl Rebenstorff
Virginia Living Museum)*

the Refuge. They were the surprise – the special treat. Yes, it is exciting to see the lion, the giraffe or the turkey. You're supposed to. It's on the map. You expect to see it. It will be there. But what if a Red-tail hawk swoops down to catch a mouse in or just outside the enclosure? Or people watch a wild opossum or some quail as they walk between two enclosures. Real, unexpected wildlife encounters create excitement, special moments for your visitors, families, members and additional interpretive interaction that can be shared between staff and your guests. Your guests might first think, "Oh, look what escaped." Soon they realize that it is a wild animal that is not on their map and that it belongs there. They have been given an unexpected gift, a real surprise. It's like receiving a small gift that you didn't anticipate. Your guests got more than they bargained for, more than they expected to pay for and are thrilled. Our guests come to visit our animals, but they are always happy to focus our pond's viewing scopes to better see the wild pond turtles sunning on logs, double crested cormorants, ducks and the occasional snake, osprey or kingfisher that come and go as they please.

We exhibit common and not so common Virginia plants and animals both inside and outside the museum building. Not only can guests see animals like raccoons, green snakes, horseshoe crabs or brook trout, but less normally seen critters like pine voles, golden mice, paddlefish, canebrake rattlesnakes and an incredible variety of native plants. Such resources often bring the inquiring young mind to our museum in search of information about creatures of their own back yard and area.

Offering a home for local species might allow your zoo to be able to assist in the reintroduction of regional threatened or endangered species. Importantly, the Virginia Living Museum is part of the Fish and Wildlife Service's breeding program for the endangered Red Wolves that once roamed Virginia's coastal areas. This partnership allows us a chance to help the wolves and offer interpretation about and the rare view of incredible animals for all to experience. In addition, many native species can be used in special programs to bring students, teachers and guests even closer to wildlife. We often use skunks, opossums and birds of prey like owls, kestrels and red-tailed hawks for teaching.



Red Wolves

(Photo: Karl Rebenstorff/Virginia Living Museum)

Look at the large, dark brown and round animals in the water. Are those animals' beaver or muskrats? Beavers were almost trapped out in the eastern United States to fill the demand in Europe. Europeans did not only want the pelts for coats and blankets, but because of a belief or at least a clever marketing ploy men wanted the beaver pelt for hats. In the 1600's it was believed that if a man was losing his hearing, wearing a beaver felt hat would stop further hearing loss. Local lore, history and conservation messages can add new lessons, reach new audiences and draw more guests to your zoo. Part of what we want to do is to share the benefit of all wildlife, wild places and their value in the world.

There are ways that an organization can add native species to their more exotic animal collection. The active and costly method would be to create new or renovate enclosures for the new animals. Obviously the cost would also increase due to the need for additional staff, food, medicine and time involved. A more passive method would be to utilize available space and create or enhance it to attract native animals. Create a meadow, a small pond, a moving stream or a small woodlot. Varied habitats encourage more varied wildlife.

By creating ecological edges one is more likely to attract animals from each habitat. Native fruit bearing trees, shrubs and perennial flowers provide wild food to migrant and resident birds. Holly, wax myrtle or other plants common to your area can attract additional birds and small mammals as cover for hiding or nesting areas such as a Brown Thrasher. These birds and mammals may well attract additional animals and predators. The more that you can offer to visitors, the more they will want to become members or return with friends. Provide local constituents and distant guests with more reasons to visit your zoo. Create a local place for them to experience the sights, sounds and smells of as many creatures, plants and habitats as possible. The more opportunities we have to offer our guests, the more opportunities we have of educating them as to the importance of wild animals and wild places. They in turn are more likely to want to care for our world and all of its inhabitants. And isn't that what we're all about?



Raccoon

(Photo: Karl Rebenstorff/Virginia Living Museum)

Scientific Names of Species Mentioned in the Text

Bald Eagles (*Haliaeetus leucocephalus*)
Raccoons (*Procyon Lotor*)
Muskrats (*Ondatra Zibethicus*)
Chipmunk (*Tamias striatus*)
White-tailed Deer (*Odocoileus virginianus*)
Black Bear (*Ursus americanus*)
Roseate Spoonbills (*Ajaia ajaia*)
Black-necked Stilts (*Himantopus mexicanus*)
Red-tail Hawk (*Buteo jamaicensis*)
Double-crested Cormorant (*Phalacrocorax auritus*)
Osprey (*Pandion haliaetus*)
Kingfisher (*Alcedo atthis*)
Green Snake (*Liochlorophis vernalis*)
Horseshoe Crab (*Limulus polyphemus*)
Brook Trout (*Salvelinus fontinalis*)
Kestrels (*Falco sparverius*)
Pine Voles (*Microtus pinetorum carbonarius*)
Golden Mouse (*Ochrotomys nuttalli aureolus*)
Paddlefish (*Polyodon spathula*)
Canebrake Rattlesnakes (*Crotalus horridus*) [also known as Timber rattlesnake]
Opossum (*Eutamias cinereicollis*)
Red Wolf (*Canus rufus*)
Beaver (*Castor canadensis*)
Gray Fox (*Urocyon cinereoargenteus*)
Brown Thrasher (*Toxostoma rufum*)



Screech Owl

(Photo: Karl Rebenstorff/Virginia Living Museum)

Malignant Malaria Found in Apes

By Doreen Walton
Science reporter, BBC News

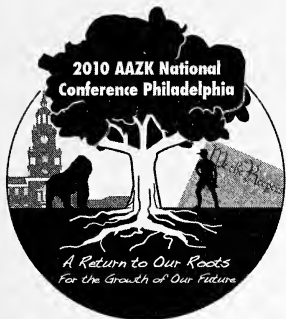
The parasite which causes malignant malaria in humans has been identified in gorillas for the first time. Researchers analyzed feces from wild gorillas in Cameroon and blood samples from a captive animal from Gabon. The study says increasing contact between humans and primates due to logging and deforestation raises the risk of transmission of new pathogens.

The research findings are published in Proceedings of the National Academy of Sciences journal. New genetic sampling techniques allowed scientists from France, Cameroon, Gabon and the U.S. to examine evidence of malaria parasites in the fecal matter of wild gorillas and chimpanzees in Cameroon.

“Sampling malaria parasites from apes in the wild has until now been very difficult”, said Dr. Francisco Ayala from the University of California, Irvine.

The team also took blood samples from wild-born, pet animals in Gabon. DNA evidence of *Plasmodium falciparum*, the parasite that causes malignant malaria in humans, was found in fecal samples from two gorilla subspecies, the highly endangered Cross-river gorilla [*Gorilla gorilla diehli*] and the Western lowland gorilla [*Gorilla gorilla gorilla*].

“ Even if it were eradicated in humans we would still have the problem that it’s present in apes ” Dr. Ayala stated. The parasite was identified in a blood sample from a captive gorilla. Malaria parasites were first identified in chimpanzees [*Pan troglodytes*] and gorillas in Africa by scientists working in the 1920s. But this new technology has allowed scientists to confirm the presence of *P. falciparum*.



Don't miss the 37th Annual AAZK National Conference! The 2010 National AAZK Conference will be held in Philadelphia from August 22-26, 2010

REGISTRATION

This year's conference registration will be offered online only. To register, please visit our website www.philadelphiaazk.org and click on "2010 National Conference." Delegates may purchase a full-week or a single-day registration. Also on sale are tickets for the pre and post-conference trips, banquet, icebreaker and extra t-shirts. Full-week registration for AAZK, ABMA and ICZ members is \$195; for non-members it is \$250. After June 22, 2010, there will be an additional \$50 late registration fee.

ACCOMMODATIONS

Conference delegates will be staying at the Westin in Philadelphia (99 South 17th Street at Liberty Place). The Westin is located in the heart of Philadelphia, within walking distance of shops, restaurants, and many of the city's main attractions. It's also an easy walk from public transportation.

The conference room rate is \$189 per night. The hotel has a limited number of double rooms available; if you need two double beds in your room, please book early and let the hotel know you'd like a double room. All other rooms have a single king-sized bed. More information about the hotel is available on our website.

TRANSPORTATION

By air: Conference delegates should fly into the Philadelphia International Airport (PHL).

By car: Philadelphia is an easy drive from New York, Baltimore, Washington, and many other East-coast locations. Please note: hotel parking will cost \$30 per day, with in/out privileges.

By train: Amtrak will bring you into 30th Street Station. From there, it's a short cab ride to the hotel.

PROGRAM

We are proud to announce that our keynote speaker will be Dr. Jonathan Reyman from the Feather Distribution Project. Since its creation in 1982, the project has distributed more than 8,500,000 parrot and turkey feathers free of charge to all of the Pueblos in the southwest. The Philadelphia Zoo has been a project participant for several years. This project is an easy, free way for zoos and visitors to get involved in parrot conservation. For more information on the project, please visit www.wingwise.com.

Have you had success training a challenging behavior or managed to facilitate breeding of a critically endangered species? Your fellow keepers want to hear about it! We are currently accepting abstracts for papers for the 2010 Conference. Our theme is "A Return to Our Roots for the Growth of Our Future." Abstracts may be submitted for papers, posters, or workshops.

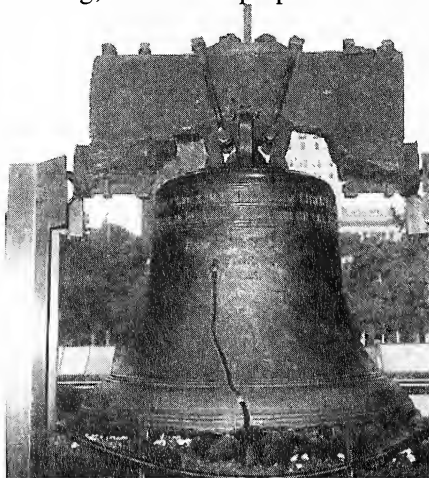
Deadline for abstracts is 1 May 2010. Presenters will be notified regarding acceptance by 1 June 2010. All final and complete papers must be received by 15 July 2010 in order to be included in the program.

ICEBREAKER

We are excited to announce that this years icebreaker will be held at The College of Physicians, and will include the Mutter Museum (19 South 22nd Street). This location is a short walk from the hotel. Please let us know if you will need special transportation to the Ice Breaker by e-mailing us at conference@philadelphiaaazk.org. Attendees will have the chance to explore the museum of medical oddities, observe the many skulls, preserved specimens, and wax models while enjoying food and drinks. Check out the venue at www.collphyphil.org.

WELCOME TO THE CITY OF BROTHERLY LOVE!

There is a lot to do in Philadelphia! The Westin is located in the heart of Center City, with plenty of shops and restaurants within walking distance from the hotel. If you're not up to walking, look for the purple Phlash bus (just \$2 per ride or \$5 for a day pass), or use one of



SEPTA's buses, trains or trolleys. Philadelphia is rich in culture and history- go to Society Hill to see the Liberty Bell and see where the Declaration of Independence, the U.S. Constitution and the Bill of Rights were written and signed. Head to Penn's Landing to catch a summer evening concert or take the ferry across the river to Camden's Adventure Aquarium. Located just off the Ben Franklin Parkway are a variety of famous museums including the Academy of Natural Sciences, the Franklin Institute ScienceMuseum and the Museum of Art, made famous by the "Rocky" movies. Head to South Philly for the best cheesesteaks around!!!

PHILADELPHIA AND BEYOND...

In addition to the many things to do within the city, Philadelphia is also conveniently located just hours from several other major East Coast cities. There are plenty of things to do within just an hour or two from the city - perfect for a day trip if you have an extra day or two!

Atlantic City, New Jersey - head to the Jersey shore, just an hour from Philadelphia, for a day at the boardwalk and the beach! Spend the day at the ocean and then check out the many casinos and restaurants at night!

Hawk Mountain Sanctuary - located less than two hours from Philadelphia in Hamburg, PA, Hawk Mountain is a refuge for birds of prey. Hike the eight miles of natural trails throughout the park, and observe hawks, eagles and falcons as they migrate past outlooks located along the trails.

Elmwood Park Zoo and Brandywine Zoo- If you can't get enough from the Philadelphia Zoo, and can't make our pre- or post-conference trips, be sure to check out these other local zoos. Elmwood Park is just 30 minutes by car from Philadelphia in Norristown, PA, and has over 100 species of animals. The Brandywine Zoo, located in Wilmington, DE and about 40 minutes from Philadelphia, exhibits 150 animals.

If you're still looking for things to do, New York City (two hours from Philadelphia), Baltimore, MD (two hours from Philadelphia) and Washington, DC (two and a half to three hours from Philadelphia) are easy day trips!

TRIPS

We are excited to have the opportunity to take advantage of our close proximity to New York City and the New Jersey shore by offering conference delegates the chance to explore other zoos in the area.

This year's pre-conference trip is to New York City to visit the Bronx Zoo. The Bronx Zoo is the largest metropolitan zoo in the United States. Come see their Madagascar Exhibit, which opened in 2008 and displays animals native to the island of Madagascar, including many species of lemurs. We will leave from the hotel at 7:00 a.m. on August 22nd and will return in time for the Icebreaker. Price is \$40 and includes transportation and admission to the zoo.

After the conference, join us for our trip to the Cape May County Zoo, followed by a whale and dolphin watching tour. We will leave from the hotel at 7:00 a.m. on August 27th, spend a few hours at the zoo, eat lunch in the park, then go on a three-hour whale and dolphin boat tour. The bus will arrive back to the hotel at approximately 7:00 p.m. Price is \$40 and includes transportation, admission to the zoo, lunch, and a ticket for the whale and dolphin watching trip.

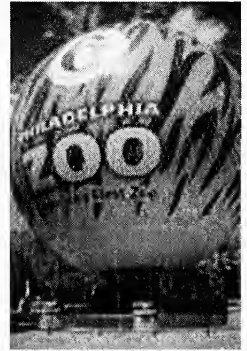


ZOO DAY

On Wednesday, August 25th, delegates will have the opportunity to visit America's first zoo. Come see our brand new McNeil Avian Center, where visitors have the opportunity to become immersed in several walk-through exhibits and discover over 100 birds from around the world. Check out our new Aye Aye exhibit - we are only one of three institutions in the country to exhibit these unusual primates. At the time

of your visit, the Philadelphia Zoo will have on display an unusual LEGO® exhibit called Creatures of Habitat. Visitors will see several LEGO® animals throughout the zoo, each with its own conservation message.

Delegates will be able to walk around the zoo at their own pace. We will have lots of behind-the-scene opportunities around the zoo throughout the afternoon that delegates will be able to enjoy in an open house format. In addition, conference attendees will receive complimentary tickets for rides throughout the zoo, including our Channel 6 Zooballoon, which gives an exciting and unusual view of the city from 400 feet above the ground (weather permitting)!



CHAPTER CHALLENGE

Chapter Challenge is back! Help support this year's conference and AAZK, Inc.! Every chapter that donates at least \$500 to support this year's conference will be entered into a drawing for a chance to win ONE of the following prizes:

- A full-week conference registration (3 winners)
- Up to \$500 towards airfare to the conference (1 winner)
- A free hotel room (1 king-sized bed) for 5 nights (2 winners)
- A complimentary spot on the pre-conference trip (2 winners)
- A complimentary spot on the post-conference trip (2 winners)

With so many prizes to give away, 10 Chapters are guaranteed to win something!

Every year, the cost of hosting an annual conference increases. We appreciate donations in any amount, even if your Chapter is unable to give \$500 or more.

Any Questions?

Visit our website at www.philadelphiaazk.org or email us at conference@philadelphiaazk.org.

Disease Reservoir

P. falciparum is the most deadly type of malaria infection. It is most common in Africa, south of the Sahara, where the World Health Organization says it accounts for a large part of the extremely high mortality in the region.

The study says that human destruction of the natural forest habitat means more contact with primates and greater chances of pathogen transmission between the two, including from humans to the endangered great apes.

Dr. Ayala said the findings underline the danger of contact between the two. “Even if it were eradicated in humans we would still have the problem that it’s present in apes and therefore they would be a reservoir for the disease. “It’s not clear what we can do with respect to this problem other than trying to decrease contact.”

Endemic?

Dr. Ian Hastings, senior lecturer at the Liverpool School of Medicine said it would help to know more about the spread of the parasite in gorillas. “Mosquitoes often bite different species. Often they have a preference but if they can’t find what they want to bite they’ll just go and bite something else,” he said. “The question is whether this is just sporadic infection that’s come from humans after the mosquito bit an infected person and passed it on to gorillas or whether it’s endemic and is passed from gorilla to gorilla.”

Dr. Ayala acknowledges that *Plasmodium* parasites are much less malignant for apes than humans because primates have been exposed to them for so long. “They have had *P. reichenowi* and perhaps other species for thousands or millions of generations, so one expects less malignancy to have taken place over time.”

Source: Story from BBC NEWS: Published: 2010/01/18
<http://news.bbc.co.uk/1/hi/science/nature/8465554.stm>

New Material Continues to be Added to Member’s Only Section of Website

If you haven’t checked out the Member’s Only section of the AAZK website recently, you’re in for a treat. Downloadable pdfs of all of the papers, posters and workshops from the 2006 (Chicago), 2007 (Galveston) and 2008 (Salt Lake City) AAZK Conference and 2009 (Seattle) are now available.

The section now contains a listing of all AAZK Chapters (searchable by State), a listing and links to all AAZK Institutional and Commercial Members as well as Conservation Partners; downloadable pdfs of past columns including People Skills for Animal People and The Water Column; the Australasian Society of Zoo Keeping Husbandry Guidelines; The Keeper’s Role in Zoo Animal Health by veteran zookeeper Judie Steenberg; Zoonotic Diseases Handbook; Zoonotic Disease Transmission and Bloodborne Pathogens; past and current editions of AAZK INSIGHT e-newsletter; the International Congress on Zookeeping Newsletter; information on how to form an AAZK Chapter; and information on all AAZK Committees. Recently added is a link to the Keeper Accommodation List (under Chapters).

Remember, in order to access this portion of the website, you must register as a user. This is a simple process, just follow the prompts. Please remember that changing an address on the Member’s Only section does not change your address for receipt of your monthly issue of Animal Keepers’ Forum. To change your address on the AAZK database for mailings, either go to the link on the Reminder Bar of the homepage, send an email to AO at aazkoffice@zk.kscoxmail.com, or call to leave new contact information at 785-273-9149.

All “user applicants” for the Member’s Only section must be approved as valid AAZK members and this is done each weekday from AO. There is lots of good information and resources, so if you haven’t registered yet, do so soon and don’t miss out on these special features available only to active AAZK members.

Bowling For Rhinos Recipe for Success

BFR EVENT FACILITY PLANNING

- **Set a Date** - Early so that it can be advertised in as many newsletters, fliers as possible. Info should be placed in zoo newsletters (at least 4 times), facility volunteer newsletters, Society communications, facility maps or advertisement fliers.
- **Chamber of Commerce** – Check with Chamber (or other Community Association) prior to setting date to find out events that could conflict. Once you choose the date, inform your Chamber of Commerce and ask to be placed on their Calendar of Events.
- **Facility Management** – Set up a meeting with your facility director and/or management. If a facility needs some coaxing, reference a “Memorandum of Agreement” between AAZK/BFR & AZA signed at the 1996 Honolulu conference: AZA will assist AAZK’s BFR event through their resources such as Public Relations (PR) Graphics Departments. You may remind them, the better your event does, the better it looks for the zoo in the eyes of the public. A successful BFR event gives your facility “bragging rights”.
- **Volunteer Coordinator** – Set up a meeting with the Coordinator. Talk to your zoo volunteers at an organized luncheon to let them know they can join the event or sponsor someone (have your forms ready) or work at the event.
- **Society Director** – Set up a meeting with the Director or Coordinator of the entity that supports your facility. Promoting the BFR event, promotes the facilities involved.

BFR EVENT PRE-PLANNING

- Collect door prizes. Seek the big airline prizes 4-6 months in advance (write thank you notes – helps build a base for next year!) Hint: Restaurants are easy to get prizes from. Visit a potential donor in person, with formal letter of donation request. The letter should detail the successful history of the event on the local and national levels.
- **Fliers** - Put registration fliers in an area where volunteers may see them-in their “check -in” area. Have fliers that you can hand out so they can be completed later.
- **Invite Bowlers from Previous Events** (addresses listed on sponsor forms from prior year)
- **Blue Rhino Gas** - These folks are a primary event sponsor and should be included in all local events. (They may even underwrite your event!)
- **Rhino Linings** – After asking Blue Rhino, try to get a commitment from these folks in your area to join your event. If Blue Rhino cannot commit Rhino Linings may be an event sponsor.
- **BFR is Open to the public** – Make sure this fact is well advertised.
- **Create a T-shirt** – Look for sponsors for the event shirt
- **A Day off Work?** - See if your zoo will offer a day off work for the team who raises the most \$ (ex. Graphics team, Maint. Team, etc)
- **Special Events** – Your facility may have a department that can lend a hand – hey, these people do this for a living! Seek help to get the word out.
- **Prizes** - It pays to advertise. Once you have a list of Door Prizes or other giveaways, raffle prizes, etc. Publicize the list to attract bowlers and sell raffle tickets.

- **Invite Celebrities to bowl at your event** (especially TV/radio- free advertising!).
- **Advertising** - post info next to rhino/elephant exhibits about your upcoming event and how to join!
- **Trip Winner** – The person who raises the most money, wins a trip. Don't be shy, let your potential donors know this fact.
- **Friends and Family** – The most important donors of all, and usually, the softest touches!

See <http://aazkbfr.org>

If your Chapter would like a “Lewa Promo” DVD free of charge or other Lewa info, please contact Linda Millard: linda.millard@gmail.com or 650-851-7738.

If your Chapter would like Rhino info, flyers,etc. for events, contact Susie Ellis/IRF: s.ellis@rhinos-irf.org or 540-465-9595.

For additional BFR Event information or assistance - Contact Patty Pearthree, AAZK BFR Coordinator at: ppear3@pear3.org or 919-678-0449.

Bowling for Rhinos Honorary Trip Winner Announced

Bowling for Rhinos is AAZK's biggest conservation effort. There are a number of people who are the true heroes in making AAZK's “Bowling For Rhinos” successful. Year after year, they tirelessly organize their event with little recognition. Their reward is in knowing that they are helping to conserve wildlife worldwide.

In 2007, AAZK, Lewa and Anna Merz began recognizing these dedicated members by rewarding them with a chance to see firsthand the results of their dedication. Anna Merz has offered to host an individual and a companion, if they wish, for one week at Lewa Wildlife Conservancy in Kenya. The winner's expenses would be paid and the companion would need to be able to stay in the same room as the winner. The companion would need to pay travel expenses. Travel would occur in October.

Winners must be AAZK members in good standing. These trips will be awarded on an as warranted basis by the Board of Directors.

Rules for Honorary Bowling For Rhinos Trip Winner:

- Travel will occur the following year in October. This coincides with Anna Merz's trip to Lewa for the fall Lewa Board meeting.
- Anna will “host” the trip winners which entails paying all their expenses at Lewa (except souvenirs & tips) for one week.
- The cost for the trip winner's plane fare, transport cost & hotel in Nairobi (roughly \$2,250) will be covered by Lewa.
- Recommendations for trip winners will be made by Patty Pearthree to the AAZK Board of Directors. Patty may solicit recommendations from AAZK members in case there are deserving members of which she is unaware.
- Winner will sign a “holds harmless” waiver for AAZK, Inc. prior to travel.

Susan Grohne of the Philadelphia Zoo is the 2010 recipient of this trip. Susan has helped organize the Philadelphia AAZK BFR event for many years and has greatly increased the success of the event. She spends much of each year organizing the event. She organizes all aspects of the event from gathering door prizes to working at the event to brainstorming ways to “grow” the event year after year. Susan has narrowly missed winning trips for several years. Susan's tireless efforts have not gone unnoticed in the conservation field so it is with great pride that AAZK announces that she has been awarded a free trip to visit Lewa Wildlife Conservancy in Kenya in October, 2011. She and a companion will be hosted by Anna Merz on their adventure to be first-hand observers of the wildlife that benefits from Susan's hard work and dedication. Congratulations, Susan, for a job well done!



Bowling for Rhinos 2010

(Feel free to photocopy this form to submit to Patty Pearthree.)



It's time to start planning for "Bowling for Rhinos 2010". Please send in your information ASAP. There is a \$25 administrative fee for each event. Send check made out to AAZK, Inc. to Patty Pearthree, c/o BFR, 318 Montibello Dr., Cary, NC 27513. Remember, if you want to be eligible to win any of the trips being offered, all money must be sent to Patty Pearthree by 1 September 2010, and you **must** be a national AAZK member in good standing to qualify. If bowling isn't your thing, try "Rock'n for Rhinos", "Run for Rhinos" or send a Chapter or individual donation. Every penny counts toward saving rhinos worldwide! Question? Call (919) 678-0449 or email ppear3@pear3.org. Check out the Bowling for Rhinos website at <http://aazkbfr.org>.

Please Print Clearly

Contact person: _____

Zoo/Organization: _____

Address: _____

City: _____ State/Province: _____ Zip/Postal Code: _____

Phone: Day - _____ Night - _____

Email: _____

Will you be hosting a Bowling for Rhinos Event this year? YES NO

When? _____

Where? _____

How many Sponsor Forms do you anticipate needing? _____

If you would like sample BFR letters/flyers/posters, they are available at the BFR website -

<http://aazkbfr.org>

Mail to: *Patty Pearthree
c/o Bowling for Rhinos
318 Montibello Dr.
Cary, NC 27513*

***Don't Forget To Include Your
Administrative Fee of \$25.00***

Questions? (919) 678-0449 ppear3@pear3.org <http://aazkbfr.org>

CONSERVATION STATION

The logo for 'CONSERVATION STATION' is presented in a bold, black, sans-serif font. The word 'CONSERVATION' is on the top line, and 'STATION' is on the bottom line. A horizontal line separates the two words. The letter 'A' in 'STATION' is replaced by a stylized leaf icon, and the letter 'O' is replaced by a circular icon containing a silhouette of a frog.

Go Green this Spring!

*Julie Good – AAZK Conservation Committee Member
Amanda Kamradt – AAZK Conservation Committee Chair
Penny Jolly – AAZK National Board Member*

As zookeepers, we spend a large portion of our workday cleaning. Maybe that is why spring cleaning and outdoor activities popped into our heads when considering topics for our March column. Here you will find an assortment of practical tips for green spring cleaning, growing a green garden, and being green when enjoying the outdoors...

Do Some Green Spring Cleaning!

Clean freaks and the freakishly unclean can benefit from practicing green cleaning. It is good for the global environment, and the one inside of your home. Many of the popular household cleaners contain chemicals like alcohol, ammonia, and bleach. These chemicals negatively impact the indoor air quality of your home.

Most stores are offering green alternative cleaning products on their shelves, such as Method® or Seventh Generation®. Steam cleaning is becoming popular, however it requires electricity. We've researched some "old school" methods of cleaning that were once widely used, and are safe for the environment. Using "old school" products such as lemon juice, borax, and baking soda reduce packaging and save you money.

Following are some green cleaning instructions to help both the obsessively clean, and the hopelessly filthy AAZK members tackle their homes...

- To clean glass: Mix 2Tb vinegar to 1 gallon water and wipe with newspaper (prevents streaking!). You can substitute lemon juice or club soda for the vinegar.
- To scrub kitchen counters: kosher salt and water make a great abrasive
- To clean porcelain and tile, or your oven: Use baking soda and water, add kosher salt to tackle the tough spots.
- To eliminate mildew/mold, grease, and stains: Apply undiluted lemon juice or vinegar
- To clean removable rugs: Use a rug beater (preferably outside). Use baking soda or cornstarch to deodorize them.
- To wipe down wood surfaces and floors: Combine ¼ c. white vinegar and 30oz warm water.
- To unclog drains: Use either of the following solutions and chase with 1 gallon of boiling water – ½ c baking soda and 2 c boiling water or ½ c baking soda and ½ c vinegar

- To disinfect: Mix together 2c water, 3Tb liquid soap, and 20 to 30 drops tea tree oil
- To remove clothing stains: Use boiling water, dishwasher detergent and borax, or sunlight
- To treat fabric stains: Apply peroxide
- To take away spots or stains on the carpet: For big spills use cornmeal. Club soda is an effective treatment. To create your own homemade spot cleaner fill a spray bottle with a blended solution of ¼ c liquid soap and 1/3 c water. Spray any spots on your carpet and rinse with vinegar.
- To clean copper: Rub with ketchup.
- To clean silver: Rub with toothpaste, or - line a sink or bucket with aluminum foil. Add silver, boiling water, a cup of baking soda, and a dash of salt. The tarnish will move from the silver to the foil.
- Consider donating unwanted items to a thrift store or charity. Not only will they be kept out of a landfill, but they will also conserve resources when they are purchased in place of a newly manufactured item.
- Traditional mothballs contain toxic chemicals such as naphthalene and paradichlorobenzene. Cinnamon sticks, bay leaves, and cloves are all environmentally-friendly alternatives.
- Use a broom instead of a vacuum when possible to reduce your electricity consumption.

Plant a Green Garden!

Take your green practices outdoors by planting a green garden! Whether it's a browse garden for your charges or your own garden at home, keep these tips in mind when putting your green thumb to work...

- Selecting native and drought-tolerant plants can help minimize the amount of watering your garden will need, particularly in drier climates. Read more at www.xeriscape.org.
- Keeping a compost pile not only minimizes the amount of waste in landfills, it also provides a great source of fertilizer for your garden. For further information, visit vegweb.com/composting.
- You can make your yard friendly to local wildlife by planting native plant species, allowing a portion to grow naturally, and adding a water source such as a bird bath. Just be sure to fence off your vegetable and flower gardens if you don't want to share them too!
- Catch rainwater and use it to water your garden, wash your car, or any other task that does not require potable water.
- Celebrate Arbor Day on April 30th by planting a tree. Trees planted along the edge of your house can provide a shield from harsh weather, and minimize the energy needed for air conditioning and heat.
- Consider a non-toxic alternative to traditional pesticides. Water sprays can be used to knock insects off plants, sticky traps can be used to catch flies, and the release of native predator insects are all efficient means of controlling garden pests. Find more ideas at gardensalive.com.
- Instead of using commercial herbicides, control weeds using lemon juice, vinegar, or boiling water. Two applications may be needed for particularly tough weeds.
- A home vegetable garden not only provides you with a delicious supply of fresh produce, it also eliminates the fuel consumption involved in transporting produce long distances. A study by Colorado State University found that home gardening can be as much as 20 times more economical than purchasing produce from a supermarket!
- Use a soaker hose or in-ground sprinkler system instead of an aboveground sprinkler, and reduce water waste by as much as 70%! They deliver water directly to the roots, while much of the water delivered by aboveground sprinklers is lost to evaporation.

- Minimize the amount of water lost to evaporation by watering your lawn or garden either before 8am or after 6pm.
- Mow your lawn using a manual reel mower, and reduce your carbon foot print by 80 pounds each year!

Be Green in the Great Outdoors!

- Don't forget to enjoy the great outdoors while the weather is at its best! Here are a few tips on being green while participating in your favorite outdoor activities...
- Make environmentally-friendly insect repellent by mixing rubbing alcohol with clove, citronella, or peppermint oil in a spray bottle.
- Consider enjoying the outdoors without the use of motorized vehicles. Use a rowboat instead of a motorboat, and hike instead of using a trail motorbike.
- When picnicking, eliminate the use of disposables. Pack a cloth groundcover and napkins, use non-disposable utensils and dishes, and pack the food in reusable containers.
- When visiting a national or state park, stay on the paths intended for visitors. Straying from them may cause damage to plants and animal habitats. Take as many photographs as you'd like, but avoid the temptation to gather plants as souvenirs.
- A solar oven is a great way to enjoy a cookout without burning any fuel or firewood. Learn more at solarovens.org.
- Choose either solar-powered or hand-cranked flashlights as an alternative to using disposable chemical-based batteries. Visit bogolight.com or freeplayenergy.com for more information.

So whether you are a homebody or an outdoor enthusiast, please choose your products and activities with care for a healthier you and a healthier planet!

Resources

www.thedailygreen.com

Living Green Page-a-Day 2008 Calendar: 365 Ways to Make a Difference.
Workman Publishing, New York.

The AAZK Conservation Committee welcomes and encourages submissions for Conservation Station from its readers. Submissions may be sent to Chair Amanda Kamradt at amanda.kamradt@aazk.org.



Bowling For Rhinos Conservation Resource Fund Grant Announced

The American Association of Zoo Keepers, Inc. (AAZK) is pleased to announce the first annual call for proposals for the Bowling for Rhinos Conservation Resource Fund. This competitive grant is designed to fund projects focused on rhino conservation and research. Successful proposals will reflect AAZK values and meet award criteria in one of four categories:

- **Category 1** - *In-situ* Rhino Conservation and Research - Short-term (less than one year), specific, field research projects on African or Asian rhino species conducted by an individual or organized group of individuals working under the auspices of a zoological facility, educational entity or AAZK Conservation Partner.
- **Category 2** - *In-situ* Community, Educational or Medical Programs (Africa or Asia) - Community education, school support or medical programs developed or administrated by an individual working under the auspices of a zoological facility, educational entity or AAZK Conservation Partner restricted to the continents of Africa or Asia. Preference may be given to local programs established and/or administrated by LWC (Lewa Wildlife Conservancy), IRF (International Rhino Foundation) or ACK (Action for Cheetahs in Kenya) endorsed partners.
- **Category 3** - *In-situ* Species Conservation - Short-term (less than one year), specific, field research projects on any species that shares the exact same ecosystem as: Asian, Java, Sumatran, and African Black or White rhino.
- **Category 4** - *Ex-situ* Rhino Conservation and Research – Short-term (less than one year), specific, zoological research projects on African or Asian rhino species conducted by an individual or organized group of individuals working under the auspices of a zoological facility, educational entity or AAZK Conservation Partner. Researcher(s) must be able to demonstrate evidence of partnership with a rhino conservation entity operating in Asia or Africa combined with a tangible benefit to an in-situ conservation project.

Eligibility

Affiliation or partnership with AAZK or rhino conservation is not required, but preference may be given to AAZK Members or Conservation Partners, or projects focused on rhino conservation.

Applications are due **no later than June 1** of each calendar year. Grant recipient announcements will be made on July 1. Look for application info on the AAZK website at www.aazk.org. Completed applications may be emailed to amanda.kamradt@aazk.org or mailed to: Amanda Kamradt, Hooves and Horns, Franklin Park Zoo, 1 Franklin Park Road, Boston, MA 02121.



REACTIONS

A Question and Answer Forum for the Zoo Professional on Crisis Management

By William K. Baker, Jr., Director
Abilene Zoo, Abilene, TX



Question

Does the ratios of weapons to responders play a significant role in ERT practice?

Comments

It is difficult at best to discuss ratios of weapons without considering the overall criteria that can influence the selection and usage parameters of firearms. When possible, I refer to these facets.

Selection Factors:

1. Available Budget - Exactly how much money is the institution willing to spend or what level of funding has the budget designated as available? The axiom of "you get what you pay for" holds true when purchasing a firearm. Typically, expect to pay between \$200.00 to \$400.00 for a shotgun and \$400.00 to \$700.00 for a rifle of standard quality.
2. Number of Designated Shooters - How many staff members will be involved in the training program and given firearms accesses? This is typically determined by the number of designated shooters on the ERT or CMT. According to the North American Crisis Management Survey (1996), the average number of shooters at a zoological institution is four to six.
3. Size of Collection - How many species in the collection can be classified as dangerous animals and what are the population levels? For example, if the institution has a high population density of elephants, then more than one large caliber rifle may be needed.
4. Diversity of Collection - If the collection is specialized totally towards a few large species, then more rifles and fewer shotguns may be needed. If the collection is almost totally dominated by smaller species, than the inverse is true.
5. Size of Facility - Zoological institutions range a great degree in terms of size. While most small and medium-sized institutions can get by with one central location for firearms storage, the larger facilities that cover vast amounts of acreage may need several locations in order for the firearms to be accessible in a timely manner.
6. Special Needs - Certain institutions have large specialized exhibits and holding areas. For example, many facilities that have large complexes or multiple buildings for housing elephants or carnivores have stored a rifle and shotgun in each individual area because of the increased danger level associated with managing these species in captivity. This is an extremely positive and progressive move.

I'll be the first to admit that getting to the firing range for regular practice can be difficult. The time constraints of working at a zoological institution are often trying when attempting to schedule activities off-grounds. This could be due to daily animal management duties, veterinary procedures, special projects, staffing shortages, and unforeseen animal emergencies. In short, the daily duties and realities of the job; and, there's nothing wrong with that either, animal management should always come first in a zoological institution.

It's a given that if the ERT/Shoot Team goes to the range, they will be off-grounds for half the day.

Also, not all of the shooters will be able to go to the range at the same time. Even if all of the team members are available, it would be irresponsible to take the whole team to the range and leave the facility without the capability of responding in a crisis.

The shooters must also contend with the financial constraints of practicing at the range. Simply put, it's expensive to shoot on a regular basis. As a competitive shooter I quickly learned that ammunition is not cheap; and, like so many others I switched to reloading to defray the cost of competition. However, this is not an option for responders in a Crisis Management Situation. The reason for this can be summed up in one word, liability.

No one should place themselves in a situation where they might be questioned about the quality of their ammunition if a malfunction occurs. This leaves factory ammunition as the only viable alternative. Ideally, you should practice with the exact same type of ammunition that is intended for the crisis situation. Unfortunately, this means using premium or safari-class ammunition for large caliber weapons and that can be very expensive. Also, it's important to not forget the associated costs of shooting maintenance, such as cleaning supplies, special tools, and gunsmithing for major repairs.

So, having said all of this, there in lies the challenge of the situation. While the collection will dictate the needs of the institution, there also exists financial constraints. Yet, in the same breath, there exists time constraints as well, especially considering how valuable staff time is in this trying economic climate when every last person on staff is invaluable.

Ideally there should be at least one firearm for each member of your Emergency Response Team (ERT). This is said for three specific reasons:

If you are trying to maximize your ERT time at the firing range, then ideally every person should be on the firing line. Throughout my career, I have noted at times a lack of weapons to shooter ratio. The end result is that half the team may end up standing by while the other half is actually shooting due to a lack of firearms. This is also problematic during emergency practice drills when you want to advance beyond using mock firearms.

Ideally it really is best if each person has a firearm specifically assigned to them. You can take the same make, model, and style of firearm and match it to another that is identical in almost every way, but it will shoot differently from the next. This is due to variances in the production run. As a result, as you shoot, you learn the firearm and its nuances. In addition, if the firearm is sighted in for you specifically, then it's matched to your shooting style and accuracy, not your teammates.

Finally, if you don't have a sufficient number of firearms on site, this will prove to be truly problematic when you have to take in one or more to the gunsmith for repairs and/or improvements such as adding a scope, light, or sling swivels. At this point you now have the shooters, but not enough firearms to go around.

Next Column: Do you have any safety recommendations for intern and volunteer programs?

If you would like to submit a question for this column or have comments on previously published materials, please send them to AAZK, Inc., 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054, Attn: Reactions/AKF

(About the Author: Since 1985 Bill has been active in the fields of science, zoology, and wildlife management. His education and experience include a B.S. in wildlife management and post-graduate studies in zoology, Lab and Museum Assistant, Shoot Team Leader, ERT Member, Large Mammal Keeper, Senior Keeper, and Zoo Curator at various zoological facilities. His area of research is crisis management in zoological institutions, which draws upon practical experience and training as a Rescue Diver, Hunter Safety Instructor, NRA Firearms Instructor, and Red Cross CPR/First Aid Instructor. Away from work he operates Panthera Research, and may be contacted at puma_cat@hotmail.com.)

Training Tales...



Building Bridges:

How to Select, Condition and Use a Bridging Stimulus

By

Angela Binney, Animal Keeper, Disney's Animal Kingdom and Kim Kezer, Animal Training Advisor, Zoo New England, AAZK Behavioral Husbandry Committee Members

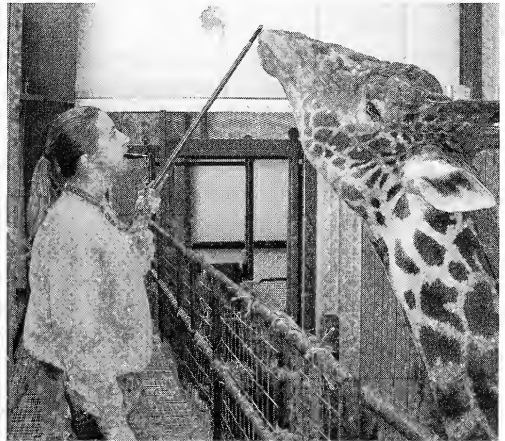
The use of a bridging stimulus or event marker, commonly referred to as a bridge was made widely popular by Keller and Marian Breland (1951, 1966; Bailey, 2003). Countless resources describe what a bridge is and how to use it (Breland & Breland, 1951, 1966; Skinner, 1951, 1971; Pryor, 1999, 2009; Ramirez, 1999; Pear, 2001; Stafford, 2007). None the less, the bridging stimulus is sometimes misused, perhaps due to misinterpretations of the concept or lack of practical application. Trainers do not become proficient at their craft simply by reading about operant conditioning theory, as there is no substitute for practicing training with real animals (Ramirez, 1999). However, a foundation of behavioral knowledge will foster greater success in the field. In this article we will explore what a bridge is, how to select and condition a bridge, and how to use a bridge effectively.

What is a bridge?

In the language of animal training, a bridge refers to a conditioned stimulus that serves as a method of communication between a trainer and an animal to mark, or pinpoint, a desired behavioral response. A bridging stimulus is also a conditioned reinforcer or secondary reinforcer (Bailey, 2003; Breland, 1966). Initially this signal means nothing to the animal until it is paired with a primary (or unconditioned) reinforcer (Pryor, 1999; AAZK/AZA, 2003). As with other conditioned reinforcers, the reinforcement value of a bridge is learned through classical conditioning.

A common example of classical conditioning is Pavlov's dog, which began to salivate after a stimulus (metronome, bell, whistle, visual stimuli – he tested many types.) was repeatedly paired with food (Huitt and Hummel, 1997). Classical conditioning establishes the [bridging] stimulus as a reliable predictor of food and conditions the animal to recognize the stimulus as a reinforcer (Wood, 2008).

Lastly, the bridge is a cue or discriminative stimulus that tells the animal to expect reinforcement (AAZK/AZA, 2003). This may sound a bit anthropomorphic, but the bridge not only tells the animal "yes" or "good job" for a desirable behavioral response, it also says, "You can come get paid now!" An animal that understands the bridge will usually orient toward or move into the proximity of the reinforcement (wherever it has been delivered previously - be that a trainer or a remote feeder of some sort) after the bridging stimulus has been given.



A giraffe trainer at Zoo New England uses a whistle to mark desired behavioral responses.

(Photo by Kim Kezer)

Do you need a bridge?

The consequence of behavior is the tool that shapes behavior (Skinner, 1971), not the bells and whistles used in the process. Depending on the species and the training goal, a trainer may refrain from using a bridge and still achieve success. When deciding whether to use a bridge or not, examine the nature of the behavior being trained and the logistics of delivering reinforcement. If it is a behavior that does not require precision (e.g., shift into a holding area) and the reinforcement can be delivered immediately, then a bridge is not entirely necessary. However, if it does require precision (e.g., specific body positioning), then a bridge is useful so that the trainer can mark the exact moment the criteria for reinforcement are met. If a reinforcer cannot be delivered exactly when the criteria for reinforcement are met, the animal may not associate the reward with the correct behavior. Thus, the bridge adds a degree of accuracy in communicating with the animal.

How to select a bridging stimulus

A bridge can be any signal (audio, visual or tactile) that the animal can perceive (Ramirez, 1999). When choosing what type of bridge to use, the main objective is to select something that is distinct, precise, and easily discernable to the animal. A more precise signal (such as a clicker) is typically more effective than a less precise signal such as a word spoken (Wood, 2008). Verbal bridges can be effective; however, it is important to choose a distinct sound or word that is only to be used to mark behavior and not repeated in casual interactions with the animal. Verbal bridges are also challenging in that each trainer has a different tone and voice inflection.

Think about how the animal will perceive the signal by considering natural and individual history. For instance, dogs typically have excellent audio perception abilities and can detect both low and high frequency sounds (Garrod, 2009). This ability is part of a dog's natural history. However, if the individual is hearing impaired, which is a genetic trait in some breeds, a visual bridge would probably be more appropriate (Jack Russell Terrier Club of America, 2009). Some trainers actually use a tactile bridge, such as a light pat on the side, or perhaps a water slap for aquatic species.

It is possible and common to have more than one type of bridge for some species, such as tactile and auditory; however, it is not suggested to use them both at the same time. An example of an unusual bridge is told by Grey Stafford in his book, *Zoomility* (2007), where a trainer pushed her glasses up on her nose as a bridge in a dog show ring where overt reinforcement was not allowed. So whether you prefer whistles over clickers or visual signals over audio, any signal can be used as long as the animal can perceive it well, and it has been conditioned prior to using it as a bridging stimulus.

How to condition a bridge

Once the type of bridge has been selected, it needs to be conditioned or trained. Think of this as teaching the animal a common language. You have to speak the same language before you can communicate. If he/she doesn't understand what the bridge means, the signal will be meaningless and can likely cause confusion.

Conditioning the bridge is done by associating or pairing the bridging stimulus (whatever signal you chose) with a primary reinforcer (or a really effective secondary reinforcer). Most trainers use a favored food item to condition the bridge. It is important to remember that a bridge is only as strong as the reinforcer it is associated with; choose something they really seek out (e.g. a special treat or their favorite food).

Start with some free feeding of the reinforcement to condition the animal to quickly take the food items as they are presented (Skinner, 1951). Once the animal reliably ingests the food immediately when presented then begin conditioning the bridge. Give the intended bridging stimulus (or signal) directly prior to presenting the food item (Breland & Breland, 1951, 1966; Skinner, 1951). In order to allow for multiple trials in one session, use the smallest reward possible (i.e., tiny bites rather huge portions). This way the animal can consume each bite quickly and does not become satiated or full. Likewise, end the session prior to satiation to have the greatest effect. To test the animal's response to the bridge, the trainer should wait until the animal is not oriented toward the source of reinforcement (the trainer or food dispenser) and then try giving the bridging stimulus. An immediate change in orientation or approach to the area where food was previously presented indicates that the bridge has been effectively conditioned (Skinner, 1951).



A mandrill at Zoo New England is conditioned to a clicker for a bridge. (Photo by Christina Demetrio)

like this: “cue” (trainer gives a discriminative stimulus, S^D , or behavior request), response (animal does the behavior), bridge, reinforce (follow with an additional secondary or primary reinforcer).

If the animal has not been conditioned to elicit behavior with a cue, the bridge can still be used to condition behavioral responses using various training techniques (such as capturing, free shaping, observational learning, successive approximation, etc.). The trainer can then mark the desired response by giving the bridging stimulus and following with a primary reinforcer. So in this case, the learning trial would start with the behavior, then bridge, and reinforce. The intended cue can then be added for future trials as the behavior is offered at more frequent or reliable instances. In other words, just as the bridge means nothing until conditioned, the cue means nothing until trained as well.

The bridging stimulus is given at the exact moment the criteria for reinforcement are met (i.e., the desired behavior occurred). Accurate timing of the bridge is essential to marking the behavior you wish to reinforce. If the bridge is too early or too late, it will reinforce a different portion or aspect of the behavior. Essentially, the animal will give the response that was previously reinforced, which might not be the exact desired response if the bridge was not timed effectively. For instance, when training an open mouth behavior it is important to bridge as the mouth is opening, rather than when the animal has started to close its mouth. Bridging a split second too late could teach the animal to think it is being asked to close its mouth rather than open.

For consistent communication, the bridging stimulus should be given in the same manner each time. It is most effective if the bridge is a short, distinct signal so that it can mark specific aspects of behavior. Lindsay Wood studied the efficacy of bridging types (2008) and found that a clicker was more effective than a verbal bridge, perhaps due to the preciseness of the clicker. Accordingly, bridging repeatedly as a sort of ‘jack pot’ (i.e., multiple clicks in a row or a long whistle) is not advisable. Repeating the bridge to emphasize a behavior response only marks multiple behaviors (or whatever behaviors occurred after the first bridge), (Stafford, 2007). The primary reinforcer can be varied in magnitude according to performance, but the bridge should remain consistent in style and duration of execution.

It is a good practice to quickly follow the bridging stimulus with a primary reinforcer, even after it is conditioned, to maintain its effectiveness as a secondary reinforcer. The bridge does have reinforcing qualities of its own; however, it is only as effective as the reinforcement it is associated with (Stafford, 2007). On this subject, Ivan Pavlov wrote, “...repeated application of a conditioned

The number of pairing required to condition the bridge will depend upon the species and individual being trained. Some species and individuals learn associations faster than others. Karen Pryor says three to four pairings of the bridge with the reinforcer should be enough to condition the bridging stimulus (Karen Pryor, personal conversation). However, it is better to have too many pairings than not enough so that it is certain that the animal understands what the bridging stimulus means before it is used in training. Watching for food seeking behavior is the best indicator of whether the bridge has been conditioned or if more pairing trials are needed.

How to use a bridge

After the bridge is conditioned it can be used to train new behaviors and to continue to mark existing desired behaviors. A basic learning trial will look something

like this: “cue” (trainer gives a discriminative stimulus, S^D , or behavior request), response (animal does the behavior), bridge, reinforce (follow with an additional secondary or primary reinforcer).

stimulus which is not followed up by reinforcement leads to a weakening of the conditioned reflex”, which he termed, “extinction of a conditioned reflex” (1927). His data illustrated that with latency to reinforce, or even the absence of reinforcement (he tested both), the conditioned response decreased (in this case the volume or presence of saliva diminished). While the bridging stimulus is a handy tool for marking behavioral events by conditioning it as a secondary reinforcer, it is not intended to be a replacement for reinforcement (Katie Kalafut, personal conversation, December 2009).

Conclusion

There are many resources available (books, journals, scientific search engines) that can assist animal trainers in furthering their knowledge of training concepts and techniques such as the bridging stimulus. This article is by no means the authority on the subject; it is more of a compilation or summary of what we have learned with respect to an essential training tool. We recommend that animal keepers dedicate time to study animal behavior training in literature and academic resources to reap the benefits of knowledge for their zoo animal training charges. To summarize what we have discussed in this article about the bridging stimulus, the most important factors to remember are: a) The bridge should be a unique signal only given when a desired behavior response occurs, b) it should be given at the precise moment the criteria for reinforcement is met, and c) it should be followed by a reinforcer to maintain its effectiveness as an event marker. After using the bridge to train a few behaviors it can become second nature to the trainer, as practice is often the best lesson.

Acknowledgements

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AAZK Grant Report.....

By Kimberly Wanders, Keeper III
Kansas City Zoo, Kansas City, MO

This year I was able to attend the 2009 American Association of Zoo Keepers (AAZK) joint conference with the International Congress of Zookeepers (ICZ) in Seattle, WA. This was only possible through the help of the AAZK Professional Development Grant and our local Kansas City Chapter of AAZK. For me, there were several highlights from this conference.

It was great to see old and new faces who share the same passions. There were people in attendance that I met at the first ICZ in the Netherlands! After being a keeper for ten years, it still amazes me how much I can still learn from someone next door or on the other side of the world. I was able to take information from presentations and apply it to the animals in my care and share it with other keepers at the Kansas City Zoo. Different enrichment ideas (bird and cephalopod enrichment especially), introduction methods (fission/fusion process), training of behaviors (red river hog training for exams and crate training a crocodilian), husbandry (ways to change up husbandry for weight loss in gorillas and building designs for a variety of animals) and *in-situ* conservation projects (Action for Cheetahs and Lewa Wildlife Conservancy).

This was my first time presenting at a conference which also made it special for me. My co-worker, Jacque Blessington, and I co-wrote two posters. The first poster was titled Establishing a Conditioning Program for a Red Flanked Duiker (*Cephalophus rufilatus*) to Determine and Monitor Pregnancy and the other one is titled Building a Red River Hog (*Potamochoerus porcus*) Restraint on Scraps. There was positive feedback from many keepers on our posters. This time, others were taking back information to their zoo on something I actually helped write! Next time, my goal is to stand in front of my peers and present a formal paper. After attending the "Job Fair - AAZK", I found a second goal, which is that I need to do more for the national organization. All the committees had great opportunities. I will be helping on the Membership Resources Committee with the products AAZK has available for sale.

There was one more highlight for me. I was impressed with the compassion that all those in attendance had. We all know keepers don't make a lot of money. It is the love of the job and not the pay that drives us. The donations raised to help typhoon ravaged Philippines and the Zookeepers Association of the Phillipines was amazing. Keepers and attendees gave so much to those that most of us have never met.

Many thanks go to the grant committee and my local chapter for giving me the opportunity to attend the 2009 AAZK / ICZ conference.

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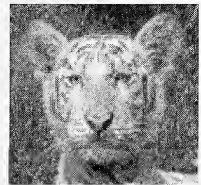
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Conservation/Legislative Update

Column Coordinators: *Becky Richendollar, North Carolina Zoo*
and *Greg McKinney, Philadelphia PA*

This month's column was put together by
column co-coordinator Greg McKinney



Zoo Taunters Face Harsher Dues - After several incidents in which patrons of the San Francisco Zoo have either taunted the wildlife or snuck into enclosures containing dangerous animals, a city lawmaker is proposing to tighten laws and increase penalties for those who foolishly mingle with the city's animals. Supervisor Sean Elsbernd's proposal adds language to an existing law that prohibits entrance into habitats and enclosures, including the bison paddock in Golden Gate Park. The new law would specify that taunting or endangering animals in any city park is not allowed and would also heighten maximum fines for violations from \$500 to \$1,000. The lawmaker introduced the legislation after a man who snuck into the bear enclosure on 26 September not only managed to escape with his life, but also without punishment. A Superior Court judge tossed out a misdemeanor trespassing charge against the 21-year-old man after his public defender argued that he did not intend to stay in the enclosure.

"Turns out that you can't be charged with criminal trespass unless you occupy or otherwise live [in the space]," said Bob Jenkins, the zoo's vice president of institutional advancement. "Never mind that the trespasser had to be rescued, which endangered zookeepers and the bears," Jenkins said.

Shocked by the ruling, Elsbernd said the legislative branch needed to step in and "correct problems presented by the judicial branch." The current city law does not do enough to deter or hold accountable those who stupidly mingle with wildlife, Elsbernd said.

The problem is not new, particularly at San Francisco Zoo. No one can forget the 2007 Christmas Day tiger attack in which one of the animals leapt from its grotto and mauled three victims, killing one. Rumors swirled that the tiger had been taunted prior to the attack. The following year, a patron was caught tossing acorns at a rhinoceros. And later that year, a man was caught climbing the fence of the black rhino (*Diceros bicornis*) enclosure. And those are only incidents in which violators were caught.

The incidents "indicate a need to make sure we have ordinances on the books that allow for appropriate penalties," said Jim Lazarus, president of the Recreation and Park Commission. Elsbernd's ordinance "makes [entering into zoo enclosures] outright illegal," and "confirms that it is a misdemeanor and accentuates the penalties," Jenkins said. "It's specific to the city of San Francisco and eliminates any confusion," he said.

The legislation is expected to be heard by the City Operations and Neighborhood Services Committee as early as March 2010. *Source: San Francisco Examiner, Mike Aldox, 11 January 2010*



Bengal Tiger (Photo by Paul Mannix/Wikipedia)

India Launches Tigernet - A website launched by Jairam Ramesh, Hon. Minister of State (Independent Charge), Ministry of Environment and Forests will give tiger reserve directors and chief wildlife wardens in India the ability to key-in crucial information about tiger deaths, poaching and seizures. The Tigernet website, (www.tigernet.nic.in) will be the first consolidated database on mortality and poaching related to tigers and other protected species within tiger reserves. Gathering accurate information on such tiger activities is crucial to assisting anti-poaching efforts. The new system will allow enforcement officers to record information on tiger mortalities, to monitor patterns of where poaching incidents are occurring and use this information to strengthen anti-poaching efforts.

TRAFFIC has helped develop the new website, in collaboration with the government's National Tiger Conservation Authority (NTCA). The information will be available in the public domain, while Field Directors and Chief Wildlife Wardens will be required to log in to key information on tiger-related issues. The accurate reporting of tiger deaths and the circumstances surrounding them has been a contentious issue in India, with conflicting information from official sources and NGOs, and accusations of secrecy over some findings.

It is anticipated the new website will simplify the whole Tiger death reporting system and allow a more accurate and transparent picture to be generated of the poaching and other threats facing the nation's tiger population. Automatic reminders will be sent to official staff to upload details surrounding any tiger mortalities, including the findings of post mortem examinations. The NTCA recently made funding available for the purchase of cold storage facilities so tiger carcasses can be preserved until a thorough post mortem can be carried out. *Source TRAFFIC.org, 7 January 2010*

Animals Rescued in Texas Arrive at Detroit Zoo -The lives of nearly 27,000 animals seized in a raid on a Texas exotic animal dealer on 15 December are no longer in limbo following a judge's ruling that the animals will not be returned to U.S. Global Exotics. Hundreds of the surviving rescued animals are now at their new home at the Detroit Zoo. The Zoo is providing sanctuary for numerous exotic mammals – including five wallabies, four sloths, three agoutis, two ring-tailed lemurs (*Lemur catta*) and two coatis (*Nasua narica*) – as well as hundreds of reptiles, spiders and amphibians. In addition, the Zoo is helping to place hundreds more animals in other accredited zoos and sanctuaries throughout the country.

The Detroit Zoo played an important role in the largest exotic animal rescue effort in the history of the United States, providing expert assistance in the care of the confiscated animals. Several Zoo animal curators and supervisors spent the seven weeks since the raid helping to care for the animals, many seriously ill, at a temporary rescue facility in Dallas.

“Our mission is celebrating and saving wildlife. There are times we do a lot of celebrating, but this time we are saving thousands of animals,” said Detroit Zoological Society Executive Director Ron Kagan.

The amphibians will be cared for at the Detroit Zoo's National Amphibian Conservation Center, a leader in amphibian exhibition, conservation and research. The wallabies will join the Zoo's wallabies and red kangaroos (*Macropus rufus*) at the Australian Outback Adventure, and appropriate habitats are being prepared for the other animals. All of the rescued animals will be in quarantine for several weeks to ensure they are healthy and acclimating well before being released into their respective habitats.

Officials with the City of Arlington carried out the raid on U.S. Global Exotics after obtaining evidence gathered during a seven-month undercover investigation by People for the Ethical Treatment of Animals (PETA). The Detroit Zoo was contacted for assistance with the care and potential placement of the animals, seized with the help of animal protection groups including PETA, Humane Society of North Texas and the Texas Society for the Prevention of Cruelty to Animals (SPCA). An Arlington municipal judge ruled that the animals were cruelly treated – confined in cramped and filthy cages and denied necessary food, water and veterinary care – and should not be returned to U.S. Global Exotics. The company's owners appealed the decision but were denied by a higher court. The Texas SPCA is working to place the remaining animals with other accredited zoos and sanctuaries to ensure that they are not put back into the pet trade or released into the wild. *Source: Detroit Zoo, 5 February 2010*

In Reversal, Jaguar Habitat Will Be Protected - After more than a decade of resistance, the Fish and Wildlife Service said that it would reverse previous decisions and protect the habitat of the jaguar (*Panthera onca*). The sleek, ferocious cats have been listed since 1997 as endangered, the highest level of peril for a wild species. Still, the government has never designated critical habitat for the jaguar or come up with a formal recovery plan, steps that are commonly taken under the Endangered Species Act. The federal government has given varying reasons for its refusal to act. In 1997, the Fish and Wildlife Service said that to protect the jaguar's habitat, it would have to make public maps of its range. That would make the animals vulnerable to more poaching, already a primary cause of deaths, it said. In 2006, the service argued that jaguars were primarily native to South and Central America and that their range in the United States was largely incidental to its survival. Wildlife advocates sued to protest

those findings, pointing out that jaguars were thought to have once ranged from Louisiana to California, although they had rarely been seen in recent decades.

In March 2009, the Federal District Court in Tucson told the government that it would have to come back with a decision that was soundly based in science. In theory, the Service could have sought again to rule out habitat conservation. But this time the government said it would move to protect critical habitat and would publish a description of the land proposed for the designation. It also agreed to develop a formal recovery plan, which will envision how the jaguar might make a recovery. The Fish and Wildlife Service says there are no known jaguars in the United States today. The last jaguar known to exist within the nation's borders died last March. However, there are nearly 5,000 in Mexico, and more ranging as far south as Argentina and Paraguay. The notion behind a critical habitat designation is to enable the jaguar to survive if it ranges north again.

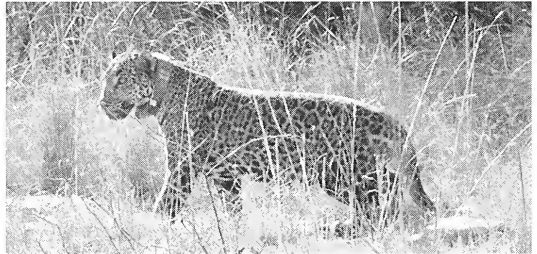
Protecting the jaguar's habitat will be a complicated challenge. The cats can range over hundreds of square miles to hunt prey, and ranchers have fiercely opposed protection. But conservationists were exultant with some predicting that the protection of such a far-ranging species could have a broader impact.

"It will reorient land conservation in the Southwest," said Michael J. Robinson, conservation advocate with the Center for Biological Diversity, a Tucson-based group that brought the lawsuit. When the government weighs a plan to allow tree cutting or mining on public lands, for example, he said, it will have to ensure that it will not harm the jaguar's critical habitat. "We will see planning to ensure jaguars can reach each other," he said. *Source: New York Times, Leslie Kaufman, 12 January 2010*

IG Report: Last U.S. Jaguar Captured, Killed Intentionally - The last known wild jaguar (*Panthera onca*) in the United States captured and killed last year in Arizona, was intentionally caught by employees of the Arizona Game and Fish Department in a snare, the Interior Department's Office of Inspector General said in a report issued January 2010 that implicates the state agency in criminal activities. Jaguars are a federally protected endangered species. The death and subsequent necropsy of this animal, named Macho B, are subject to an ongoing criminal investigation by the U.S. Fish and Wildlife Service Office of Law Enforcement and the U.S. Attorney's office in Tucson, AZ.

"Our review of the FWS agents' documentation showed evidence linking an AZGFD subcontractor and possibly an AZGFD employee to criminal wrongdoing in the capture of Macho B. There was no evidence to suggest criminal involvement by any FWS or other Department of the Interior employees," the Inspector General's Office states in its report.

The Inspector General's report states, "In February 2009, the jaguar was captured in a leg-hold snare meant for mountain lions (*Puma/Felis concolor*) and black bears (*Ursus americanus*). The jaguar was identified as Macho B, fixed with a GPS tracking device,



Macho B, the last of his species in the U.S.

(Photo: Arizona Game and Fish Dept.)

and set free. Within days after being released, the GPS collar indicated Macho B was not moving, so researchers decided to search for him. Once located, veterinarians determined that Macho B was suffering from renal (kidney) failure and euthanized him."

"We found that the AZGFD was aware of Macho B's presence in the vicinity of its mountain lion and black bear study in late December 2008 and January 2009, yet it did not consult with FWS, as required by the Endangered Species Act (ESA) of 1973. The ESA directs any nonfederal entity receiving federal funding to contact the appropriate local FWS office for a biological opinion when an endangered species stands the possibility of being accidentally captured," the report explains.

The AZGFD issued a statement 26 February 2009 saying, "The male cat was incidentally captured on 18 February in an area southwest of Tucson during a research study aimed at monitoring habitat

connectivity for mountain lions and black bears. It was the first capture and collaring of a wild jaguar in the United States.”

The IG’s investigation into these events was conducted at the request of Congressmen Raul Grijalva, an Arizona Democrat, and Nick Rahall II, a West Virginia Democrat who chairs the House Committee on Natural Resources. Congressmen Grijalva said today, “The Inspector General’s report confirmed my suspicions and concerns that the original capture of the last known living jaguar in Arizona by Arizona Game and Fish Department employees was not authorized under the law.”

“I am troubled to find that there is evidence linking a Game and Fish subcontractor, and possibly an employee, to criminal wrongdoing in this capture. The report found that the Memorandum of Understanding between AZGFD and the federal U.S. Fish and Wildlife Service requiring consultation between the agencies was ignored by Game and Fish and that both the Agency and its contractor lacked the necessary permits that would allow it to intentionally or incidentally snare a jaguar in the course of its study on bears and mountain lions.”

“Unfortunately, bungling by the U. S. Fish and Wildlife Service regarding a necropsy of the animal hampered efforts to determine the cause of death,” Grijalva said.

The report identifies FWS Arizona state office field supervisor Steve Spangle as having decided to euthanize Macho B. Spangle told investigators, “...that because Macho B was an older cat - about 16 to 20 years old - and had never been in captivity, it would have been inhumane to keep him sedated, in captivity, or to release him to die in the wild.”

Spangle is also identified as having wrongly approved the skinning of the jaguar because he was unfamiliar with the word “necropsy,” which means autopsy when it refers to the postmortem examination of an animal’s body. Spangle “incorrectly gave approval to AZGFD for a cosmetic necropsy of Macho B, verses a complete necropsy, because he did not know the difference between the two procedures,” the report states. “Thus, some organs were inaccessible, leaving doubt as to the cause of death.”

The Phoenix Zoo’s necropsy summary report, dated 2 March 2009, and tissue samples from Macho B were sent to Dr. Gregory Bradley, a doctor of veterinary medicine of the University of Arizona for examination. Four days later, Dr. Bradley issued a report, stating, “The histologic sections of the kidneys do not indicate significant renal disease.”

The Inspector General states, “With the exception of Dr. Bradley, all of the other animal experts agreed with Dr. Rice of the Phoenix Zoo that Macho B had died of renal failure.” But this too is incorrect, because the animal was euthanized and did not die of kidney failure.

“This report affirms all of the legal claims in our litigation to prevent Arizona Game and Fish from killing another jaguar, and will be critical evidence at trial,” said Michael Robinson of the Center for Biological Diversity, referring to a lawsuit filed by the Center on 24 September 2009.

“This report makes our very strong case even stronger because it confirms the violations,” Robinson said. “Arizona Game and Fish still maintains that it has the right to capture another jaguar, but the judge will read that the conduct the agency defends has already been found to be illegal.” *Source: Environment News Service, 22 January 2010*

New Act Supports Wildlife Veterinary Medicine - On 21 January 2010, Congressman Alcee L. Hastings (D-Florida) introduced the Wildlife and Zoological Veterinary Medicine Enhancement Act. The legislation will develop affordable and well-qualified opportunities for individuals who are seeking to become wildlife and zoo veterinarians, spur job growth, and promote robust public health policy.

“Wildlife and zoo veterinarians are the primary source of essential health care for and management of wild animals in their natural habitat and in captivity. Not only do they preserve natural resources and animal lives, but they help protect human health by preventing, detecting, and responding to exotic and dangerous diseases,” said Hastings.

In spite of a growing threat to public health posed by emerging infectious diseases as well as higher risks of large-scale outbreaks, the United States continues to face a shortage of positions for wildlife and zoo veterinarians. This shortage, combined with lower salaries, high educational debt, and insufficient numbers of practical trainings and formal educational programs specializing in wildlife and zoo veterinary medicine, has dissuaded students from studying and practicing wildlife and zoo veterinary medicine.

“My bill will create new positions for wildlife and zoo veterinarians and limit the amount of educational debt for students while providing incentives to study and practice wildlife and zoo veterinary medicine. My legislation will also advance education by helping schools develop pilot curricula specializing in wildlife and zoo veterinary medicine and by expanding the number of practical training programs available to students,” added Hastings.

“We applaud the leadership and vision of Congressman Hastings for introducing this meaningful legislation which enhances the highly skilled wildlife and zoo veterinary workforce and also creates additional green jobs critically needed at this time,” said John F. Calvelli, Executive Vice President of Public Affairs, Wildlife Conservation Society.

Joining Hastings as original co-sponsors of the legislation are Representatives Donna Christensen, Raul Grijalva, Madeleine Bordallo and Henry Brown Jr. Endorsing organizations include the Wildlife Conservation Society, the American Veterinary Medical Association, the American Association of Wildlife Veterinarians, the National Association of Federal Veterinarians, and the Association of Zoos and Aquariums. Congressman Alcee L. Hastings is Vice Chairman of the House Permanent Select Committee on Intelligence, a senior member of the House Rules Committee, and Co-Chairman of the U.S. Helsinki Commission. *Source: WCS, 22 January 2010*

Feds Want to Keep Big Snakes Out of U.S. - Federal officials want to keep nine kinds of constrictor snakes out of the United States, saying they belong to invasive species that pose the single biggest threat to the nation’s environment.

“This is the story of the invasion of the snakes in the United States of America,” Interior Secretary Ken Salazar said recently while standing near a live python at John F. Kennedy International Airport. He said the Burmese python (*Python molurus bivittatus*) and the other “alien snakes” are destroying some of the nation’s most treasured - and most fragile - ecosystems.



American alligator and Burmese Python in Everglades National Park

(Photo by Lori Oberhofer, National Park Service)

New York is the biggest point of entry in the U.S. for imported wildlife, the secretary said. The ban covers any kind of import of invasive snakes into the U.S. In 2009, U.S. Fish and Wildlife Service Inspectors at Kennedy handled more than 27,000 separate wildlife shipments valued at more than \$1 billion, or 16% of all U.S. wildlife imports. Last year, 54,000 live reptiles entered through the New York airport.

The proposed ban covers nine species of giant constrictor snakes including the Burmese, North African and South African pythons (*Python sebae*), the boa constrictor (*Boa constrictor*), and the anaconda – green (*Eunectes murinus*), yellow (*E.*

notaeus) and Bolivian (*E. beniensis*), as listed by the U.S. Fish and Wildlife Service. About onemillion such snakes have been imported in the past 30 years and even more bred domestically.

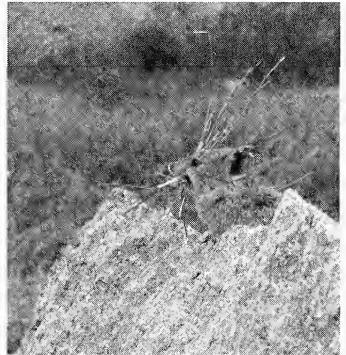
The snakes are popular as pets but destructive when released into the wild - especially in sensitive ecosystems like Florida’s Everglades National Park and the Florida Keys. Having no natural predators, the adaptable snakes breed and feed on alligators (*Alligator mississippiensis*) and other imperiled species whose remains have been found in their stomachs.

"This is an important day for conservation in the United States," said U.S. Fish and Wildlife Service Director Sam Hamilton. He joined Salazar at a news conference in a Kennedy customs warehouse where the live python was on display along with a collection of intercepted snakeskins. Teams of two open and examine shipments of snakes and other animals - wearing gloves and using a crowbar to open crates containing potentially dangerous creatures. The ban proposal will be open to public comment for 60 days before a final decision is made. An invasive species can be any kind of living organism not native to an ecosystem and that causes harm - from amphibians like the cane toad (*Bufo marinus*) to plants, insects, fish, fungus and bacteria. The legislation to ban the snakes was introduced in Congress by Sen. Bill Nelson, D-Fla., and Rep. Kendrick Meek, D-Fla. The Burmese python thrives in south Florida and a population of boa constrictors live south of Miami, while recent evidence suggests northern African pythons are reproducing on the city's western boundaries. Hamilton said he hopes the nine snake species will soon join the list of illegal wildlife trafficking that includes poisonous snakes. Across the country, more than 169,700 shipments of wildlife and wildlife products came in last year, with an estimated value of \$2.7 billion. *Source: Associated Press, 20 January 2010*

Obama Administration Denies American Pika Endangered Species Act Protection - The Obama administration has denied Endangered Species Act protection to the American pika (*Ochotona princeps*), a small, mountain-dwelling mammal that is on the frontlines of global warming-driven endangerment. The decision was required under a court order in a lawsuit brought by the Center for Biological Diversity, represented by Earthjustice, against the U.S. Fish and Wildlife Service for failing to respond to a scientific petition submitted by the Center in 2007.

"This is a political decision that ignores science and the law," said Center biologist Shaye Wolf. "Scientific studies clearly show that the pika is disappearing from the American West due to climate change and needs the immediate protections of the Endangered Species Act to help prevent its extinction. The Interior Department has chosen to sit on its hands instead of taking meaningful action to protect our nation's wildlife from climate change."

"We've already lost almost half of the pikas that once inhabited the Great Basin, and scientists tell us that pikas will be gone from 80% of their entire range in the United States by the end of century," said Greg Loarie, an attorney with Earthjustice representing the Center. "To conclude that this species is not threatened by climate change is an impossible gamble that we can't afford."



American Pika
(Photo: Chris Kennedy/USFWS)

The pika is adapted to cold alpine conditions and can die from overheating when exposed to temperatures as mild as 78°F [25.5°C] for just a few hours. Rising summer temperatures threaten pikas with heat stress and reduce their ability to gather food and move to new areas, while diminished snowpack in winter leaves them vulnerable to cold snaps. Rising temperatures caused by greenhouse gas pollution have already led to dramatic losses of lower-elevation pika populations, pushing pikas upslope until they run out of habitat. More than a third of documented pika populations in the Great Basin mountains of Nevada and southern Oregon have gone extinct in the past century amid rising temperatures. Two separate studies have found that climate change will eliminate suitable habitat and push pikas toward extinction throughout much of the western United States in this century if greenhouse gas emissions are not drastically reduced.

The Obama administration has blocked Endangered Species Act protection for other climate change-imperiled species and has made little progress on overall listings. Last year, the Obama administration denied listing to the spotted seal (*Phoca largha*) off Alaska despite the rapid melting of its sea-ice habitat; it also upheld the Bush administration's decisions to deny listing to the climate-change-imperiled ribbon seal (*P. fasciata*) and emperor penguin (*Aptenodytes forsteri*). During its first year in office, the Obama administration listed only two species under the Endangered Species Act, compared to an average of eight species per year under Bush and 65 species per year under Clinton. *Source: Center for Biological Diversity, 4 February 2010*

St. Lucie OKs Elephant Center Project - County commissioners and zoo officials found a way around the elephant in the room to allow such large mammals into St. Lucie County. Representatives from the National Elephant Center agreed on 26 January to forbid the presence of a criticized training tool on the proposed 326-acre property as one condition for approval of a \$4 million project to house

up to 10 elephants. Representatives from national and local animal-rights groups asked commissioners to ban the use of the bullhook, which resembles a fireplace poker, as a condition for project approval. Though plenty of other issues from access roads to disease control were raised, none drew the amount of response as the possible use of the tool. Although representatives from the National Elephant Center claimed the bullhook could be used in a safe way and would only be used on a small portion of elephants, the group agreed to prohibit the bullhook.

The step paved the way for a 5-0 vote in favor of a project publicly backed by several groups, including the St. Lucie County Chamber of Commerce, while satisfying the demands of the animal-rights groups and the authors of almost 1,000 e-mails sent to each commissioner. Some activists who spoke against the project even stood and cheered after the final vote.

“We’re thrilled that we’re going to be making St. Lucie County our home,” said National Elephant Center Vice Chair Craig Piper.

Piper said the project could be completed by the end of 2010 and will have four employees. The National Elephant Center will provide education programs for schools as well as trainers, though it will not be open to the public. Some elephants could reside at the center permanently, while others could be temporarily housed for a minimum of two years while zoo renovations take place. In other instances, the site could be used to breed elephants. The project is in western St. Lucie County along the Okeechobee County border on land owned by Waste Management.

“The more and more people get to know us and the commitment to the utmost care for elephants, they will grow to appreciate what we bring to the community and ally any concerns that they might have,” said Piper, who also is the president and CEO of the Denver Zoo. *Source: TCPalm, Eric Pfahler, 26 January 2010*

Georgia Governor Sonny Perdue Called on to Ban Rattlesnake Roundups - In a letter sent to Georgia Governor Sonny Perdue, the Center for Biological Diversity is urging the state to outlaw rattlesnake roundups. Roundups are annual contests in which hunters bring in as many snakes as they can catch in a year. A recently published study shows that roundups have depleted populations of eastern diamondback rattlesnakes (*Crotalus adamanteus*) in the southeastern United States.

“Indiscriminate killing of wildlife has been banned for most animals for decades, but not for rattlesnakes,” said Tierra Curry, a biologist at the Center. “This abhorrent practice is harming rattlesnake populations and should be stopped.”

The eastern diamondback was once a common species, but is now being pushed toward extinction by hunting pressure, habitat loss, and road mortality. An analysis of 50 years of roundup data shows that both the total number of snakes and the size of individual snakes have declined over a 50-year time span, and that hunters must now drive hundreds of miles to find snakes for the event. The snake hasn’t been seen in Louisiana since 1980, and is now uncommon throughout its range in Alabama, Florida, Georgia, Mississippi, and the Carolinas.



Eastern Diamondback Rattlesnake
(Photo: Wikipedia)

“Rattlesnakes serve an important role in the food chain by controlling rodent populations and should be respected,” said Curry. “With populations in decline, rattlesnakes need protection.”

Two Georgia towns still hold roundups. Some claim that the roundups protect public health, but eastern diamondbacks rarely bite, and more people are killed in the United States each year by dog bites, lightning strikes, or bee stings than by venomous snake bites. The roundups are not necessary to obtain antivenin, as major producers of antivenin only purchase it from approved suppliers under sterile conditions and have stated that they do not purchase it from roundups. *Source: Center for Biological Diversity, 28 January 2010*

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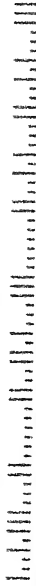


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