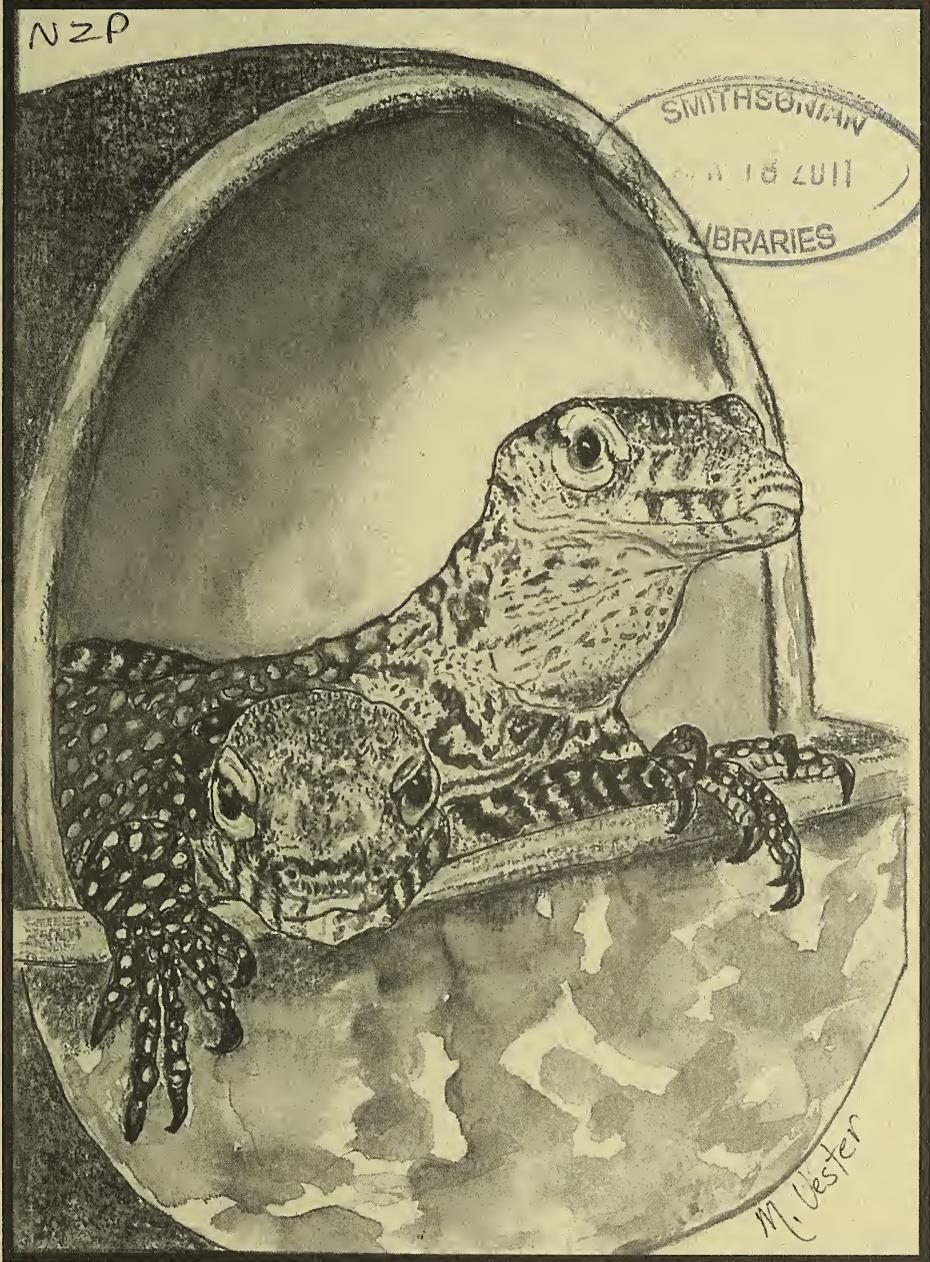


ANIMAL KEEPERS' FORUM

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April 2011

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

ANIMAL KEEPERS' FORUM, 3601 S.W. 29th St., Suite 133, Topeka, KS 66614-2054

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April 2011

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or at www.aazk.org

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37th Anniversary - 1974 - 2011

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 two of the 27 Komodo Dragons (Varanus komodoensis) that hatched at the Los Angeles Zoo and Botanical Gardens giving a boost to the world's endangered population. The cover art is by Marie Vester, a Docent at the Los Angeles Zoo. The female Komodo, Lima, laid eggs on 22 January 2010. The first baby began emerging from its soft-sided egg on 8 August, and the rest hatched over the following two weeks. Komodos are cannibalistic and usually eat their young and eggs of other species, so staying alive is tricky for a hatchling. Hatchlings are 14-20 inches long and weigh about three ounces, but they will grow to about nine feet in length and can weigh 150lbs. or more. Males tend to be slightly larger than females and sometimes have yellow spots on their snouts but are otherwise gray. They have about 60 needle-like teeth that will grow back if one falls out. They cut their prey into sections and then swallow without chewing. They rarely drink, getting their fluids from the food they eat. In the wild, young Komodo will climb the nearest tree to avoid being eaten by adults. They will stay in trees and eat insects and other lizards until they get too heavy for the tree. By then they will have developed enough to protect themselves from adult Komodos. The Komodo dragon, also called Komodo monitor, is the world's largest lizard species. It is an ancient species: the earliest known fossils of the genus Varanus appeared about 40 million years ago. An adult Komodo can consume up to 80% of its body weight in one meal. It has two highly developed sensory organs that allow the dragon to detect rotting carcasses from distances as great as 10 km (6.2 mi.). It is primarily a scavenger, but it will also stalk animals ranging in size from small rodents to large water buffalo. It lies motionless and camouflaged alongside game trails for the unwary, which tend to be the very young, the old and the sick. In an attack, it lunges at its victim with blinding speed and clasps it with the serrated teeth of the jaw. A kill is usually shared by many Komodo dragons and very little is wasted. Komodo dragons are found mainly on the Indonesian islands of Komodo, Rintja, Padar and Flores. Thanks, Marie!

Source: The Artist and <http://nature.ca/notebooks/english/komodo.htm>

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. Submission guidelines are also found in the Members Only section of the AAZK website.

**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.

Items in this publication may be reprinted providing credit to this publication is given and a copy of the reprinted material is forwarded to the editor. If an article is shown to be separately copyrighted by the author(s), then permission must be sought from the author(s). Reprints of material appearing in this journal may be ordered from the editor. Regular back issues are available for \$4.00 each. Special issues may cost more.

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AAZK website Address: www.aazk.org

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

Scoops & Scuttlebutt



Election 2011 Update

The nomination period for the election for the AAZK Board of Directors is now closed. The election will be carried out electronically through the Member's Only section of the website [www.aazk.org]. Following is the Election 2011 schedule:

- April 1, 2011 – Candidate profiles will be available for viewing in the Member's Only section.
- April 15, 2011 to June 1, 2011 – is the official online voting period.
- Results of the 2011 election for the AAZK Board of Directors will be announced after the verification of ballots, around June 10, 2011.

Only currently active AAZK Professional Members may vote in the Board of Directors election. In order to access online voting you must have established an account in the Member's Only section of this website. Verification of your membership and access to this section is given by approval from the Administrative Office once you have set up your account.

AAZK Awards Committee Now Accepting Nominations

The American Association of Zoo Keepers Awards Committee is accepting nominations for the Lifetime Achievement Award, the Jean M. Hromadka AAZK Excellence in Animal Care Award, The Lutz Ruhe Meritorious Achievement - AAZK Professional of the Year Award, the Lee Houts Enrichment Excellence Award, the Certificate of Merit for Zoo Keeper Education, the Certificate of Excellence in Exhibit Renovation, the Certificate of Merit in Conservation, the Mazuri Animal Nutrition Award, and The AAZK Chapter of the Year Award that will be presented at the 2011 AAZK Conference in San Diego, CA. The deadline for nominations is **1 May 2011**. Information concerning the qualifications, nomination procedure, selection procedure and an explanation of the awards may be obtained at www.aazk.org, under committees/awards.

Bowling for Rhinos Conservation Resource Fund Grant

The American Association of Zoo Keepers, Inc. (AAZK) is pleased to announce the 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.

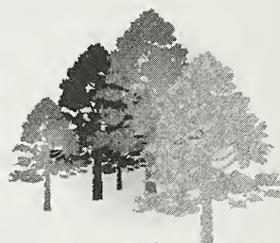
Eligibility

Affiliation or partnership with AAZK is not required, but preference may be given to AAZK Members or Conservation Partners.

Applications are due no later than June 1st. Award announcements will be made on July 1. Application information is available on the AAZK website, www.aazk.org. Completed applications may be e-mailed to AAZK Conservation Committee Chair Amanda Kamradt at amanda.kamradt@aazk.org, or mailed to: Amanda Kamradt, Hooves and Horns, Franklin Park Zoo, 1 Franklin Park Road, Boston, MA 02121.

Acres for the Atmosphere Success Story

"Acres for the Atmosphere is rooted within local communities. Promoting increased environmental awareness, we utilize group identity to instill a sense of personal ownership for one's actions and environment. We aim to effect change on the carbon based economy and improve our surroundings near and far."



The American Association of Zoo Keepers, Inc. (AAZK) and Polar Bears International® (PBI) would like to recognize the outstanding hard work of zoo keeper, Kara DeLanty in the Acres for the Atmosphere initiative.



Kara recently implemented a compost program at the Milwaukee County Zoo. Forming a partnership with "Growing Power" (www.growingpower.org) she is able to help reduce landfill costs for her zoo by potentially \$50,000 once the program is fully implemented, not to mention how the project helps save the environment and spread environmental awareness.

This is just one of the many successes that PBI-AAZK Arctic Ambassadors have made possible through their community-based efforts to support the Acres for the Atmosphere initiative to save polar bears.

If you are interested in finding out how you can help please contact: marissa.krouse@aazk.org. For more information regarding this project contact Kara at: Kara.DeLanty@Milwcnty.com

"My two primary goals as an Arctic Ambassador working on Acres for the Atmosphere, are to lead by example through environmentally-based initiatives, and to educate people in my community how their actions here in Wisconsin can affect polar bears way up in the Arctic." Kara DeLanty



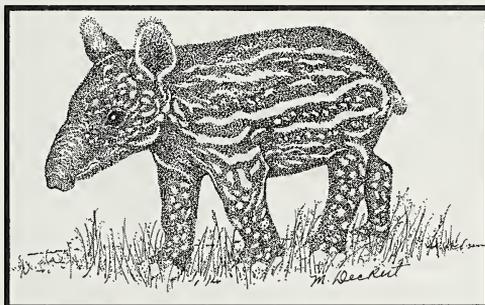
July 17 - 23, 2011

Starting Planning Now!
See helpful info at www.aazk.org
Look under "About Us" on the homepage.

CALL FOR PAPERS FOR DEDICATED ISSUE OF AKF - UNGULATES

We are planning on producing a combined July/August 2011 edition of *Animal Keepers' Forum* dedicated to ungulates. We will be working with the Ungulate TAGs in producing this dedicated issue. We would like those interested to submit manuscripts for consideration for inclusion in this dedicated issue. Possible topics might include the following:

- Ungulate Care and Management
- Managing multi-species habitats
- Managing single-sex herds
- Ungulate Hand-rearing
- Ungulate hoof care
- Ungulate operant condition
- Ungulate Enrichment



Papers should be submitted electronically in MS Word only to akfeditor@zk.kscoxmail.com. Please use Times or Times New Roman font (10pt text body). Please put "Ungulate Issue" in the subject line. Papers should be no more than 10 pages in length. Any charts and/or graphs should be submitted as separate jpg or tif files along with (but not imbedded in) the manuscript. We also encourage photos of your animals to include and these should also be submitted electronically as either high-resolution (minimum 300 dpi) jpg or tif files.

If you cannot submit your material electronically, you may submit your materials on a disk or CD sent to: Ungulate Dedicated Issue, AAZK, Inc., 3601 SW 29th St., Suite 133, Topeka, KS 66614-2054. If you cannot submit photographs electronically, you may send 3 x 5 inch prints to the same address. You should include proper photo credit for each photo and also suggested captions for each photo submitted.

Be sure to also include your complete contact information including name, address, email and a daytime phone where you may be reached if we have questions concerning your submission. Also be sure to include your facility and your job title at that facility.

**Deadline for submission of articles for consideration for this special
Ungulate Issue is May 15, 2011.**

Coming Events

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

April 17-22, 2011 - 11th Annual Animal Behavior Management Alliance (ABMA). In Denver, CO. The conference will kick off with our keynote speaker, Dr. Jill Mellen from Disney's Animal Kingdom, and will culminate with an Earth Day to remember at the Denver Zoo. See (<http://www.theabma.org/>) for further information.

May 15-18, 2011 - 2011 Rhino Keeper Workshop. To be held at Fossil Rim Wildlife Center, Glen Rose, Texas. For further info contact: adam.felts@columbuszoo.org

June 13-16, 2011 - 7th International Zoo & Aquarium Marketing Conference - Hosted by the WAZA and the Granby Zoo in Granby, Quebec, Canada. Theme for the conference is "Strategic Marketing in Action". The program will address the following topics: Strategic Marketing, Marketing the Zoo & Aquarium Community, Marketing, Education and Conservation, Turn Bad News into Good News, and Social Marketing in Action. See www.zoodegranby.com/waza for further information.

July 20-23, 2011 - Biology of Rattlesnakes Symposium - To be held at the University Park Marriott in Tucson, AZ. Hosted by the Chiricahua Desert Museum and the Arizona-Sonora Desert Museum. People interested in presenting papers should contact Lori King Palmer at loriguanid@aol.com. Those interested in presenting posters contact Matt Goode at mgoode@ag.arizona.edu. For registration information, current list of speakers and other details, please go to www.biologyoftherattlesnakes.com

July 25-30, 2011 - The First-ever Joint Meeting of the International Ethological Conference (IEC) and the Animal Behavior Society (ABS). To be held at Indiana University, Bloomington, Indiana, USA. More information can be found at the conference website: <http://www.indiana.edu/~behav11/index.shtml>. The program will be exciting and integrative scientific that draws on the strengths of both the IEC and the ABS.

August 24-28, 2011 - AAZK National Conference. In San Diego, CA. Hosted by the San Diego AAZK Chapter and the Zoological Society of San Diego. See <http://sdaazk.com> for information.

October 1-5, 2011 - 30th Annual Conference of the Association of Zoological Horticulture (AZH). Hosted by the Sedgwick County Zoo, Wichita, KS. Theme: "Bringing the World to the Plains". Seminars and workshops covering a wide range of topics involving Horticulture, Integrated Pest Management, Conservation and Exhibit

Design will be presented. Participants within the Horticulture, Arboriculture and Grounds Maintenance fields are encouraged to attend. For information call 316-266-8313, 316-266-8314 or visit AZH.org.

October 6 - 9, 2011 - Advancing Bear Care 2011 To be held in Banff, Canada. Bear biologists and naturalists will lead hikes into bear habitat and interpret for delegates how bears use the components of the ecosystem to express their daily and seasonal routines. We will bring this information back into workshops and apply this knowledge towards improving captive bear husbandry. Also, international bear biologists will assist us in interpreting Asian, European, and South American bear habitats. Conference updates will always be posted on the Bearcare Yahoo Group list serv <http://ca.groups.yahoo.com/group/bearcare/> You will be able to advertise your need for roommates, rides, conference questions etc. on this list serv. To join just send an email to bearcare-subscribe@yahoogroups.ca

October 6-9, 2011 - 32nd Annual Elephant Managers Association Conference - Hosted by the Seneca Park Zoo, Rochester, NY. The pre-conference trip will be hosted by Lion Country Safari in Cambridge, Ontario on Wednesday, October 5th (Passport needed to participate in this trip).

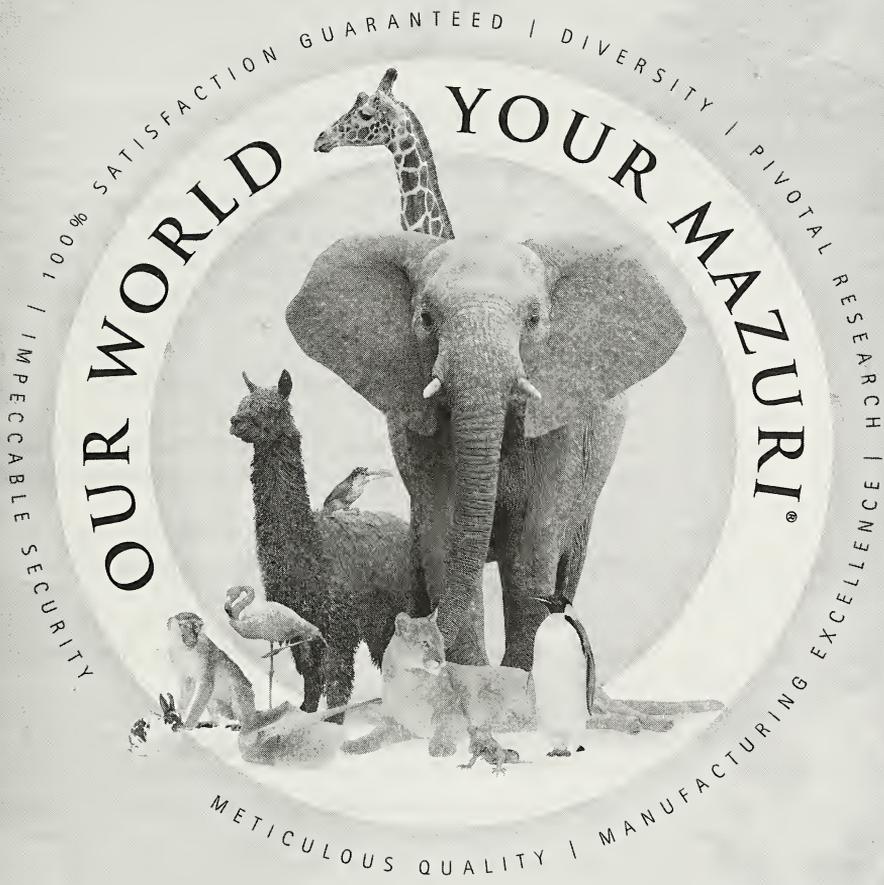
2012

August 8-14, 2012 - The World Congress of Herpetology - To be held in Vancouver, Canada. For more information see <http://www.worldcongressofherpetology.org/>

September 9-13, 2012 - 4th International Congress on Zookeeping - Sponsored by Wildlife Reserve Singapore/Singapore Tourism Bureau. Theme: "Many Voices, One Calling". For info on sponsorship or exhibit opportunities email eo@aszkg.org.au. Check the ICZ website <http://www.icz.org/> for latest news/information.

September 23-27, 2012 - AAZK National Conference - Hosted by the Rosamond Gifford Zoo and the Rosamond Gifford Zoo AAZK Chapter in Syracuse, NY.

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



We're evolving the new generation of exotic animal nutrition. Today, Mazuri offers food products for more animal species than any other company in the world. For over 20 years, we've worked in collaboration with world-class zoos, aquariums, owners & breeders around the globe to develop the highest quality product for your animals. Trust in the security of Mazuri for the health and longevity of your exotic animal.

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The 38th Annual AAZK National Conference

San Diego, CA: Aug 24-28, 2011

Only four months left until the 38th Annual AAZK Conference in sunny San Diego! The San Diego AAZK Chapter is excited to announce more details on the conference, listed below. Please look them over and log on to our website www.sdaazk.org to register for the conference. Feel free to contact any San Diego AAZK board member if you have questions. We suggest you hurry and register now before you miss out on a workshop or our behind-the-scenes opportunities!

Announcing the San Diego AAZK's Fundraising and Rewards Program!

A unique way to shop at your favorite online stores; get great discounts, get cash back, and support the San Diego AAZK Chapter! Help make the 2011 National AAZK Conference outstanding by supporting our fundraising cause! By simply using our Fundraising and Rewards program, 50% of the cash back you generate automatically gets donated to the San Diego AAZK and the other 50% goes back to you!! Plus receive exclusive member discounts! Register now for your FREE Beyond Perks account by simply going to: <http://www.beyondperks.com/sdaazk> 3 Easy Steps: Register, Shop, Save! Please spread this terrific program to your friends, family, and institution to support us!

Looking for Sponsors!

Have you considered getting involved by becoming a sponsor of the 2011 National AAZK Conference in San Diego? Now's the time to support a great organization and be seen among animal care professionals from around the world.

Contact Conference Co-Chair, Matt Akel at matthewakel@att.net for more information on how to help make a difference.

Be sure to visit www.sdaazk.org for continual updates regarding the conference. Don't forget to visit us at Facebook and Twitter via our webpage.

Registration

Online conference registration will be preferred, however other options will be made for those unable to register online. For the 2011 National AAZK Conference, SD AAZK is using Eventbrite as its registration source. When you go to register at www.sdaazk.org, you will be linked to our Eventbrite site. All conference events, such as Pre & Post Conference Trips, Zoo Day Behind-The-Scenes (BTS) locations and times, and San Diego Zoo's Safari Park special events, are now offered online for sign-up at the time of registration. Please read all the categories when you go to register. Therefore those who register early will have first choices as to areas they would like to visit. Workshops are starting to fill up so hurry and register now!

Prices

Full week registration:

- Members: \$200 (includes all paper sessions, Icebreaker, Zoo Day, Awards lunch/dinner, T-shirt)
- Non-members: \$275 (includes all paper sessions, Icebreaker, Zoo Day, Awards lunch/dinner, T-shirt)

NOTE: Full registrations may be transferred among different individuals on different days if desired, but only one conference packet with one conference badge will be issued per registration. If conference registration is purchased for a group, cost will be dependent on group's AAZK membership status and will state group's name. All individuals will only be able to enter conference areas if wearing conference badge.

- Daily Registration: \$75
- Icebreaker only: \$75
- Banquet only: \$100
- Conference T-shirt: \$15

There will be an increase in cost for registration after July 13, 2011.

- Late Registration Fee for Members: \$275
- Late Registration Fee for Non-Members: \$350
- Daily Registration Fee: \$85

Pre- and Post-Conference Trips

Pre- and Post-Conference Trips are still being worked on but the following is a tentative schedule. Times are yet to be determined.

Tuesday, August 23: SeaWorld San Diego Visit. Meet SeaWorld staff for an exciting day. Includes entrance to park, Skyride, Skytower, special Behind-The-Scenes experiences, and transportation. Limited to 50 people. Donation of \$70 pp. Questions regarding this trip? Contact Linda Henry at Linda.henry@seaworld.com for details.

Wednesday, August 24: San Diego Zoo Safari Park Photo Caravan. Ride into the Park's open field exhibits in a flatbed truck, and get a chance to feed giraffes or rhinos while capturing safari style photos of wildlife in a natural setting. The first 100 people to register will be able to sign up for this one-hour tour for only \$35. Price includes San Diego Zoo Safari Park admission, tour, and transportation. Limited spaces.

Monday, August 29: Visit to Alpine and Julian. This trip includes a stop at the local exotic cat rescue facility "Lions Tigers and Bears" with a stop in Julian for wine tasting and lunch at Menghini Winery. Continue on to the California Wolf Center for an afternoon presentation and tour. Transportation included. Cost \$60 pp. Questions regarding this trip? Contact Hali O'Connor at halieden44@yahoo.com for details.

There is so much to do in San Diego! We are offering information for other activities while you are in town. San Diego is home to five zoos and aquariums. In addition to the San Diego Zoo, San Diego Zoo Safari Park and SeaWorld San Diego, consider visiting SeaLife Park at Legoland and the Birch Aquarium at UCSD during your conference visit.

Are you interested in a kayak tour or snorkeling with leopard sharks in La Jolla? Would you like to visit Disneyland? Disneyland is located in Anaheim, 1 hour and 40 minutes drive from San Diego (w/o traffic). Let us know what you would like to do and we will help you plan your activity.

Program

Our SD AAZK board is extremely excited to announce that our keynote speakers will be Joan Embery and Juli Scardina. Joan Embery has served as a champion of environmental and conservation issues around the world. Juli Scardina is an Animal Ambassador for SeaWorld and Busch Gardens and has shared her love of animals and commitment to wildlife conservation with people across the nation. For more information on our terrific keynote speakers, please visit our website.

Icebreaker

We are thrilled to hold the Icebreaker at the San Diego Zoo Safari Park. We will offer a limited number of tours at a very reasonable price.

Zoo Day

Conference delegates will have all day to explore the San Diego Zoo! Zoo Day will include a free breakfast and lunch, Behind-the-Scenes tours, Open Houses, and special presentations. Special visits in various areas will be available on a first come, first serve basis, dependent upon when you register for the conference. You will even receive a discount on merchandise and food throughout the zoo!!!

Exhibitor Information

We will have exhibitor tables available during the duration of the conference. Exhibitor tables will be located in the Westin Gaslamp Quarter Hotel in a highly visible area. There will be a limited number of tables available so be sure to reserve yours soon. Exhibitor rates are as follows:

- AAZK Members: \$100
- AAZK Non-members: \$200
- Conservation Groups: \$ 50

Note: Additional fees may apply.

Submitting Papers and Workshops

Theme for the 2011 National AAZK Conference is “Inspiration, Dedication, Conservation, Innovation”. The deadline for submission of abstracts for papers and posters is now closed. Presenters will be notified regarding acceptance by 1 May. Posters will be on display throughout the conference and presenters will be available for discussion with other conference delegates during the designated poster presentation session.

Chapter Challenge

Don't miss out on this opportunity to get involved with the Chapter Challenge! How would you like to win a free registration or a registration in addition to a shared double room?? Do you want to support the general conference budget to help make this gathering spectacular? Visit our website at www.sdaazk.org for more details!

Accommodations

Hotel registration at our special conference rate is available NOW! The Westin is located in San Diego's historic Gaslamp Quarter, featuring fine shopping, restaurants, entertainment, and culture. The Westin Gaslamp Quarter offers a unique location with the exhilarating excitement of the city at our doorstep. Because of the Westin's central location, it is easy to use our public transportation system. Conference delegates will be able to access public transportation to many of San Diego's main attractions, including the San Diego Zoo, SeaWorld, Scripps Birch Aquarium, and our beautiful beaches. Conference delegates will also enjoy the Westin's hospitality, and the environment will appreciate their green policies.

Conference Room Rate: \$159 per night. The hotel has a limited number of double rooms available; if you need two double beds in the room, please book early, and let the hotel know you'd like a double room.

- Room rate: Single or Double – \$159, Each additional person \$20
Hotel rate is available until August 2, 2011

To book your hotel reservation, go to www.starwoodmeeting.com/Book/aazk or visit www.sdaazk.org.

Roommate Connections

Looking for a roommate during the conference? Let us know your preferences for a roommate and we will try our best to help you find a roommate during the 2011 National AAZK Conference in San Diego. Information we will need includes: Your name and institution you work for, roommate preference (male/female), smoker vs. non-smoker, and your dates of arrival and departure. Email Laurie Brogan at birdladydaazk@cox.net with your information.

Transportation

By air: Conference delegates should fly into the San Diego International Airport (SAN). Bus from Airport to Westin Gaslamp Hotel, Route # 922: Use San Diego's Metropolitan Transit System (www.sdmts.com) for \$2.25 (exact fare required) from the airport to the hotel as your cheapest and greenest way to arrive. Route #922 takes 15 minutes and leaves from in front of the airport every 13 minutes. Tell your driver your destination is the Westin Gaslamp Hotel at Horton Plaza. Once you exit the bus on Broadway Avenue, the hotel is on that same side.

Auction Events

Would you like to participate in the 2011 National AAZK Conference's Live and/or Silent Auctions?

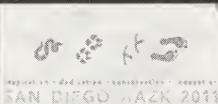
Items donated for the live auction should be valued at \$300 and up (or equivalent). These items could include animal artwork, collectable artwork, jewelry, vintage pieces, gift certificates, vacation stays, and more. There will be a limited number of items used for the silent auction, so unique and creative items are encouraged.

Ideas of items you can donate for the silent auction: memorabilia from your organization, jewelry, items that are appropriate for resale, and anything else you think would be of interest. Both auctions will be held on August 28th during the awards banquet at the Westin Gaslamp Hotel. Preview time will be announced at the conference, so stay tuned. You won't want to miss out! Auction forms MUST accompany all donated items (download form online). If you are bringing items with you to the conference, please turn in the auction form and donated items at time of registration. If sending or mailing items ahead of time, please send items and completed auction form to: San Diego AAZK ATTN: Maureen O. Duryee P.O. Box 632984 San Diego, CA 92103

For auction information, please contact Maureen O. Duryee, SD AAZK Fundraising Coordinator, at Duryee@cox.net. The auctions will be exciting so be sure to check out all the items during the preview.

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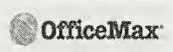
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AAZK Announces New Members

New Professional Members

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The AAZK Behavioral Husbandry Committee Presents

Training Tales...



Where you can share your training experiences!

*Training Tales Editors – Jay Pratte, Omaha’s Henry Doorly Zoo;
Kim Kezer, Zoo New England; and Angela Binney, Disney’s Animal Kingdom*

Training the Trainer: Cooperative Hoof Trim

*By Virginia Valentine, Apprentice Keeper
Oakland Zoo, Oakland, CA*

Introduction

Over the summer and fall of 2010, I participated in the paid apprentice program at the Oakland Zoo in Oakland, CA. This six-month position focused on teaching new keepers the skills necessary to effectively care for exotic animals. Paid apprentices work with many keepers in multiple areas of the zoo, allowing a wide variety of animal experience. In addition to the physical tasks associated with feeding and maintenance of animal areas, we are trained in using operant conditioning in order to facilitate husbandry needs and reduce stress for the zoos animals.

The paid apprentices also staff the Contact Yard during zoo hours, working with 4.2 Pygmy goats (*Capra hircus*), 4.1 Nubian goats (*Capra hircus* sp.), 1.0 Boer goat (*Capra hircus* sp.), and 2.3 Blackbelly-Katahdin sheep (*Ovis aries*). The Contact Yard keeper gives the paid apprentices the opportunity to hone their operant conditioning skills by practicing with the goats and sheep—in effect training new trainers on how to train an animal. For one hour a week after work, we are taught how to use our body movements to guide a behavior, how to use the placement of food rewards to affect the placement of the animals (without baiting), chaining multiple behaviors, and appropriate timing of a bridge.

Planning

All of the Contact Yard animals are currently restrained for their hoof trims. Gaylord, a four-year old pygmy goat, is the most distressed while restrained and the most in need to be trained for a cooperative hoof trim behavior. The behavior’s purpose is to allow regular, low-stress maintenance of hoof health without restraint or sedation, so it should have a positive impact on Gaylord by decreasing the stress he experiences during hoof trims. As a paid apprentice I was provided the opportunity to train this complex behavior while being supervised by an experienced keeper.

Before writing the behavior plan, I researched the existing cooperative hoof trim protocols currently in use at the Oakland Zoo. African veldt keepers regularly utilize cooperative hoof trimming on the collection’s giraffe (*Giraffa camelopardalis*), with the help and guidance of a volunteer Ferrier and volunteer training consultant. Shaping a hoof trim behavior was also part of the regular training sessions for a Grant’s zebra (*Equus quagga boehmi*). The keepers allowed me to observe and participate in both of these existing training programs. Using these experiences, online hoof trim videos, watching trimming done on our goats (using restraint), and studying goat anatomy, I wrote my first training plan. Knowing that my colleagues’ experience and knowledge were my biggest assets, multiple keepers were asked to read over the plan. Their feedback was invaluable and greatly improved the plan’s chances for success.

Implementing the Plan

Though Gaylord was conditioned to a clicker, a mechanical whistle was more appropriate for this behavior because it allowed the use of both hands while working. The rewards were limited to one cup of grains and/or cereals per day to minimize weight gain, with half of a horse cookie used for a jackpot. As my other duties allowed, I was able to work with Gaylord four days a week.

The first step was to condition Gaylord to the mechanical whistle as a bridge, which was easily done in a few minutes. Then Gaylord was trained to station on a mat with the trimming tools in a basket nearby. These quickly became the visual cue to him that we would be training soon and he became very excited whenever he saw them out before a session. Next, another person was needed as a feeder while I sat on the ground adjacent to Gaylord's left or right side. At first it was necessary to be a few feet away from him, but after two sessions I was able to move within arm's length while he remained calm and facing forward, towards the feeder (see Fig. 1).



Figure 1: Gaylord is trained to station on a mat.
(Photo courtesy of Elizabeth Abram, Oakland Zoo)

The original plan included increasing the duration of time Gaylord stood in this station position, but Gaylord's impatience became obvious by his repeated jumps on the feeder and continued "resetting" on the mat (backing up off the mat, and then moving forward back onto the mat). His primary keeper suggested that these behaviors showed Gaylord's excitement to do more and that the training plan could be re-written in response to his individual needs and progress. It was also suggested that I break the session into two parts, divided by previously trained, high-reinforcement behaviors. This seemed to help ease Gaylord's frustrations with my inexperience and "newbie" errors: failing to bridge during a desired behavior or bridging

too late. Once I implemented these changes he rarely "reset" on the mat and did not jump on the feeder as much.

The plan was modified to increase duration of time holding a hoof-lift after it was built on each leg. Any actual trimming would wait until all four legs were ready. I started on the front right leg and after several sessions, Gaylord allowed me to touch and squeeze his front right leg from his shoulder down to the hoof, while he remained calm and stationary on his mat (see Fig. 2). Capturing an active lift of his leg (90° bend at the carpus) took two sessions, then a few more to increase the duration of his hold up to five seconds (see Fig. 3). At this point a verbal cue was unnecessary, since the tactile cue of rubbing his leg and the visual cue of the mat and trimming tools were sufficient. Leaving out a verbal cue also eliminated some false bridges for Gaylord, as I occasionally whistled accidentally while talking with the whistle in my mouth. After a successful hoof-lift on the front right leg came desensitization to scratching, pinching, and rubbing the hoof with my hands. The sight and sounds of the trimming clippers and rasp

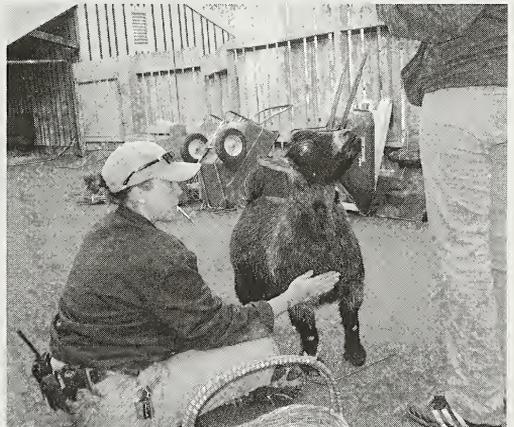


Figure 2: Desensitizing Gaylord to human touch.
(Photo courtesy of Elizabeth Abram, Oakland Zoo)

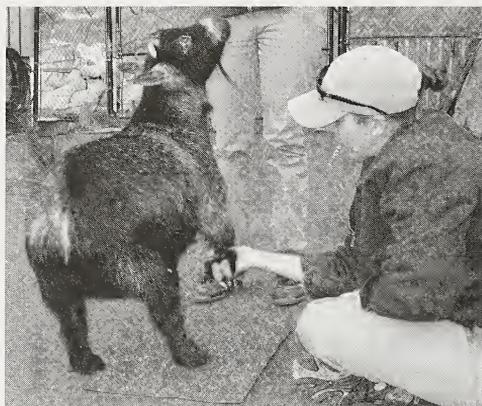


Figure 3: Front right hoof-lift.
(Photo courtesy of Elizabeth Abram, Oakland Zoo)

instead of a longer session because I, the trainer, wanted to get more out of it. These pieces of advice were really helpful. They had a positive impact on future sessions and on how quickly Gaylord was able to move forward: working up to a five-second duration hoof-lift on his front, left leg took fewer sessions than it had on the right. I was very excited and moved on to his back legs.

Though sitting behind a giraffe or zebra to trim hooves is not an option, the danger of bodily damage from a pygmy goat kick is minimal, and so I chose to sit directly behind Gaylord while working on his back legs. This position was comfortable for both Gaylord and myself and gave me a good view of the bottom of his back two hooves. Starting on the back right leg, Gaylord was given the same tactile cue used on the front legs: rubbing from hip to hoof. Gaylord was calm during this, but would then kick back suddenly when his hoof was squeezed or lifted. After kicking, he would allow his leg to be held up and back, but he was unsteady and would quickly lose his balance. After a few frustrating sessions of Gaylord kicking and falling over, I needed to change the approach for his back legs. Gaylord's primary keeper suggested starting over on the back legs using micro-shaping. The Oakland Zoo giraffe have been trained for many complex behaviors using this method of building very small movements into a larger behavior by shaping through successive approximations. The micro-shaping I had learned while watching giraffe training became my guide.

Gaylord was bridged for calm, stationary behavior, then for shifting his weight to one side or the other. It took several sessions for this to be captured on each side (with his weight shifted away from the hoof-lift side so that he was stable enough to lift his hoof and then keep his balance). Once this weight shift was established, it only took about a week to go from a weight shift to a full hoof-lift of the back right leg - a bend at the stifle and pastern - then another week for the left side. During this process, I had Gaylord review the lift on his front legs to keep those behaviors from deteriorating.

At this point, the finish line was clear: my happy little goat allowing his hooves to be trimmed cooperatively. Then I realized the fatal flaw in the training plan... I had never actually trimmed

were introduced next, for all of which Gaylord remained calm.

As this was my first experience building a complex behavior from scratch, I had assumed that once a behavior was built on an animal's right side, it could easily transfer the behavior to the left, but I was very wrong. The Contact Yard floating keeper observed Gaylord struggle with the increased criteria on his left front leg and recommended building the hoof-lift as if it was the first time again—using smaller, easier criteria. It was also suggested that sessions be shortened from around 15 minutes to 10 minutes to keep Gaylord from growing bored or satiated. The floating keeper advocated for ending a session earlier with a positive experience for Gaylord,

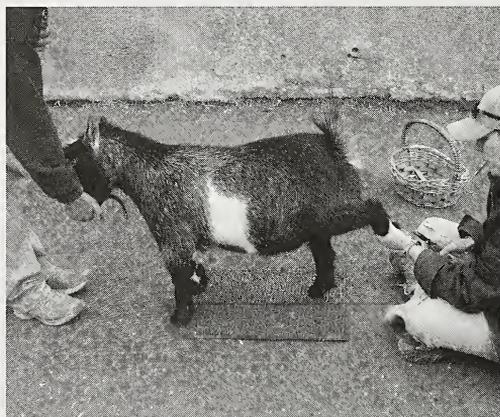


Figure 4: Rear left hoof-lift and trim.
(Photo courtesy of Elizabeth Abram, Oakland Zoo)

hooves before! Thankfully I realized this with plenty of time to request some practice with the Contact Yard relief keeper who trained me on trimming hooves of some other goats using restraint. By the time Gaylord's back leg hoof-lifts were reliable and he was desensitized to the trimming tools, I felt comfortable trimming hooves safely and finally was able to put all of the steps together. With the relief keeper observing and giving me feedback on trimming methods, I was able to trim and file both back hooves in one session (Fig. 4). The next day, Gaylord allowed both of his front hooves to be trimmed and I was ecstatic. I had completed the training of my first complex behavior from scratch!

Conclusion

Though pygmy goats are easily restrained for husbandry needs, I feel this project was worth the time and effort in order to reduce Gaylord's stress during hoof-trims. It has also provided him with regular positive reinforcement, as well as mental stimulation beyond the petting and brushing he gets in the Contact Yard. Gaylord's cooperative hoof-trim is now being generalized to the primary keeper and we hope to train other pygmy goats for trimming in the near future. Though this process took me four months (much longer than it would have taken experienced keepers!), I learned so much by being allowed to figure out each step with help just a question away. The advice given before, during, and after writing and implementing the training plan was definitely invaluable for a new trainer. Though the paid apprentices can watch and participate in established training programs, being allowed to try something new, make mistakes, and learn from those mistakes is a priceless asset to any keeper's development as an effective trainer.

Acknowledgements

A huge thanks to Elizabeth Abram, the amazing Contact Yard primary keeper; Amy Phelps, antelope and giraffe keeper; Julie Hartell-DeNardo, former Zoological Manager; Alan Foster, Contact Yard relief keeper; Chelsea Williams, Contact Yard floating keeper; Lisa Clifton-Bumpass, volunteer training consultant; and the Contact Yard interns, volunteers, and Teen Wildlife Guides for their help and guidance. All photographs were taken by Elizabeth Abram.

Author contact information: virginia@oaklandzoo.org; 510-632-9525 ext. 206
Oakland Zoo, 9777 Golf Links Rd., Oakland, CA 94605

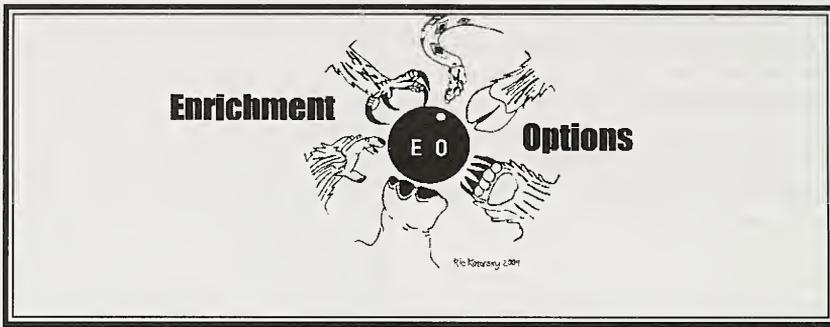
AZK Behavioral Husbandry Committee Comments

(by Kim Kezer and Jay Pratte, Training Tales Column Editors)

Is it worth the time to invest in training an animal that can be easily restrained for a procedure? Yes it is! This project demonstrates how addressing this need will benefit the animal by reducing stress during handling, increasing safety for both staff and animal in addition to providing routine handling in a positive manner. Animal welfare has become an integral part of animal care in AZA facilities and training the goats for voluntary hoof-trims fits in nicely with this mindset.

Virginia has nicely pointed out that projects like this one provide new keepers the opportunity to learn how to train an animal using operant conditioning, revise training plans as needed, and learn new skills to achieve training goals. For the more experienced keeper it provides an opportunity to mentor new keepers and share your experiences.

We would like to thank you for submitting to Training Tales. The approach you have taken with Gaylord can be applied to many species. Sharing this will inspire other trainers to use similar techniques. Great job!!!



EO Editors -

Julie Hartell-DeNardo, Saint Louis, MO and Ric Kotarsky, Tulsa Zoo & Living Museum

Using Plants for Enrichment

Most animals in the wild have an intimate relationship with the plants in their natural habitats. Plant material can be a food source, shelter, nesting material, locomotive avenue, visual or protective barrier, medicinal aide, scent-marking tool or vehicle for play. Many plants rely on and encourage animals to feed from them to distribute seeds and pollen. Some are protected from excessive browsing with adaptations, including thorns, bitter taste and toxic properties. Wild animals may have the benefit of parental instruction and/or spend their entire lives learning how to use the plants found in their habitats.

Plants can be one of the most effective tools available to increase complexity in an otherwise “sterile” captive environment. Plants can soften the look of an enclosure, provide arboreal opportunities, provide shelter, food, visual barriers, olfactory stimulation, nesting materials and toys. For captive animals that do not have the benefit of parental or peer instruction, it is critical that animal caretakers recognize the benefits and risks associated with the use of different plants. Careful consideration of the types of plants placed within the reach of captive animals can minimize the risks while maximizing the many benefits plants can provide.

AAZK Members now have a wonderful resource on both browse plants to utilize in enrichment schemes and also toxic plants to avoid as potential threats to animals in their collections. Where do you find this great information? Just click on the AAZK website (www.aazk.org) and then click on the Member’s Only Section. The lists of both browse and toxic plants may be found and downloaded from the “Resources” menu on the left side of the page. Remember, in order to access this and all the other resources in the Member’s Only section you need to have set up an account there and have access approved by Administrative Offices. Only currently active AAZK members are allowed access to this private section of the website.

On the Browse Plant list you will find there, you may see the same plant listed as both a toxic plant and as a browse plant depending on the stage of the plant’s life, the part of the plant used and the animals and their condition that are being exposed to it. To determine which list to place a plant on for your zoo, please seek the guidance of support staff from various departments in your zoo and always follow established protocols to minimize risks when implementing any enrichment.

The plants included in the Toxic Plant list have known physical or chemical properties that can be harmful to animals. The list is printed twice: alphabetically by scientific name and then by common name and may include the known hazard in the comments column. Some plants may be tolerated by some animal species but be hazardous to others. Additionally, some of these plants may be medicinal or benign in small quantities but become toxic with exposure over time or in larger quantities.

Caution should be exercised when using any of these plants in or around animal enclosures or public areas where visitors may be able to throw plant material into exhibits. The expertise of available nutritionists, veterinarians and horticulturists should be used to minimize the risks of these potentially toxic plants.

Browse and Toxic Plant Lists were compiled by the late Lee Houts, formerly of the Folsom City Zoo Sanctuary, Folsom, CA who served as Chair of the AAZK Enrichment Committee and for whom the Lee Houts Excellence in Enrichment Award is named.

Browse and Toxic Plant Lists were reviewed by: Terry Goureau, Omaha's Henry Doorly Zoo, Omaha, NE; Association of Zoological Horticulture (AZH).

Call for Enrichment Papers

You could be the next author published in the Enrichment Options Column

Have you considered writing a paper for the Enrichment Options Column before? If so now is the time to submit your article. If not, you might want to start considering now as there are many benefits to getting published in the AAZK Forum's Enrichment Options Column, for example:

- **Resumé Building:** Publications noted on your resumé can help to build your professional background and demonstrate your dedication to the field of zookeeping.
- **Networking:** By publishing an article and promoting the sharing of knowledge with your peers you open the door to more networking possibilities. Keepers from other zoos may contact you to get further information regarding your article; you might meet someone at a conference or other zoo-related event that read your article and thereby will have instant conversation starter; even people within your institution are likely to come discuss your accomplishment and ideas.
- **Chance for a free registration to the AAZK National Conference:** Yes, that's right – FREE registration!! The AAZK Behavioral Husbandry Committee will select one paper published in the Enrichment Options or Training Tales Column to win a free registration to the AAZK National Conference – get your papers in now to be included in the chance for registration to San Diego. The winning author will be notified by June. 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. The winning registration is non-transferable and has no-cash value, so if the chosen author is unable to utilize the free registration another author will be selected by the Committee.

These are just a few benefits of publishing a paper in the Enrichment Options Column. So, now some of you might be asking: what types of articles are we looking for? All enrichment-related articles are encouraged. One great thing about enrichment is variability – this also applies to enrichment articles!

Idea Descriptions & Blue-Prints: Articles describing in detail how to make enrichment from various tools and supplies in-house. Every institution has some great in-house enrichment ideas that can easily (and erroneously) be assumed all other zoos know how to build, use, design, create, etc. Some folks have great creative and building skills that allow them to see new uses for items donated or laying around. Don't take for granted your common in-house ideas - we haven't all seen it all – share your ideas!

New Uses: Articles describing new uses for previous ideas. Coming up with a new application (whether it be a different species, a different presentation style, or other variable) can be a great way to get the most out of any enrichment idea. So even if the idea seems common, if the application is unique we want to hear about it – share your ideas!!

Species: Articles on any and all species are welcome in the Enrichment Options Column. We are interested in enrichment for all taxa, from ants to elephants - share your ideas!!!

Behavioral Studies: Articles with graphs, data and charts describing in detail the results of enrichment applications. These articles help to promote the science behind successful enrichment and can be very useful in promoting enrichment techniques within organizations. When working with animals, every data set is unique and those differences can garner very useful information, so even if your idea is similar to one already published, the data is new and whether it is similar or different it can still provide valuable information – share your ideas!!!!

Length: Long articles, short articles, articles with lots of pictures, articles with lots of graphs, articles with lots of references, articles with none, etc – share your ideas!!!!!!

These are just a few ideas of the types of enrichment articles we are looking for. Have a type of idea not listed? Send it in. Questions about how to write an article, what to submit, or how to get started – just contact us and we'd be happy to help out. We are looking forward to all the enrichment creativity each of you has to offer (I'm particularly looking forward to editing an article on insect enrichment, hope someone sends one in soon). ~Julie Hartell-DeNardo, Co-Coordinator for the Enrichment Options Column, Saint Louis Zoo, St. Louis, MO.

Chance to Win Free Conference 2011 Registration Offered

Get your training and enrichment articles into the Enrichment Options & Training Tails Column editors to be considered for a complementary registration to the 2011 AAZK National Conference in San Diego.

The AAZK Behavioral Husbandry Committee will choose one article from those published between July 2010 through May 2011 in the *Animal Keepers' Forum* Enrichment Options or Training Tails columns to be awarded a FREE 2011 conference registration.

The winning author will be notified by June 2011. Only one gratis conference 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. The winning registration is non-transferable and has no cash value, so if the chosen author is unable to utilize the free registration another author will be selected by the Committee.

Email your articles to: akfeditor@zk.kscoxmail.com. Submissions should be submitted in MS Word only. Photos should be 300 dpi jpgs or tifs attached to the email. Be sure to include proper photo credit for each photo and suggested captions are appreciated.

Submit now for your chance to win a free Conference 2011 Registration!

International Elephant Foundation: Playing a key role in elephant conservation

*By Martha Fischer, Curator of Mammals/Ungulates and Elephants, Saint Louis Zoo
Director, Saint Louis Zoo WildCare Institute Center for Conservation in the Horn of Africa
Vice-President, International Elephant Foundation Board of Directors
Saint Louis Zoo, 1 Government Drive, St. Louis, Missouri 63110 fischer@stlzoo.org*

Every day someone sees or perhaps touches an elephant and gains a greater understanding of the animal he or she has known only from picture books and video. Every day young and old alike marvel at an elephant's strength and agility, its intelligence and personality, and its ability to make you gasp and laugh. Every day the work to save elephant habitat helps in conserving many other kinds of wildlife. The popular appeal of elephants is so great that attention and efforts garnered to save this flagship species benefits many endangered animals.

The International Elephant Foundation (IEF) is dedicated to saving African and Asian Elephants by providing funds and scientific expertise to support elephant research and conservation programs worldwide. IEF is a non-profit organization formed in 1998 to promote the conservation of African and Asian elephants through habitat protection, scientific investigation, education and improvements in zoo elephant care. Its mission is to support and operate elephant conservation and education programs both in managed facilities and in the wild, with emphasis on management, protection and scientific research.

Since its inception in 1998, IEF and its contributing supporters have generated more than 1.8 million dollars to many different *in situ* and *ex situ* elephant research and conservation projects and programs around the world. Most of the funds raised by IEF go directly into elephant conservation and research programs.

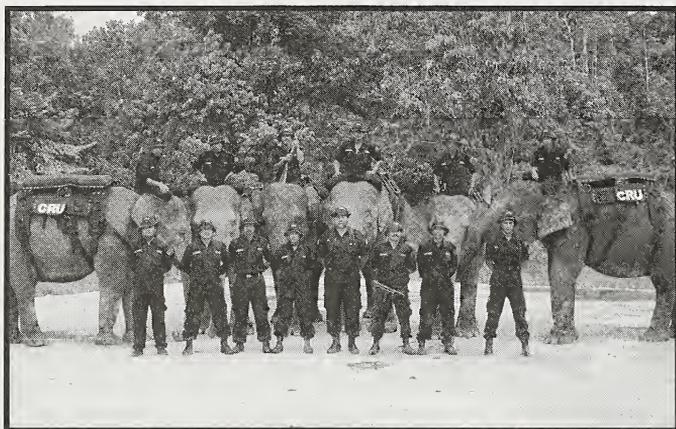
In September of 2004, IEF and the Association of Zoos and Aquariums (AZA) signed a Memorandum of Understanding to work together to conserve elephants. This memorandum means that individual AZA zoos no longer have to develop conservation projects from "scratch" but can join into partnerships with other zoos and elephant care organizations and support established and ongoing projects. Institutions that provide general funds to IEF are considered as supporters of all of IEF's projects and programs. This partnership between IEF and AZA has made it possible for zoos to pool their resources together to support significant conservation projects in Africa and Asia.

IEF is working around the world to conserve elephants. Below are some of the key projects and activities supported by IEF:

Conservation Response Units, Sumatra

The long-term conservation of the elephant in Sumatra requires that elephants and people coexist with minimal conflict, otherwise demands for the removal of elephants will be politically difficult to ignore, resulting ultimately in the depletion of elephant populations on the island. The Conservation Response Unit (CRU) concept is founded on the belief that diversity is only secure when diverse conservation strategies are employed. The CRU model utilizes once neglected captive elephants and their mahouts for direct field-based conservation interventions to support the conservation of wild elephants and their habitat, and achieve positive outcomes for both elephants and people.

By creating this link, and ensuring that these elephants are seen as an important resource and doing positive deeds, it is expected that local communities, decision-makers and other stakeholders will recognize their contribution and hopefully focus greater attention on protecting Sumatran elephants (*Elephas maximus sumatranus*), in the wild and in captivity.



Sumatran Conservation Response Units

(Photo courtesy of the International Elephant Foundation)

The CRU teams are composed of 14 captive elephants from two ECCs (Aceh and Seblat) and 14 of their mahouts, 14 government forest rangers, and three conservation officers spread over three CRU posts placed in targeted working areas. The CRU project has four main objectives:

1. Mitigating human-elephant conflict;
2. Reducing wildlife crime activities in the important elephant habitat through forest patrol and monitoring;

3. Raising awareness among local people of the importance of conserving elephants and their habitat;

4. Establishing community-based ecotourism to ensure long-term CRU financial sustainability. Captive elephants play an important role by providing transportation during forest monitoring patrol activities, as a tool for gaining local community interest during awareness events, and driving away crop raiding wild elephants should conflict incidents arise.

Mahouts, as part of the CRU team, not only take care of the elephants but also are involved in all CRU activities and have gained training in wildlife observation techniques and basic use of navigation devices and mapping. Most of the CRU team members have little educational background, yet through a series of capacity building activities have been trained in assessing and selecting priority areas for CRU activities and field patrols, operating hand held GPS units, filling in standardized data-sheets for forest patrolling and conducting HEC assessments.

Anti-Poaching Team, Kenya

In Kenya, the majority of the wildlife exists outside of the country's government protected areas and wildlife numbers continue to decline. If this trend continues unchecked the result will be fragmented, isolated remnant populations in only a handful of protected national parks and reserves, and the potential for extinction of some species in the wild.

The African elephant (*Loxodonta africana*) is one such threatened species that is at risk of further decline outside of protected areas. The long-term survival of elephants in Kenya is thus inextricably linked to the support of local communities that share the land with this species. Involving local communities in the ongoing work to protect and monitor elephants and raising awareness of the benefits of elephant conservation are critical prerequisites for success.

In 2004 the Northern Rangelands Trust (NRT) was established by communities and other stakeholders who recognized a need for an umbrella organization that would assist communities to use biodiversity conservation and improved environmental management as a means of improving and diversifying livelihoods. The role of NRT is to develop the capacity and self-sufficiency of its constituent community organizations in biodiversity conservation, natural resource management and natural resource-based enterprises. As neighboring communities partner together in NRT and as the total land devoted to biodiversity conservation in northern Kenya is expanded, migratory corridors are being re-established and migratory species, such as the elephant, are greatly benefiting.

The issue of instability remains the single biggest pressure on conservation efforts in this region. In

the last six years, poaching and other security-related incidents in northern Kenya have decreased largely because of the development of NRT and its conservancies, as well as the strong collaboration between NRT communities. However, poaching still remains a threat in this region, due to the large number of illegal firearms in the hands of local people, and relative proximity to instable countries on the northern and eastern borders of Kenya. There is an urgent need to increase capacity for the current anti-poaching and wildlife monitoring network in order to maintain and further reduce poaching and other related issues for the people and for elephants and other wildlife in this vast area.

IEF and NRT, with support from the United States Fish and Wildlife Service, have partnered to develop a Joint Conservancy Anti-Poaching Team that will most certainly greatly enhance the wildlife protection and monitoring in the region, first and foremost, by deterring incidents of poaching from occurring and, when unfortunate incidents of poaching do arise within NRT communities, by providing a dedicated team of skilled anti-poaching officers immediately available to respond to and resolve these issues.

Conservation Along Waterways, Uganda

The Queen Elizabeth National Park (QENP) in Uganda is a Biosphere Reserve and is inhabited by people and wildlife. It is bordered on its western boundary by Lake Edward. The southern sector of QENP forms the largest and most significant connection to the Democratic Republic of Congo's Parc National des Virunga and provides a corridor for elephants and other wildlife. There are 11 fishing villages all of which connect to the region's main roads that pass straight through QENP. With legal access across the park and now improved communications (mobile phones), poachers are able to monitor ranger movements along the roads and in their ranger posts.

The Waterways project has reduced poaching capabilities (policing of the bushmeat trade, ivory trafficking and illegal fishing) in the Southern Queen Elizabeth Conservation Area and is protecting wildlife and their habitats through facilitating waterborne law enforcement, research and community conservation. The installation of ranger boat stations and the use of boats in QENP has had an enormous impact on the ability of law enforcement to reverse QENP's poaching problem.

Rangers now have the ability to be deployed by boat eliminating long driving distances. Rangers can also be deployed anywhere along the shoreline, silently and without detection. In addition many poachers and wildlife traffickers are thought to be moving dried meat and animals completely unchallenged through the waterways where they then liaise with vehicles. Rangers in boats have decreased this illegal activity forcing poachers to travel the lengthy and hazardous land route. The Waterways project has initiated a 'marine operations' capacity building program, providing the means by which wildlife monitoring and research can take place, and has initiated 'Lake Rescue' as a new community conservation program.



African elephant herd enjoy a river stopover in Kenya.

(Photo: Martha Fisher)

Elephant Endotheliotropic Herpes Virus Research

Juvenile elephants may be affected by many conditions that can influence overall health and survivability, including Elephant Endotheliotropic Herpes Virus (EEHV). IEF is supporting EEHV research through annual core support of operations of the National Elephant Herpes Lab based at the Smithsonian's National Zoo, as well as through support of various EEHV research projects seeking to increase the knowledge about EEHV and further develop treatment of it. IEF hosts an

EEHV workshop annually to convene EEHV and human herpes researchers together with elephant veterinarians and managers to further the knowledge and treatment of EEHV.

Granting Program

In addition to its focal field programs and research projects described above, IEF manages a small granting program that receives proposals from elephant conservationists and researchers once per year. Through this program, projects and programs are funded around the world and since its inception in 1998; IEF and its contributing supporters have generated more than 1.8 million dollars to many different *in situ* and *ex situ* elephant research and conservation projects and programs.

Husbandry Resource Guide

IEF has taken a lead role in advancing the quality of care of elephants in human care by compiling and publishing the Elephant Husbandry Resource Guide which reflects the best practices and accepted industry standards across a wide spectrum of management styles and facilities. This Guide was compiled by a broad and diverse team of elephant experts including keepers, veterinarians, researchers, reproductive specialists and behaviorists, and has been made available to every known elephant care facility in the world. To further its goal of building capacity for elephant care worldwide, IEF provides a scholarship annually to one elephant professional to support his/her participation in the AZA Principles of Elephant Management course.

For more information about the International Elephant Foundation, please visit our website at www.elephantconservation.org. You can also find us on Facebook at <http://www.facebook.com/home.php?#!/pages/International-Elephant-Foundation/108627465679?ref=ts>

Of course, none of this would be possible without the generous support of people and organizations like yours that have a concern for the future of elephants. We deeply appreciate the exceptional commitment to elephant conservation by the following zoos and zoo organizations that supported the International Elephant Foundation from January 2009 until August 2010:

Africam Safari; African lion Safari; Albuquerque Biological Park; Audubon Zoo; Blank Park Zoo; Brec's Baton Rouge Zoo; Baton Rouge AAZK; Brookfield Zoo; Busch Gardens - Tampa Bay; Calgary Zoo; Cameron Park Zoo; Central Florida Zoo; Cheyenne Mountain Zoo; Cincinnati Zoo; Cleveland Metroparks Zoo; Columbus Zoo; Dallas Zoo; Denver Zoo; Dickerson Park Zoo; Disney's Animal Kingdom; Elephant Managers Association; Forth Worth Zoo; Greenville Zoo; Have Trunk Will Travel; Houston Zoo; Indianapolis Zoo; Jacksonville Zoo; Lee Richardson Zoo; Lion Country Safari; Little Rock Zoo; Maryland Zoo in Baltimore; Memphis Zoo; Miami Metrozoo; Milwaukee County Zoo; Nashville Zoo; Niabi Zoo; North Carolina Zoo; Oklahoma City Zoo AAZK Chapter; Omaha's Henry Doorly Zoo; Oregon Zoo; Philadelphia Zoo; Pittsburgh Zoo; Point Defiance Zoo & Aquarium; Riverbanks Zoo; Roger Williams Park Zoo; Rosamond Gifford Zoo at Burnet Park; Saint Louis Zoo; San Antonio Zoo; San Diego Zoo and Wild Animal Park; Santa Ana Zoo; Santa Barbara Zoo; Sedgwick County Zoo; Seneca Park Zoo; Six Flags Discovery Kingdom; Toledo Zoo; Toronto Zoo; Tulsa Chapter of AAZK; Utah's Hogle Zoo; Wildlife Safari; Woodland Park Zoo; Zoo Atlanta; Zoo de Granby; Valley Zoo.



Chapter News. . . .

Greater Kansas City Chapter of AAZK

The Greater Kansas City Chapter of AAZK held its annual Holiday Party/Meeting this past January and elected new officers for 2011. New Officers are:

President.....Jacque Blessington
Vice-President.....Erin Cahill Black
Treasurer.....Rebecca Prewitt
Secretary..... Lindsay Jaquier.



We are in full swing preparing for BFR on April 30, 2011. There are many fundraisers that our Chapter has planned this year. At Pints for Penguins and the annual Kiss & Tails we sold animal art. We have several *On the Border* fundraisers planned as well, and are looking into adding other restaurants to our list.

~ Pamela Trueblood, Liaison

Greater Sac AAZK Chapter

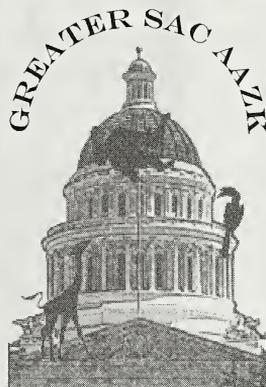
During the past year, our Chapter has donated \$2,456.00 to conservation groups including Ape Action Africa. Activities during the year have included Enrichment Days-Membership Night (June 9), Volunteer Night (August 4), Flamingo Flocking (a fundraiser), and California Celebration (May 7 and there will be an art theme this year).

We have also established an Incentive Award for member's participation in Chapter activities - the recipient receives \$100 that they can use towards conference attendance expenses, donate to a charity or use for enrichment at the zoo.

We have also decided to raise our local Chapter Professional Member dues to \$10. Local dues will remain \$5.00 annually for Affiliate Members.

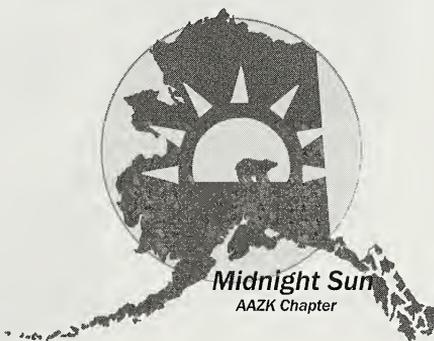
For National Zoo Keeper Week (July 17-23, 2011) we will be putting Keeper Bios up on our website and placing signs around the zoo promoting this event.

~ Heather Gabel,
Secretary



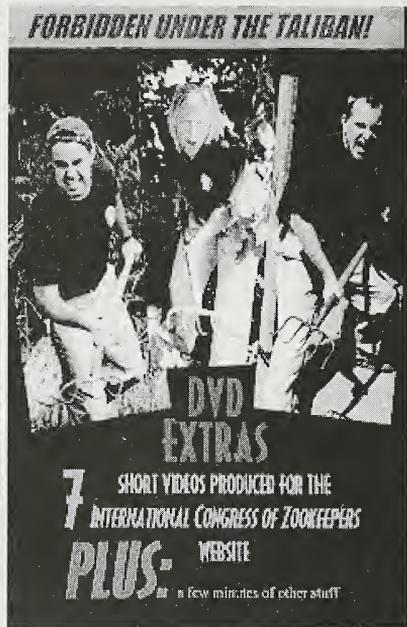
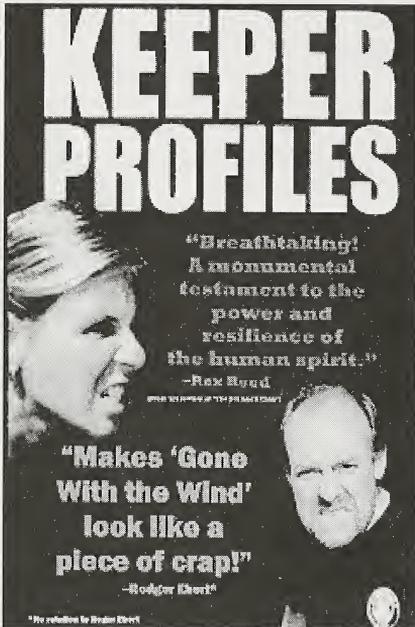
Midnight Sun AAZK Chapter

The Midnight Sun AAZK Chapter, located at the Alaska Zoo in Anchorage, AK adopted their logo in October of 2010. It was designed by Chantel Lillard.



What Has Your AAZK Chapter Been Up To?

Why not share your fundraising ideas, Chapter events and programs and those great logos with all AAZK members through Chapter News in *AKF*? Send in your Chapter News, logos, photos, etc. for inclusion in upcoming issues of *Animal Keepers' Forum*. You can send to akfeditor@zk.kscoxmail.com. Please send news items in MS Word format only. Logos and photos should be submitted as individual jpg or tif files attached to the above email. If you send a logo be sure to include information on who designed it and when it was adopted by your Chapter. If sending photos, please include photo credit and a suggested caption. ~ *AKF Editor*



You've Heard About It!
You've been looking for it!
Here it is!

Keeper Profiles - The hilarious DVD that combines the original film clips that dissect the personalities of your fellow keepers with outtakes and other footage. Produced by the Southern Ontario AAZK Chapter, all profits from the sale of this DVD go to support AAZK, Inc. and its projects and programs.

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 (includes shipping and handling)
 \$17.00 International
 (includes shipping and handling)

Order from the AAZK website at www.aazk.org (under Shop on the homepage) OR purchase with Visa or Mastercard by calling the AAZK Administrative Offices at 785-273-9149.

Attention AAZK Members!

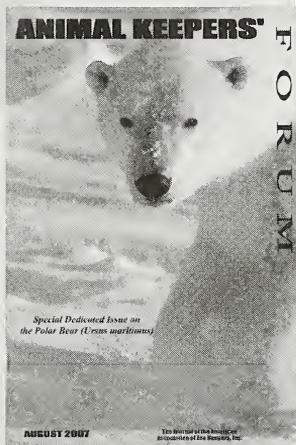
AKF Dedicated Issue Combo Pack Sale

Get a combo pack of all five dedicated issues of the *Animal Keepers' Forum* for just \$30 if you are a current AAZK member. Non-member price for the Combo Pack is \$60. You'll get issues on: Care and Management of Geriatric Animals [2009], Crisis Management, [2007], Polar Bears [2007], Cheetahs [2005], and Avian Husbandry [2010]. That's a savings of 40% over buying the issues individually. These are great issues so purchase your Combo Pack today. Orders from Canada and overseas require an additional \$10 in shipping. Domestic orders include shipping cost.

You may order this Combo Pack for a limited time by going to the AAZK website at www.aazk.org. Click on "Shop" from the homepage. Or you may order by calling the AAZK Administrative Office at 785-273-9149 for purchases with a Mastercard or Visa.

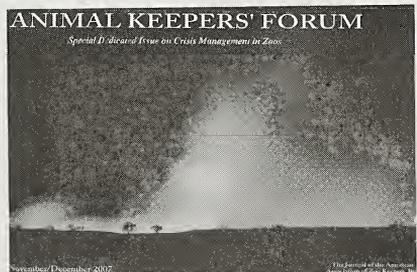
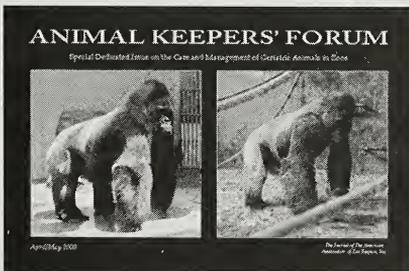


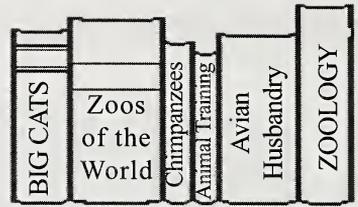
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American Zoos During the Depression: A New Deal for Animals

By Jesse C. Donahue and Erik K. Trump © 2010

McFarland & Company, Inc., Publishers, Box 611, Jefferson, North Carolina 28640

ISBN 978-0-7864-4963-7

Softcover, 227 pgs.

Review by Brett Banner

*The Farmyard at Stone Mountain Park
Stone Mountain, Georgia*

When we're all grown up and out in the world, it's hard to recall when in our youth we became aware of the famous events that occurred before we entered the picture. Can you remember exactly when you first understood that there were times long past spiced with happenings like the fall of the Roman Empire, or the Norman Conquest, or the American Revolution?

The more recent past we may have learned from our parents or grandparents. One of the first encounters I had with the Great Depression came on a late 1960s childhood trip to Brookfield Zoo near our family's Chicago home. I read in the zoo's guidebook that many of the buildings at the park were built "by the WPA." What in blazes does that mean, I asked my father. Dad was 10 years old in 1929 when the Stock Market crashed, so from him I first became acquainted with the Works Progress Administration—along with soup kitchens, nickel picture shows, and whatever else Dad recalled from the hard times of his boyhood.

As such, I was excited to learn about the book *American Zoos During the Depression: A New Deal for Animals* by Jesse C. Donahue and Erik K. Trump, two political science professors at Saginaw Valley State University in Michigan. These gentlemen have produced a book that is important and enlightening in places, but their presentation could have been better.

The well-crafted parts I'll get to shortly, but first let me say something of the demerits. For one thing, this book needed better editing. On pages 19-20, the authors tell us that the Central Park Zoo in New York City was designed "in just 16 days." Interesting. Then on page 25 they write of the Central Park Zoo that "it took only 16 days to design the zoo and eight months to build it." Okay. Just two paragraphs later the reader learns of the Central Park Zoo's opening ceremonies "only eight months after construction had begun." I got it, this was a rush job. Then on page 83 comes "The Central Park Zoo opened to the public just eight months after construction began." Seriously, guys, I get it! Finally, on page 193, former New York City mayor Ed Koch is quoted as remarking that the Central Park Zoo took 16 days to design and eight months to build. I believe I heard that before. This isn't the only example of gross repetition; the authors note that during the Depression admission to most zoos was free more times than I cared to count.

Often when the editing of a book is uneven, this is reflected in the index. That's certainly the case here. On pages 20-21 there is a paragraph giving significant information on the Cincinnati Zoo. If you go to the index and look under Cincinnati Zoo, however, those pages aren't listed. With this in mind, occasionally as I read, I'd flip to the back of the book to see if the zoo mentioned on that particular page was so noted in the index. Several times it wasn't.

There are also a few errors of fact. On two pages the date of the Animal Welfare Act is given as 1970. Actually, the legislation was passed in 1966. It's true that the Act was amended in 1970, but it's also

been amended several times since then, so the 1970 date isn't significant. If the wrong date appeared once I'd write it off as a typographical error, which reviewers should be kind enough not to mention, but this shouldn't have slipped through twice.

None of these criticisms is to deny that *American Zoos During the Depression* has much to admire. For instance, there are some charming biographical details. We're told that longtime National Zoo director William Mann would, upon seeing a car in the zoo's parking lot bearing a license plate of his home state of Montana, scour the grounds looking for the owner to invite him to his home for dinner. About such things, his wife Lucile apparently was very understanding. Another fine part of this book is Chapter 4, which reptile keepers will find of great interest. This section deftly describes the efforts of zoo herpetologists to construct reasonable accommodations for snakes, as well as their work to combat public disgust towards these creatures. The information given on efforts to develop antivenin, and the importance of zoos as storage centers for these life-saving substances, is notable.

Since Donahue and Trump are political scientists, we would expect this work to be strong in its coverage of human struggles, and largely it is. One section poignantly describes the nexus between zoos and the American tragedy we've only recently addressed, namely racism. Here, the "n word" makes a disturbing appearance, but the authors deserve a nod for not whitewashing this unfortunate history. The reader is presented with excerpts from letters written to New Orleans officials complaining loudly about the presence of visitors of African descent in the Audubon Park Zoo. "(W)e don't want our children rubbing elbows with N----s," wrote the head of a women's group to the city's mayor, "so get to work and put a stop to this." (She did not, of course, use the dashes that I have.) One of the duties of Audubon Zoo employees of the era was to keep black visitors from sitting on the park's benches. Reading details such as this is a strong reminder of how much the Civil Rights movement had to overcome.

A few occurrences at specific zoos are elucidated in great detail. For instance, the authors spend almost nine pages discussing a funding struggle at the St. Louis Zoo. After World War I, voters in that town approved a property tax which specified that two cents of every hundred dollars of assessed value would fund operation of the zoo. Within 10 years, politicians in that town tried to withhold some of this money from the zoo for other municipal purposes. As so often happens in America, a lawsuit arose out of this conflict, one that went all the way to the Missouri Supreme Court. And this leads me to another quibble. One would assume that in a scholarly book with nearly 600 endnotes—and written by political scientists to boot—that the legal citation for the case would be provided. Instead we are referred to 1927 articles in the St. Louis papers, which is a secondary source, and one more difficult for most of us to access than an appellate case report if we wish to learn more. (For the record, the case was *State ex rel. Zoological Board of Control. v. St. Louis*, 1 S.W.2d 1021 (Mo. 1928).

One last point--and this is obviously no fault of the authors. I received a review copy of the book at no charge, but I was curious how much the volume would cost someone not so fortunate. So I clicked on amazon.com and learned that a new copy would set you back 55 dollars. Even on Kindle it's 44 bucks—and we're talking about a 227 page paperback. For contrast, at the same time I read *American Zoos and the Depression*, my personal read was another new book on American history, *Madison and Jefferson*, a very scholarly joint biography of these two greats. You can get that book—new, in hardcover, over 800 pages long -- on amazon.com for around \$22.40, much less than half what you'd pay for Donahue and Trump's slimmer, softbound tome (site checked 16 Jan 2011). I'm guessing that the exorbitant price for *American Zoos During the Depression* materialized because the publisher deemed this a textbook, and of course textbooks are typically purchased by captive audiences. Your college professor insists you buy it or you will not prosper in his class and so out of your wallet pops an amount far greater than the free market would normally dictate. It's maddening. It's also a bit ironic—during the toughest economic times since the Great Depression, the publisher is charging an inflated price for a book on the Depression.

A Second Look at Books from the Past

*a review by Richard Hahn, Executive Director
Catoctin Wildlife Preserve & Zoo, Thurmont, MD*

Two books from the zoological past still worth looking into are *In the Steps of The Great American Zoologist, William Temple Hornaday* (1966) by John Ripley Forbes (1913 - 2006) and *The American Natural History* (1904) by William T. Hornaday (1854 - 1937).

The first book was published over 50 years ago and is targeted for young readers. The second was written over 100 years ago and was an encyclopedia of the latest knowledge of the major orders of American animals for its time. Some statements are grossly inadequate by today's knowledge but still very apropos for understanding the evolution of our profession and zoological institutions today.

The authors had similar interests, education and vocations. Furthermore, their lifespans overlapped for 22 years in which they lived and at least once met each other in Stanford, CT.

Hornaday started his career as a taxidermist and collector of specimens for the Ward's Establishment later to become Ward's Scientific Supply Co. On one of his first trips abroad to collect specimens he ended up in India in search of specimens, specifically gavials. In two months he shot and prepared the cadavers of 26 gavials. Notably, Bronx Zoo retains a significant interest in this species to this day.

His next position was at the Smithsonian Museum where he pioneered the panoramic display technique of mounted specimens surrounded with ecologically appropriate murals and other natural history embellishments. It took 10 years before other museums began to embrace his new way to display specimens. Some things never change.

During the first 10 years of Hornaday's young adulthood from 1865 to 1877, a reputed five and one half million bison were exterminated, over 50,000 for their salted tongues alone. One of the first tasks he performed was to go out to the surviving herds at a time when they were thought to be only several hundred left and shoot some of them for accession into the Smithsonian collection. Six of them were full mounted in a panoramic naturalized display. As a result of a unique set of circumstances from the grave, they are still on display to this day.

Hornaday was influential in the inception of several of the most prestigious and meaningful institutions still with us today including the Smithsonian's National Zoo and the New York Zoological Society, the precursor of the Wildlife Conservation Society and the governing body of all the New York zoos, except Staten Island, including the Bronx Zoo where for 30 years he was its first director. Can you imagine opening a zoological park with 843 specimens of 157 species today?

Forbes was the founder of the Wm. T. Hornaday Foundation which became the Natural Science for Youth Foundation, later known as the National Foundation for Junior Museums. Ripley is credited with founding the junior museum concept (read Children's Museum). He is credited with assisting in the establishment of more than 200 Junior Science Museums across the United States, among them is the Tallahassee Museum. Although all but forgotten, it was Forbes who first blended zoos with natural history and science by creating interactive learning spaces for young audiences – a man ahead of his time.

The first book not only introduces the reader to Hornaday and his exploits, it also has about 20 pages dedicated to nature projects that children could do pretty much on their own.

This book goes into great detail about the accomplishments of Hornaday and the new Bronx Zoo in the new area of wildlife conservation. They are myriad, forward thinking and pretty remarkable

considering that they happened over 100 years ago. Sometimes you gotta wonder, “What takes the human race so long to get it right?”

The second tome is 450 pages in length. Although called the *American Natural History* it starts out with primates, including gorillas, chimpanzees and orangutans and marches boldly into all the known orders of animal life through fishes with only an occasional foray into non-American fauna.

The best and worst thing about this book is that now, at almost 110 years old, it is amazingly insightful in some areas and woefully lacking in others. Just like the books that are still being written and published today.

(Editor's Note: Since Richard did not include any information on the availability of either of these volumes, I checked them out on amazon.com and found the information included below. Hopefully this might help those interested in trying to track down a copy. Ed.)

In the Steps of The Great American Zoologist, William T. Hornaday

By John Ripley Forbes

ISBN#978-0871310101

M. Evans & Company, Inc., 216 E. 49th St., New York, NY 10017-1502

Hardcover \$24.95 (limited copies available)

The American Natural History: a Foundation of Useful Knowledge of Higher Animals (V. 1) [1914]

By William T. Hornaday

ISBN#978-1112608889

Cornell University Press, PO Box 6525, Ithaca, NY 14851-6525

Paperback 450 pgs. \$23.99

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Managing a South American Passerine Population in the Largest Spherical Rainforest in the World

By Victoria McCloskey, Biologist
California Academy of Sciences, Steinhart Aquarium
55 Music Concourse Drive, San Francisco, CA, USA

The rainforest exhibit at the California Academy of Sciences is a free-flight, mixed-species display that is a 90-foot diameter glass sphere. The space includes one large open-topped pool with live fish, two planted beds, an elevator system, and a ramp that extends from level one to level three. The birds are exhibited along with live butterflies, so the exhibit itself is a USDA containment room. The birds have access to nearly everything within the glass containment walls.

The exhibit is staffed by two aviculturists, three herpetologists, two horticulturists, three aquarists, and two generalists. Each level boasts numerous terrariums and fish tanks that are serviced daily before opening to the public.

We have overcome a myriad of challenges since opening this exhibit in September of 2008. In addition to the stresses of introducing a variety of species at one time, biologists had to contend with a 360-degree glass sphere, feeding free-flying birds and butterflies, and navigating a 100,000-gallon, open-topped freshwater fish tank that houses bird-eating fish such as pacu (*Colossoma macropomum*), arawana (*Osteoglossum bicirrhosum*), and arapaima (*Arapaima gigas*).

Introductions

Introducing a number of animals all at once is always a dicey proposition. The stress of introducing approximately 35 individuals of different species was only compounded by having to release them into a giant glass sphere. This posed the problem of how to minimize injuries from birds accidentally flying into the glass. Many ideas were considered – decals, spray ‘snow’, etc. We finally formalized a plan whereby the entire exterior of the structure would be covered in shade cloth. This was a huge undertaking, as the circumference of the sphere is formidable. We also hung shade cloth in front of the galleries on each level in order to prevent birds from getting ‘lost’ or ‘stuck’ when they were first released. Consequently, on initial release there were no deaths from glass strikes.

Species were housed according to size/compatibility, and howdied in the exhibit for a few days before the doors were left open allowing the birds to venture out at will. The smaller species such as honeycreepers (*Cyanerpes cyaneus*, *Cyanerpes caeruleus*), violaceous euphonias (*Euphonia violacea*), paradise tanagers (*Tangara chilensis*) and opal-rumped tanagers (*Tangara velia*) were released first to give them a chance to establish territory and find safe roosting areas. These were followed by the larger more aggressive species such as silver-beaked tanagers (*Ramphocelus carbo*), red-shouldered tanagers (*Tachyphonus phoenicius*), turquoise tanagers (*Tangara mexicana*) and saffron finches (*Sicalis flaveola*). The last species to be given access was the blue ground dove (*Claravis pretiosa*).

As expected, there were multitudes of dynamics between individuals. We lost a few birds to male/male aggression fairly quickly. The silver-beaked tanager, and surprisingly, the violaceous euphonia males killed the other resident males of their species within days upon release. We also noted immediate aggression between the lone saffron finch and the yellow-green grosbeaks (*Caryothraustes canadensis*). This aggression escalated when five more saffron finches from another facility were introduced at a later date. Unfortunately, when the flock increased from one individual to six, the grosbeaks were targeted directly and had to be removed from the exhibit. We assume color was the instigating factor.

The only ground species that was introduced into the original population was the blue ground dove. This species tends to fly 'up' when startled, and after losing a significant number of individuals to trauma-induced injuries, we returned the remainder of the population to the breeder. Due to limited planted exhibit space, we chose not to pursue introducing any additional ground species.

Feeding

We had to devise a system that would permit not only the passerines access to food on multiple strata, but also the butterflies. Free standing feeders in the ground level planters were inaccessible to the public, and fairly easy for biologists and birds to access. More challenging however was how to have food and nectar available on the two upper levels. There is no floor space on these levels that the public does not have access to, therefore we created feeders that would hang from the railings over open space. The feeders were thin metal rods with plate-sized metal rings on the end. These were welded to the railings on levels 2 and 3, and were able to swing out and back for access. A locking pin holds them in place so that they remain stationary until a biologist changes the plates.



Nectar Feeders

Our original idea was to be able to set the plates inside the rings. The drawback to this arrangement was that the plates occasionally got knocked out and fell. It didn't take us long to figure out that plates and nectar containers would have to be plastic. After trying a few different prototypes, we found that a plate with a locking mechanism was the best bet, so we changed the holder to a flat disc with a central hole. The food plates have central plastic pins that lock them onto the discs with a quick twist. We also found an ideal length for the metal rod – long enough that the public could not lean over and reach the food, but short enough that stability was not compromised.

The birds are fed a fresh fruit and vegetable mixture along with pellet and softbill diet. Insects are offered daily - mealworms, phoenix worms or waxworms. As the exhibit is now inhabited by nuisance ants that seem to be attracted to crickets, these insects are no longer on the menu. Nectar is offered in the morning, oranges in the afternoon. The butterflies quickly 'learned' where the nectar stations were. Finding a container that would hold an appropriate amount of nectar, but was not so deep that the butterflies would drown was an ongoing concern for the biologists. After many different designs we finally concocted one that holds a sufficient amount of liquid and offers the butterflies an 'island' to set upon so that they don't get stuck. We now use plastic condiment cups and plastic petri dishes. The petri dishes float on top of the nectar and provide the butterflies an opportunity to perch as they're feeding. Multiple cups at each station cut down on bird/bird and bird/butterfly altercations.

Inherent Challenges in Mixed Species Exhibits

There are always issues with interspecies interactions in mixed exhibits. The rainforest exhibit boasts a 100,000-gallon, open-topped tank filled with predatory Amazonian species such as arawana, pacu, and arapaima. These species strike at low flying birds or butterflies from the water's surface. After the initial bird population stabilized and became habituated to the space, we found that most of the 'fish-related fatalities' were the result of altercations between individual birds. Birds that are being chased or are entangled with one another cannot adequately maneuver close to the water's surface. The birds are not just prey however, they are also predators. Approximately 100 butterflies are

released into the rainforest every week. Even with supplemental insects offered daily, meals on wings are hard to resist. While enriching for the birds, butterflies can be pricey. We found butterfly decimation most notably occurred when our larger species of birds (silver-beaked tanagers specifically) had chicks to feed. We now coordinate with our horticulturists so that they can adjust the number of butterflies released when we have parents with chicks.



Heliconus sp. at nectar feeders

Capture and Restraint

A permanent catch cage was set up in order for us to catch birds that needed to be banded or medically evaluated.

This is a stationary cage on the ground level and is a primary feed station. Insects are offered in this cage only to encourage frequent visits. We selected a free-standing cage with a large, side-opening door. The capture method is relatively straight forward; a thin rope tied to the door and a biologist lurking behind a plant. We also use this cage to howdy birds being introduced into the collection. Birds are restrained using paper lunch sacs and clothespins. The paper lunch sacs are optimal, as they do not need to be laundered and can serve as fecal repositories for the hospital. Being able to record weights and band numbers directly on the bags also cuts down on confusion and record keeping when dealing with multiple animals.

Nesting and Breeding

We were surprised, yet pleased to discover that birds were nest building and breeding just weeks after the initial introduction to the exhibit. The birds took advantage of all possible space, even when proximately to the public seemed daunting.

The exhibit contains free-standing terrariums that house a variety of herptiles and invertebrates. The herpetologists were chagrined to discover that birds are thieves, and were stealing all the materials designated for their terrariums to build nests. Changes were made to some terrarium tops after finding birds whose toes and feet were caught up in fibrous straps. The horticulturists were chagrined to discover that birds are thieves, and were stealing all the materials designated for the living walls. These moss-filled living walls were so popular with the euphonias that they forewent the gathering and transport, and just moved in directly. Fabricated cup and dome nests were provided and used intermittently by a few species, but no matter the amount of nesting material supplied, the material of choice appears to be tissue and paper towels discarded by the public.

The silver-beaked tanagers were the first species to successfully raise offspring. So successful in fact, biologists frequently pull the male off-exhibit in order to manage the population. The other species that have produced viable offspring thus far are the blue-gray tanagers and the bananaquits. All other species have exhibited nest building behavior and eggs have been laid by the euphonias and the opal-rumped, turquoise, red-shouldered, and paradise tanagers.

One of the more remarkable behaviors that the biologists noted was the interspecies female/female cooperation when there were no males of the species present. After losing the resident male opal-rumped tanager and two out of three female turquoise tanagers, the remaining opal-rumped and turquoise females proceeded to build a nest together. After completing the nest, they each laid eggs in it and took turns incubating. Sometimes they sat on the nest at the same time, one slightly on top

of the other. We've also seen somewhat of a similar behavior between the three female paradise tanagers. There have been 'shared' nests in which more than one individual has laid her eggs. These eggs were subsequently incubated by the nest's 'owner.' Interestingly, when males of their species were introduced back into the collection, it seemed to take these 'co-op' females more time to accept the male than those females that did not participate.

Chicks and Fledging

Fledging is precarious no matter what the environment, and the rainforest exhibit is full of challenges for young birds. Some of the dangers are obvious – a giant, open-topped tank filled with carnivorous fish is difficult for even the most savvy adults to navigate. Some of the dangers were not as self-evident, and both biologists and fledglings had to learn the hard way. One fledgling was lost to a school of cichlids in a gallery tank– only then was it discovered that the installation of the tank's lid was overlooked during the flurry of opening. Many youngsters found themselves stuck in areas that their parents had a hard time reaching, such as buckets and bins that were stored back of house, etc. As parents became more habituated to the space these incidents decreased. Biologists noted that the younger birds were no longer leaving the forested area of the exhibit.

Some issues arose even before chicks were ready to fledge. From a necropsy done on a deceased blue-gray tanager (*Thraupis episcopus*) chick, it was revealed that the parents were feeding it inappropriate materials. Biologists pulled the next clutch with the intention of hand-rearing the offspring. Although the hand-rearing attempt was successful for one of the chicks, the reintroduction into the collection was not.



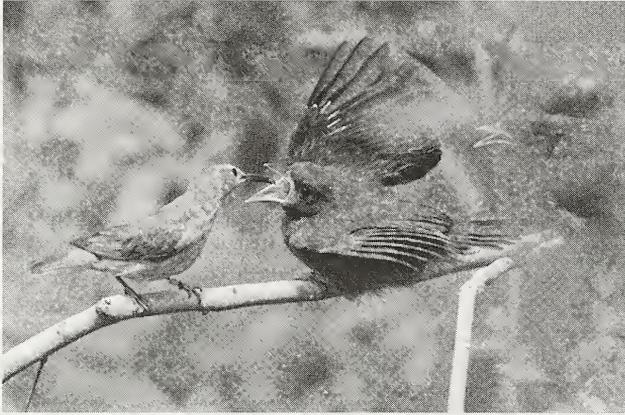
Juvenile blue-gray tanager.

The resident blue-gray pair immediately attacked the juvenile, likely deeming it a threat to their territory. In general, reintroduction of any young individuals that have been pulled off-exhibit for an extended period of time has not been effective. Resident adults of the same species continue to assess both their own and other's offspring as threats upon reintroduction. It is interesting to note that adults with established hierarchies do not have the same issue, even when pulled off-exhibit for medical procedures that have taken upwards of four weeks.

Fostering

Biologists noted that when the adult female yellow-green grosbeak was in the exhibit with the rest of the population, she was extremely interested in the silver-beaked tanager fledglings and appeared to be feeding them. Our attempts at fostering chicks to her off-exhibit were not successful due to the fact that even though she would elicit feeding responses from them and 'go through the motions' of feeding, she did not actually bring food to them. When re-released onto exhibit she became so possessive over the chicks, the parents were unable to feed their own offspring and biologists had to pull her off-exhibit again.

Attempts at fostering silver-beaked chicks to silver-beaked females other than the biological mother were unsuccessful as well. These females showed no interest whatsoever when chicks were offered for fostering off-exhibit.



Honeycreeper with silver-beaked fledges.

We've seen the female red-legged honeycreepers exhibit a feeding behavior with the silver-beaked tanager fledglings as well, but it is unclear whether or not they are actually delivering any nutrients to the youngsters.

Disease Process

Limited space for any population is never ideal, and finding quarantine space in an aquarium is always a challenge. We were tasked with quarantining upwards of 40 birds in preparation for the opening of

the new building. The majority of the initial population was wild-caught birds purchased from a broker in Florida. We experienced some mortalities in quarantine that upon necropsy were attributed to salmonella. The violaceous euphonias were the species hit hardest by this during quarantine. After being released into the exhibit, there were some individuals that succumbed to complications caused by salmonella as well. It should be noted that these individuals were all part of the initial population exposed during quarantine. Once the birds were released and their proximity to each other was increased, we did not experience any mortalities due to transmission between newly introduced animals or offspring. Because salmonella is a zoonotic, our veterinary staff took a proactive approach contacting public health. It was determined that the risk of the public contracting the disease while walking through the exhibit was comparable to walking in any outdoor environment.

After introducing four adult bananaquits (*Coereba flaveola*) into the population a year after opening, one of the pairs started successfully breeding on exhibit. Biologists noted that the fledglings would do well initially, and then start showing symptoms of neurological compromise at approximately five to six weeks of age. Necropsy results revealed that the cause of death was atoxoplasma. Though known to be present in the resident population, the bananaquit fledglings are the only ones thus far to suffer mortalities as a result. Biologists coordinated with the hospital to start medicating the population *in situ* with sulfachlorpyridazine one to two days prior to the next clutch of bananaquit chicks hatching. We found this 'pre-medicating' increased survival rate during the fledging period.

Our veterinary staff continues to be vigilant about testing animals in quarantine, on exhibit, and post-mortem. Specimens are tested for salmonella, coccidia, atoxoplasma, chlamydia, and micobacteria. Tissue samples are banked at all necropsies. Histopathology and PCR probes are performed whenever cause of death is not immediately apparent.

For the Future

We have reached our primary goal of establishing and maintaining a healthy population of passerines in an extremely complex exhibit space, and our goals for the future will focus primarily on breeding. With that in mind, we have begun the process of creating a more 'chick friendly' exhibit space. This includes obtaining a large nylon net that can be installed over the tank during fledging or introductions in hopes of decreasing subsequent 'fish-related fatalities.' We also plan to install flight cages off-exhibit. These would allow us to encourage off-exhibit breeding, as well as maintaining flight endurance for off exhibit birds that will eventually be re-released onto exhibit.

Species List

Saffron Finch (*Sicalis flaveola*)
Yellow-green Grosbeak (*Caryothraustes canadensis*)
Violaceous Euphonia (*Euphonia violacea*)
Paradise Tanager (*Tangara chilensis*)
Silver-beaked Tanager (*Ramphocelus carbo*)
Red-shouldered Tanager (*Tachyphonus phoenicius*)
Opal-rumped Tanager (*Tangara velia*)
Turquoise Tanager (*Tangara mexicana*)
Rufous-crowned Tanager (*Tangara cayana*)
Black-faced Dacnis (*Dacnis lineata*)
Blue Dacnis (*Dacnis cayana*)
Yellow-legged Honeycreeper (*Cyanerpes caeruleus*)
Red-legged Honeycreeper (*Cyanerpes cyaneus*)
Bananaquit (*Coereba flaveola*)
Blue-gray Tanager (*Thraupis episcopus*)
Blue Ground Dove (*Claravis pretiosa*)

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Zoo News Digest/Zoo Biology Group - Check Them Out!

Zoo NewsDigest is the longest established and most widely read listing of current 'zoo' related news on the Internet. It notes 'real' events of interest to those working within the zoo industry. The Digest also includes comments and notification of courses and coming events. You can check it out on its Facebook® page at <http://www.facebook.com/pages/ZooNews-Digest/41410063216?ref=nf>. Or check our <http://zoonewsdigest.blogspot.com/>

The Zoo Biology Group is concerned with all disciplines involved in the running of a Zoological Garden: captive breeding, husbandry, exhibit design and construction, diets, enrichment, management, record-keeping, etc. To join the Zoo Biology group see <http://groups.yahoo.com/group/zoo-biology> for qualifications and process.

Upcoming AZA National Conferences

Sept. 12-17, 2011 - AZA 2011 Annual Conference - Hosted by Zoo Atlanta, Atlanta , GA
Sept. 8-13, 2012 - AZA 2012 Annual Conference - Hosted by Phoenix Zoo, Phoenix, AZ
Sept. 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

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



American Trophy Hunters Drive African Lions Closer to Extinction - African lions (*Panthera leo*) are being driven towards extinction by American hunters determined to bag trophies, wildlife organizations have warned. The lions, already threatened by conflict with farmers over land and by shrinking habitats, are being driven to the brink by the increasing demand from the U.S. for personal trophies, such as lion skins, and a growing trade in animal parts. Jeff Flocken, of the International Fund for Animal Welfare, said: "The king of the jungle is heading toward extinction, and yet Americans continue to kill lions for sport. It is time for this senseless killing and unsustainable practice to stop."

A coalition of wildlife organizations has petitioned the White House to list the African lion as an endangered species and ban the import of hunting trophies such as skins, claws and skulls, which can sell for thousands of dollars. The coalition, which includes IFAW, the Humane Society of the United States, Humane Society International, Born Free and Defenders of Wildlife, said that two-thirds of the lions hunted for sport were taken to the U.S. in the past 10 years. They said that at least 5,663 lions were traded for recreation between 1998 and 2008, with 64% of the resulting trophies being imported into America. There were up to 200,000 lions in Africa 100 years ago, said the coalition. That figure has now fallen to between 23,000 and 40,000, with lions extinct in 26 countries. The practice is made worse by the hunters' desire to bag a dominant male, according to a report in *The Guardian*. The death of the leader makes the pride unstable, with the new dominant male often killing all



African Lion (*Panthera leo*) at Louisville Zoo (Photo: Trisha M. Shears/wikipedia)

the cubs to preserve his position. Flocken added: "The countries that allow hunting have the worst drops in lion populations."

Hunters are by no means the only threat. The human population in Africa, especially in sub-Saharan Africa, is growing rapidly and could hit 1.75 billion by 2050. Wilderness areas are being encroached upon to make room for agriculture and to build roads – such as the controversial highway across the Serengeti. Some conservationists argue that a total ban on hunting is unnecessary. They claim that responsible hunting could in some instances help lion populations by conserving wilderness areas. Source: *Daily Mail*, 2 March 2011

Eastern Cougar Declared Extinct - On Wednesday, 2 March, Federal wildlife biologists declared the eastern cougar (*Puma concolor cougar*) to be extinct. The U.S. Fish and Wildlife Service concluded that there are no longer any wild populations of mountain lions in the eastern U.S. Researchers believe the subspecies has probably been extinct since the 1930s. The declaration will move the eastern cougar from the endangered species list to the extinct list. There have been a number of sightings of mountain lions from Maine to South Carolina, but the wildlife service says those cougars were either escaped or released captives. The U.S. Fish and Wildlife Service's decision to declare the eastern cougar extinct does not affect the status of the Florida panther (sometimes referred as *P. concolor coryi*), which is another endangered wildcat. Source: *RedOrbit*, 2 March 2011

Rehabilitated Manatees Return to the Water - Three manatees (*Trichechus manatus latirostris*) swam back into their natural habitat recently after surviving the stress of this winter's cold temperatures. Biologists from the Florida Fish and Wildlife Conservation Commission teamed up with staff from the David A. Straz Jr. Manatee Hospital at the Lowry Park Zoo in Tampa to release the manatees back into the water at the Apollo Beach Nature Park on 18 February. "The three manatees were recovered in December due to extreme cold," said Andy Garrett, a biologist for Florida Fish and Wildlife. "They were underweight, lethargic and had cold lesions all over them."

Bayberry, a male, was rescued from Bayboro Harbor in St. Petersburg on 15 December. Maggie, a female, was rescued from Harbor Canal in Bradenton on 20 December. And Palmy, another female, was rescued from the Palma Sola area in Bradenton on 22 December.

Fish and Wildlife typically takes the lead on manatee rescues. Prolonged exposure to water temperatures below 68°F [20°C] can bring about "cold stress syndrome" and death. Each of the young adult manatees were rehabilitated at the Lowry Park Zoo facility. The three weighed between 360 and 375 pounds each when they arrived at the hospital, and gained an average of 38 pounds before being released. The Apollo Beach Nature Park was chosen as the release site because of its proximity to the clean, warm water discharge canal at Tampa Electric Co.'s Big Bend Power Station. Volunteers from TECO's South Hillsborough Operations were also present to lend a hand. Before they were released, the manatees were marked with numbers.



Manatees suffered greatly from the cold waters in Florida this year. (Photo: AnimalPlanet.com)

"Since they have no obvious scars or marks on them, it's so that we can recognize them and know when they made it to the warm water discharge canal," Garrett said. *Source: South Shore News & Tribune, John Ceballos, 2 March 2011*

New Bill Would Protect Bats, Other Species from Wildlife Diseases - The Center for Biological Diversity applauded the introduction of a new bill by Sen. Frank Lautenberg (D-N.J.), which should speed the response of the federal government to wildlife disease crises such as the one currently taking a devastating toll on bats. Bats have been decimated in the past few years by a new, fast-spreading illness called white-nose syndrome. "The slow response of the federal government to white-nose syndrome makes it painfully clear that we need a better system for quickly addressing wildlife crises," said Mollie Matteson, a conservation advocate with the Center. "White-nose syndrome threatens the survival of bats around the country but, so far the federal government hasn't responded in a way that matches the magnitude of this unprecedented outbreak."

The proposed legislation, known as the Wildlife Disease Emergency Act, would create a mechanism for the Secretary of the Interior to declare wildlife disease emergencies, establish a fund to coordinate rapid response, and address wildlife crises in cooperation with federal and state agencies and nongovernmental organizations. The bill would also create a wildlife disease committee to increase the "level of preparedness of the United States to address emerging wildlife diseases."

New Jersey's Sen. Lautenberg, who sits on the Environment and Public Works Committee, introduced the bill during a confirmation hearing for the new director of the U.S. Fish and Wildlife Service, Dan Ashe.

White-nose syndrome is the most devastating wildlife disease ever documented in North America, according to biologists; but other recent wildlife diseases have also captured headlines, threatened the survival of species and exacted high economic and ecological costs. These diseases include chytrid fungus (*Batrachochytrium dendrobatidis*) in frogs and other amphibians and chronic wasting disease in deer and elk (*Cervus canadensis*).

“Already this winter, white-nose syndrome has shown up in two new states, for a current total of 16,” said Matteson. “The federal agencies responsible for protecting our wildlife have needed to move quickly and aggressively, but instead they have been tentative and indecisive. A system for national wildlife disease response, if adequately funded, will make a huge difference.”

The bat disease was first documented in caves in upstate New York in 2006; it has since moved as far west as western Oklahoma, as far south as Tennessee and as far north as Ontario, Canada. Scientists estimated two years ago it had killed more than 1 million bats, and many more bats since then have died. The cause of the bat illness is likely a newly introduced fungus, which colonizes the bats’ skin and wings and appears to interfere with their delicate physiological balance during hibernation.

Source: *Center for Biological Diversity, 15 February 2011*

Circus President & Former Employee Plead Guilty to Violating Endangered Species Act - John Pugh, Wilbur Davenport, and Cole Brothers Circus Inc., entered plea agreements in U.S. District Court in Beaumont, TX to resolve Endangered Species Act (ESA) violations related to the purchase and sale of two Asian elephants (*Elephas maximus*) named “Tina” and “Jewel.” Pugh and Cole Brothers Circus Inc. were charged with unlawfully selling the two Asian elephants to Mr. Davenport, who was charged for unlawfully receiving the Asian elephants. Pugh is the owner and president of Cole Brothers and Davenport a former employee. Cole Brothers is a circus that performs in locations across the Eastern United States. Pugh was approached by Davenport in 2005 about the purchase of Tina and Jewel, who were owned by the circus.

Asian Elephants are listed as an endangered species under the ESA. It is unlawful to purchase or sell an endangered species in interstate commerce without a permit. In limited circumstances, permits are issued when applicants demonstrate that the sale or transfer of the endangered species will further scientific research, or enhance the propagation and survival of the species. None of the parties possessed, nor had they obtained, any permit that would have authorized such a sale of Tina and Jewel.



Asian elephants Tina and Jewell settle in at the San Diego Zoo.

(Photo courtesy of the Zoological Society of San Diego)

The defendants executed a five-year lease to purchase agreement, with the final purchase price of both elephants being \$150,000. Davenport performed with the elephants for the circus through the summer and fall of 2006 to pay off the balance owed for Tina and Jewel, and thereafter transported the elephants to his home in Leggett, TX. Davenport intended to incorporate the two elephants into his own business, which included,

among other things, offering the elephants for personal demonstrations, private parties and events, and elephant rides.

In accordance with the terms of the plea agreement, Pugh and Davenport were sentenced to three years of probation, a special condition of probation being that each must perform 100 hours of community service every year of their probationary term. Pugh was also sentenced to pay a \$4,000 fine as well as make a \$1,200 community service payment to an organization or organizations working for the conservation or rehabilitation of Asian elephants. Davenport was sentenced to pay a \$5,200 fine. According to its plea agreement, Cole Brothers Circus was sentenced to four years of probation and a \$150,000 fine.

As stated in the plea agreement, in August 2009, the U.S. Department of Agriculture (USDA) confiscated Jewel from Mr. Davenport pursuant to its authority under the Animal Welfare Act. Davenport then abandoned Tina to U.S. Fish and Wildlife Service, allowing USDA to transport the two elephants together to the San Diego Zoo.

This case was investigated by the USFWS. Trial Attorney Jessie Alloway and Senior Trial Attorney

Elinor Colbourn of the U.S. Department of Justice's Environmental Crimes Section, Environment and Natural Resources Division, and Assistant U.S. Attorney Joe Batte of the Eastern District of Texas prosecuted the case. *Source: US Department of Justice, 23 February 2011*

U.S. Fish and Wildlife Service: Bison Protection Not Warranted - The U.S. Fish and Wildlife Service have decided that wild plains bison do not deserve protection under the Endangered Species Act. The Service announced a 90-day finding on a 2009 petition by private citizens James Bailey and Natalie Bailey to list the wild plains bison, (*Bison bison bison*), or each of four distinct population segments, as threatened.

"Based on our review," said the Service, "we find that the petition does not present substantial information indicating that listing may be warranted." In its finding, the Service said, "Wild plains bison are distributed in parks, preserves, other public lands, and private lands throughout and external to their historical range. The current population of wild plains bison is estimated to be 20,500 animals in 62 conservation herds. Recent population trends appear stable to slightly increasing in conservation herds (as noted by the petitioners)."



American bison once numbered in the millions across the plains of North America.

(Photo: Ryan Hagerty_USFWS)

In 2010, the nonprofit Center for Biological

Diversity sued the Service for failing to respond to the petition to list the bison and other petitions to list dozens of species as threatened or endangered under the Act. Noah Greenwald, endangered species director at the Center, said his organization is disappointed in the decision. "North American bison herds are a dim, dim shadow of their former glory," he said. "Today's decision that bison do not merit protection under the Endangered Species Act is a complete farce."

The Service previously turned down a petition to list the bison herd at Yellowstone National Park in the northwest corner of Wyoming as a distinct population group and on August 15, 2007 decided that listing the Yellowstone bison herd was not warranted. In determining the bison does not warrant protection, the Fish and Wildlife Service completely ignored the fact that bison are gone from nearly the entirety of their historic range, choosing to argue that the agency has only to look at the species' current range, said Greenwald. The Center is threatening to go to court again to bring the bison under the protection of the Endangered Species Act.

"The Fish and Wildlife Service has turned a blind eye to the tremendous loss of our iconic bison from the North American landscape," Greenwald said. "This see-no-evil, hear-no-evil approach is entirely inconsistent with the broad purposes of the Endangered Species Act, and we will certainly challenge this absurd finding." *Source: Environment News Service, 28 February 2011*

Elimination of U.S. Forest Service International Programs Hurts American Interests - The U.S. Senate is poised to eliminate funding for the U.S. Forest Service Office of International Programs (FSIP) within the Fiscal Year 2011 Continuing Resolution. The program, which represents less than one-tenth of one percent of the federal budget, protects U.S. timber markets from the flow of illegal logging abroad and works with China and Russia to address such invasive species as Emerald Ash Borer (*Agrilus planipennis*) and the Asian Gypsy moth (*Lymantria dispar*), both of which threaten millions of forest acres in the United States. In effect, FSIP's work abroad is protecting U.S. jobs at home.

John Calvelli, Wildlife Conservation Society's Executive Vice President for Public Affairs, said, "Any effort to eliminate funding for the U.S. Forest Service International Programs (FSIP) is short-sighted and would have a negative effect on America's national security and economic security. FSIP provides technical assistance in forest management in some of the world's most unstable regions. This allows vital natural resources to be managed more effectively which reduces the chances of

conflict. The benefits of this work far outweigh the costs and protect U.S. economic interests both domestically and internationally.”

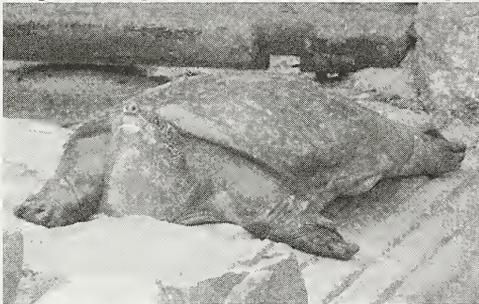
Funding for FSIP is at risk in the Senate because it was not enumerated in the president’s Fiscal Year 2012 budget request, which is being used as a basis for negotiating details of the FY11 Continuing Resolution. However, the savings from eliminating the program would make almost no impact on the federal deficit.

“The Wildlife Conservation Society stands firmly against harmful cuts to beneficial programs like the Forest Service International Programs that serve to provide positive impacts to Americans with their work abroad,” said Calvelli. *Source: WCS, 2 March 2011*

Shellshock: New Report Lists 25 Most Endangered Turtle Species - A report issued 21 February 2011, co-authored by the Wildlife Conservation Society (WCS) working in conjunction with the Turtle Conservation Coalition, lists the 25 most endangered turtle species from around the world – some of which currently number less than five individuals. Decimated by illegal hunting for both food and the pet trade along with habitat loss, many turtle species will go extinct in the next decade unless drastic conservation measures are taken, according to the report, which was released at a regional workshop hosted by Wildlife Reserves Singapore and WCS. Seventeen of the 25 species are found in Asia, three are from South America, three from Africa, one from Australia, and one from Central America and Mexico. The report was authored by the Turtle Conservation Coalition, which is made up by IUCN/SSC Tortoise and Freshwater Turtle Specialist Group, Turtle Conservation Fund, Turtle Survival Alliance, Turtle Conservancy/Behler Chelonian Center, Chelonian Research Foundation, Conservation International, WCS, and San Diego Zoo Global.

The list of 25 includes “Lonesome George” – the only remaining Abington Island giant tortoise (*Geochelone nigra abingdoni*). Though there is still scientific disagreement as to whether he is a recognized species or a subspecies of Galápagos tortoise, all agree that he is the last of his kind. Another species on the brink is the Yangtze giant softshell turtle (*Rafetus swinhoei*) with just four known individuals. Wildlife Conservation Society veterinarians have been working with Chinese officials and other partners to breed the last known male/female pair of these giant turtles, which currently reside at China’s Suzhou Zoo.

Illegal hunting for turtles in Asia for food, pets, and traditional medicines is a particular problem, the report says. “Turtles are being unsustainably hunted throughout Asia,” said co-author Brian D. Horne of the Wildlife Conservation Society. “Every tortoise and turtle species in Asia is being impacted in some manner by the international trade in turtles and turtle products. In just one market in Dhaka, Bangladesh we saw close to 100,000 turtles being butchered for consumption during a religious holiday, and we know of at least three other such markets within the city.”



Yangtze Giant Softshell Turtle
(Photo: Courtesy Cleveland Metroparks Zoo)

in their shells, but this defense mechanism doesn’t work against organized, large-scale human hunting efforts. The fact is that turtles are being vacuumed up from every nook and cranny in Asia and beyond.”

The report says that better enforcement of existing trade laws, habitat protection, and captive breeding are all keys to preventing turtle species from going extinct while bolstering existing populations. *Source: WCS, 21 February 2011*

Vietnamese Race to Save a Giant and Sacred Turtle - Hundreds of people are working around the clock to clean up a lake in Vietnam’s capital in hopes of saving a giant turtle that is considered a sacred

symbol of Hanoi. Some experts fear pollution at Hoan Kiem Lake is killing the giant turtle, which has a soft shell the size of a desk. It is one of the world's most-endangered species, with only four known to be alive. Teams of people are cleaning debris, pumping fresh water into the lake and using sandbags to expand a tiny island to serve as a "turtle hospital."

The Hoan Kiem turtle (*Rafetus leloii*) is rooted in Vietnamese folklore, and some even believe the animal that lives in the lake today is the same mythical creature that helped a Vietnamese king fend off the Chinese nearly six centuries ago. In the past, it has been glimpsed only rarely sticking its neck out of the water. But it has recently surfaced much more frequently, alarming the public with open wounds on its head, legs and shell. Meetings were called and 10 government agencies were put to work to try to save it.

Vietnamese have flocked to the lake in hopes of spotting the turtle -- a sign of good luck -- as newspapers run daily articles about its plight. "For the Vietnamese, the Hoan Kiem Lake turtle is the most sacred thing," said retired state employee Nguyen Thi Xuan, 63, who traveled from a suburban Hanoi district to try to get a glimpse of the animal. "He has helped the Vietnamese to defeat foreign invaders and also helped the country to have peace."



The Hoan Kiem turtle is considered a mythical creature by some. (Photo: Brian D. Horne/WCS)

The small lake is a city landmark for its curved red bridge leading to a temple on a tiny island. Weeping willows and other leafy trees shade a sidewalk that rings the water, a popular site for tourists and Hanoians to exercise and relax. But the lake has been trashed with everything from bricks to plastic bags and raw sewage. It is not uncommon to see men urinating into the murky water. The pollution is slowly killing the Hoan Kiem turtle, a Vietnamese biologist warned. "I believe the injuries were caused by sharp edges from debris in the lake," said Ha Dinh Duc, who has studied the lone turtle for 20 years and considers himself its caretaker. "The poor quality of water also makes the conditions unbearable for the turtle."

A rescue team hopes to coax the turtle onto land so they can treat the wounds. Sandbags have been built up to expand the small island for it to emerge. But if it does not crawl onto the platform by itself, a net will be used to capture it. Veterinarians will then take skin and shell samples to determine how to treat the turtle. No one knows the turtle's age or gender, but turtle experts estimate it is probably between 80 and 100-plus years old. The experts believe it is probably the most endangered freshwater turtle species in the world. It weighs about 440 pounds and its massive shell stretches 6 feet long and 4 feet wide. Source: Associated Press, Tran Van Minh, 5 March 2011

DNA Better Than Eyes When Counting Endangered Species - Using genetic methods to count endangered eagles, a group of scientists showed that traditional counting methods can lead to significantly incorrect totals that they believe could adversely affect conservation efforts. Andrew DeWoody, a professor of genetics at Purdue University; Jamie Ivy, population manager at the San Diego Zoo; and Todd Katzner, a research assistant professor at the University of West Virginia, found that visual counts of imperial (*Aquila heliaca*) and white-tailed (*Haliaeetus albicilla*) sea eagles in the Narzum National Nature Reserve of Kazakhstan significantly underestimated the imperial eagle population there. Using DNA from eagle feathers gathered in the area, the researchers were able to identify individual DNA fingerprints for each bird. The technique showed that there were 414 eagles, more than three times as many as had been visually observed, and more than two and a half times more than modeling suggested would be there.

"A biologist doesn't always see them coming and going," said DeWoody, whose findings were published in the early online version of the journal *Animal Conservation*. "Eagles are difficult to capture, mark and resight. Biologists in the field can't differentiate individuals, whereas by a genetic fingerprint geneticists can differentiate among individuals that have visited a site."

DeWoody, Ivy and Katzner, with collaborator Evgeny Bragin of the Narzum Natural Nature

Reserve collected thousands of eagle feathers around roosts and nesting sites. DeWoody's team at Purdue was able to extract DNA from those feathers and determine that there were hundreds of eagles that had recently visited the site. "Generally we say 'what you see is what you get,' but in this case it's the complete opposite," said Katzner, who used the data to model more accurate estimates of eagle populations. "When your field data are off by that much, it's difficult to build accurate models because your starting point is just so far off."

DeWoody and Katzner said accurate animal counts are an important part of conservation practices. If populations are underestimated, it could signal to decision makers that a habitat isn't important when, in reality, more animals are using it than thought. Conversely, if a population is more abundant than once thought, resources may need to be reallocated. "We don't want to spend a lot of effort protecting a species that doesn't need that much protection," DeWoody said. "This is a science-based approach to conservation."

In the case of eagles in Kazakhstan, Katzner said the new population estimates show that the Narzum National Nature Reserve is a more important site than previously thought. "We knew it was an important site for eagles, but we seriously underestimated its importance," Katzner said. "We used to think this was only an important site for breeders, but now we know this is an important site for birds from several life stages."

The data will be used to begin discussions about managing resources for eagles in Kazakhstan. DeWoody hopes that the findings will increase funding to use the technique on other threatened or endangered species. He said of particular interest to him is the Steller's sea eagle (*Haliaeetus pelagicus*), a bird native to northeast Asia and thought to have a population of only a few thousand. A National Science Foundation fellowship, the National Geographic Society, National Birds of Prey Trust and Wildlife Conservation Society funded the study. *Source: Purdue University, Brian Wallheimer, 7 March 2011*



Eastern Imperial Eagle
(Photo: AngMoKio/German Raptor Research Centre)

Announcing the Felid TAG Husbandry Course and Mid-Year Meeting

May 2011 – Hosted by Omaha's Henry Doorly Zoo, Omaha, NE

The Fifth Annual Felid Husbandry Course will be held May 1-4, 2011

SSP® Meetings will be held May 3-4, 2011

AZA FTAG Mid-year Meeting will be held May 5-7, 2011

Husbandry Course: Students completing the course will cover all aspects of felid husbandry, including safety, nutrition, behavior, reproduction, veterinary issues, and introductions. They will be provided a variety of resources (both electronic and paper) and personalized assistance with problem solving tasks, as well as the opportunity to discuss challenges and goals in their own institution's program.

The ideal student attending the husbandry course will:

- Have at least one [1] year of experience working with felids
- Currently work in a position at your facility where they are involved in the daily care of felids (keepers, leads, front-line supervisors, etc.)
- Have institutional support to attend the three-day workshop, including pre-work and follow-up after their return
- Be willing to actively participate in course discussions during class and offer feedback to instructors after the course.

Once again the Denver Zoo is generously offering a scholarship to aid a student in attending the Felid Husbandry Course. Scholarship applications may be found at the FTAG website or by contacting Bonnie Breitbeil bonnieb@centralfloridazoo.org For more detailed information including hotel or contacts please visit the Felid TAG [website www.felidtag.org](http://www.felidtag.org)

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