

ANIMAL KEEPERS' FORUM



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

MAY 2007

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Animal Keepers' Forum is published monthly by the American Association of Zoo Keepers, Inc., 3601 S.W. 29th Street, Suite 133, Topeka, KS 66614-2054. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers' Forum. Postage paid at Topeka, KS.

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Resources for Crisis Management in Zoos & Other Animal Care Facilities, Vol. 2 - Susan D. Chan, Topeka, KS;
William K. Baker, Little Rock Zoo, AR; Diana Guerrero, ArkAnimals, Big Bear Lake, CA

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33rd Anniversary
1974 - 2007

About the Cover.....

This month's cover features the Arabian Oryx (*Oryx besia*) drawn by Mary Deckert, a Docent at the Los Angeles Zoo, Los Angeles, CA. The Arabian oryx is a medium-sized antelope weighing 65 - 75 kg (140 - 170 lb). It eats mainly grasses, but herbs, seedpods, fruit, fresh growth of trees, tubers and roots also form part of its diet. It can go for weeks without drinking water. The Arabian oryx apparently digs shallow depressions in soft ground under trees and shrubs for resting. This species historically lived in nomadic herds that followed the rare rains, and it was able to utilize effectively the fresh plant growth that occurs after a rainfall. The normal group size is 8 - 20 animals. Around 1800 the Arabian oryx was thought to have occurred over most of the Arabian Peninsula (which includes modern Israel, Jordan, Syria, Iraq, portions of Egypt (Sinai Peninsula), Saudi Arabia, Oman, Yemen, United Arab Emirates, Bahrain, Kuwait and Qatar). By 1970 it was found only in the southeastern regions of the Rub' al Khali desert on the Arabian Peninsula. The last one in the wild was shot in 1972. Animals raised in captive populations were re-introduced into the wild in Oman in 1982. Additional re-introduced populations now occur in Bahrain, Israel and Saudi Arabia, with a total reintroduced population in the wild of approximately 886 in 2003. The main cause of the extinction of the Arabian oryx in the wild was overhunting, both hunting by Bedouin for meat and hides as well as sport hunting by motorized parties. Poaching of re-introduced wild Arabian oryx has become a serious threat again. At least 200 oryx were taken or killed by poachers from the re-introduced wild Omani herd in three years after poaching began there in February 1996. The Arabian oryx is one of the world's rarest mammals and is listed as endangered by the IUCN. Thanks, Mary!

Animal Keepers' Forum publishes original papers and news items of interest to the animal keeping profession. Non-members are welcome to submit articles for consideration. Articles should be typed or hand-printed and double-spaced. Authors are encouraged to submit their manuscripts on a disk as well as in hard copy form. Manuscripts submitted either on disk or electronically as attachments to an email should be submitted in Microsoft WORD. All illustrations, graphs, charts and tables should be clearly marked, in final form and should fit in a page size no greater than 5.5" x 8.5" (14cm x 22cm). Literature used should be cited in the text (Brown, 1986) and alphabetically in the final bibliography. Avoid footnotes. Include scientific name (as per ISIS) the first time an animal name is used. Thereafter use common name. Use metric system for weights and measurements (standard equivalents may be noted in parenthesis). Use the continental dating system (day-month-year). Times should be listed as per the 24-hour clock (0800, 1630 hrs. etc.). Glossy black and white or color prints (minimum size 3" x 5" [8cm x 14cm]) are accepted. Clearly marked captions should accompany photos. Please list photo credit on back of photo. Photographs may be submitted electronically as either JPEG or TIFF file attachments.

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 *AKE*. 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.kscsoxmail.com<

**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 *AKE* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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AAZK website Address: www.aazk.org

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

Scoops & Scuttlebutt



Election Announcement

As the membership was made aware in the President's Message in the April issue of *AKF*, AAZK did not receive enough candidate nominations to proceed with a 2007 Board of Director's election. Therefore, the two eligible candidates whose completed materials had been submitted by the 28 February deadline will be seated following the National Conference in Galveston (Shane Good, Cleveland Metroparks Zoo; and Bob Cisneros, San Diego Zoo). In accordance with AAZK, Inc. Bylaws, the sitting Board will then also fill the third vacant position by appointment.

AAZK Video Night Seeks Participants

The AAZK Enrichment and Training Committees invite you to submit your enrichment and/or training videos to be presented at Video Night during the 2007 AAZK National Conference in Galveston. Submissions should be in the following format:

- In VHS or CD format
- No more than 7 minutes long.
- Good quality (steady frame, appropriate or no sound, clear picture)
- Videos may be edited for content and to accommodate time restraints.

We would like to see enrichment that encourages species specific behaviors and innovations in training that help facilitate husbandry and specific conditions. All submissions will be put onto one comprehensive CD. A complementary CD will be given to each facility that contributes a video. Please plan on having a representative present during video night to narrate your facility's submission. Submissions are due by August 1, 2007 and should be sent to:

Danielle Decker
1200 N. Savannah Circle E.
Bay Lake, FL 32830

You will be notified prior to the conference if your video is selected to be viewed at video night. Please contact Rachel Daneault rachel.b.daneault@disney.com or Nikki Bowens rhinogirl1@yahoo.com if you have any questions.

Lee Houts Enrichment Excellence Award - Let Someone Shine!

Have you been impressed with an initiative that an individual or group has developed to better enrich their animals? Has an individual or group you know, developed an activity for a species in their care that has brought forth breathtaking natural behavior? Do you know an individual or group that has spearheaded a dynamic program helping their department move forward with sustainable, accountable, zoo-wide enrichment? Has this individual or group inspired you through their dedication to enrichment for captive wildlife? If so, you can let them and their colleagues know just how much their hard work is appreciated through the Lee Houts Enrichment Excellence Award. Official forms for nomination may be found on the AAZK website (www.aazk.org) under Awards Committee, but start thinking now of that special person or group who you think may be an Enrichment Hero! Award recipients and their work will be highlighted in an issue of the *AKF*. Nominations are due by **1 June 2007**.

Member Supports Adopt-A-School With Donation

The AAZK Board of Directors would like to thank Professional member Linda G. Kunze for her recent donation in support of the AAZK Adopt-a-School Program at the Lewa Wildlife Conservancy in Kenya. Linda works at the Caldwell Zoo in Tyler, TX. This program is administered by the Lewa Education Trust and helps to support the purchase of school supplies and lunches for children attending the eight primary schools in the Conservancy area. For more information on the Lewa Education Trust go to <http://www.lewa.org/education.php><

CNAH Seeks Frog and Toad Photos

The Center for North American Herpetology frog and toad checklist for Canada and the United States consists of 96 recognized species, as of this date; we have excellent images of 89 of those species (93%, most by Suzanne L. Collins), but lack photographs of the remaining 7 taxa. In addition, we lack four pattern classes (= races) of some anurans. In order to finish the imagery on this page, CNAH solicits high quality electronic color images of the frog and toad taxa listed below. Low resolution images (no more than 500k) with locality to state and county/province only, as well as the name of the photographer, should be emailed as jpg attachments to: jcollins@ku.edu

Although we cannot compensate for the use of images submitted and/or selected, we are pleased to give photographers credit at the site of the photograph for images used. And we give you our sincere thanks for helping CNAH.

Images of adult specimens are desired for the following 7 species:

Eleutherodactylus (soon to be *Syrrophus*) *guttulatus* - Spotted Chirping Frog

Hyla wrightorum (formerly *eximia*) - Arizona Treefrog

Ascaphus montanus - Eastern Tailed Frog

Leptodactylus labialis - White-lipped Frog

Lithobates (formerly *Rana*) *onca* - Relict Leopard Frog

Rana draytonii - California Red-legged Frog

Rana muscosa - Sierra Madre Yellow-legged Frog

Rana pretiosa - Oregon Spotted Frog

Images of adult specimens are desired for the following 4 pattern classes:

Acris crepitans paludicola - Coastal Cricket Frog

Acris gryllus dorsalis - Florida Cricket Frog

Pseudacris nigrita verrucosa - Florida Chorus Frog

Lithobates areolatus areolatus - Southern Crawfish Frog

Source: The Center for North American Herpetology Lawrence, Kansas <http://www.cnah.org> 13 April 2007

A.P.E.S. Database

The Ape Populations, Environments, and Surveys (A.P.E.S.) database aims to provide an accurate and objective global picture on the distribution and status of great apes, and thus inform long-term management and conservation strategies for these taxa. This will be achieved by providing a user-friendly and interactive database to archive ape survey data which will be managed by a Data Review Working Group that produces regular reports on the status of great apes and reviews requests for data access.

A.P.E.S. has been designed as a dynamic and interactive database, to which individuals and institutions can make contributions and access information on the status of great apes. Ape survey data information

can be directly uploaded to this database for archival in the A.P.E.S. database, after going through a short review process ensuring data quality. The core of the A.P.E.S. concept is to summarize and conduct meta-analysis on all existing ape survey information. The progress and results of these efforts will be available on this website (<http://gis.eva.mpg.de/website/index.html>)

This A.P.E.S. database has been designed as a resource for:

- Field biologists who have collected survey data within the range states of great apes. The A.P.E.S. database provides a secure means of archiving these data and ensuring that the information is made available for use only within your specified parameters.
- Conservation managers who are concerned with the conservation status of apes in specific regions. The A.P.E.S. database also provides a policy for requesting data sets.
- Spatial modelers who are interested in the myriad of factors determining the past, current, and future distribution of great apes. In addition to housing all available information on the density and distribution of apes, the A.P.E.S. database offers spatial information on biotic and abiotic variables in the range states of chimpanzees, gorillas, bonobos, and orangutans.
- Teachers and Students interested in learning more about the biology, ecology, and conservation of great apes. The interactive maps of the A.P.E.S. database provide a hands-on approach to understanding ape distribution and ecology. The regular reports also provide learning resources with the most current information available on the status of great apes.
- Members of the press and general public will find that the A.P.E.S. database is a valuable resource for the most up-to-date information on the status of great apes and links to other relevant sites.

The A.P.E.S. initiative was founded in January 2005 as a joint project between the IUCN/SSC Primate Specialist Group and the Department of Primatology of the Max Planck Institute for Evolutionary Anthropology. We welcome feedback and suggestions for the A.P.E.S. database. Please do not hesitate to contact us if you have questions or comments. We will respond as soon as possible.
E-Mail: apes (at) eva.mpg.de

Max Planck Institute for Evolutionary Anthropology
Deutscher Platz 6, 04103 Leipzig, Germany

Have You Sent AO Your E-mail Address Yet?

In order to better communicate with our members, and also save the Association the rising costs of mailings/postage, we are working to establish an AAZK member e-mail database. With such a database we would be able to send out electronic membership renewal notices, information about upcoming conferences, and other Association news. In order to make this work, we need your help.

Please send an e-mail to Barbara Manspeaker at aazkoffice@zk.kscoxmail.com with the words "AAZK Email Database" in the subject line. Please be assured that your e-mail address will not be shared with any other group or individual without your express permission. We are simply looking for ways to stay in touch with you as a member and to also help cut the costs of mailings and postage for the organization. Thanks in advance for helping us achieve this cost-cutting goal.



From the Executive Director

I would like to invite you to read the following article that takes a hard look at the subject of animal keeper safety. The business of keeping exotic animals in captive situations is challenging and dangerous. A *very* informal Internet search revealed that in the US, over the past five years, an average of ten “caretakers” per year have suffered a fatal injury in a zoo, sanctuary or animal-related facility. I know what you’re thinking – that most of these facilities and operators are suspect, so fatalities are to be expected, where amateurs are performing work best done by experts. But once we enter the circle of “professional” zoos and aquariums (and I’m not sure where that official line is drawn), even one death or catastrophic injury, is one too many.

Let me state this up front, that this was a very difficult subject to address given recent events and the contents of the article is bound to cause stress, distress and emotional response from the zoo and aquarium profession. But a response is needed, because this subject is seldom addressed proactively, instead we always seem to be reactive to tragedy.

Within the past few months, our profession has suffered a catastrophic injury and a fatality at two highly respected institutions. Our thoughts and prayers go out to all our members and colleagues in San Francisco and Denver. When you as professional animal keepers become aware of such tragedies, the first response is sympathy or empathy, sometimes raw emotion. The next natural response is introspection, followed by reactive, cautious behavior as you refocus on your very dangerous job.

It’s time to discuss that danger openly, instead of pushing it out of your mind, and look at executing change and improvement, wherever we might, before the next tragic incident occurs.

As always, I hope to open dialogue with the membership on any subject, but this subject deserves the attention and input from every animal professional.

Ed Hansen, Executive Director
AAZK, Inc.

Safety in the Animal Care Profession

Ed Hansen, Risk Management Specialist
City of Tucson, Tucson, AZ
Executive Director
American Association of Zoo Keepers, Inc.

It is fact that working with exotic animals is a dangerous profession. It is a profession that demands 100% focus and concentration to avoid a catastrophic injury or fatality. Without complete focus and concentration, a life is lost or changed forever in a literal heartbeat.

When the media becomes involved in the reporting of a keeper’s serious injury or death, I am asked to speak on behalf of your Association to comment upon what is often classified by public relations personnel as an “unfortunate accident”. Technically, that assessment is only 50% correct. It is unfortunate, very unfortunate, however it is extremely rare that the tragedy is an accident. Sometimes, “unfortunate accident” is followed by the qualifier “resulting from keeper error”. Let’s break down the difference between an accident and error.

By definition, an accident is an unplanned or unforeseen event. As a former animal professional for 24 years, and a current safety professional, I understand that unless an animal keeper is purposefully occupying the same space as an animal, it is completely possible to identify 99.97% of the hazards when analyzing a work process or hard facility, such as animal holding. I also understand that there are safety devices and programs in construction and industry that have broad application in the zoo and aquarium business but are underutilized or ignored in this industry. It is possible to design, plan, build and guard employees against recognized hazards.

An error involves human behavior. Most managers will state up front that they can control everything in their world with the exception of human behavior. This of course is technically right, but this is also an easy cop-out. We obviously understand that training can control behavior - you do it everyday with animals. Effective training in the human world also shapes behavior to the point of self-awareness and ultimately, self-control.

But here is where everything derails. To execute a safe design, to develop and maintain a written plan against employee injury, to safeguard employees against injury exposure, and to effectively train employees to recognize hazards and hazardous personal behavior takes time, commitment, and financial resources. This is an outlay of resources that few facilities will commit to over a long period of time. So, I strongly suggest that it's time for a change.

There are three players needed to effect this change - the employee, the facility and the oversight.

Animal keepers must understand that when they punch the time clock, the mental gears must shift and the mind must tune in to the specific task at hand. Your behavior controls your actions and that impacts your life. Complete control of the hazard (animals) should be your only priority, not clock, co-worker, or visitor. Focus on breaking down a large task into manageable segments, complete the task, and then *mentally* close that door before moving on.

Awareness and physical control of every hazard is the basic element of working in a dangerous industry. When hazards cannot be controlled, it is imperative that keepers report potentially unsafe conditions or the need to repair a safety device and not compromise their personal safety. Keepers must also understand two very important concepts. One, effective and frequent training is needed to refresh safe working concepts and practices. Safety training should be embraced, not avoided or ignored. Two, conveyance of discipline for a safety-related incident is not a punitive action. It is the enforcement of safe practice that may someday save your life, the life of a fellow keeper, or a visitor.

A facility must have an effective written safety plan, communicated to their employees in written form with interaction and discussion from employees. Facilities must provide current, effective and timely safety training to their employees, and should be encouraged to discuss incidents from other zoos and aquariums, reviewing the root cause and applying lessons learned amongst their own staff. A facility must be consistent and progressive in applying discipline for safety-related incidents so that employees know, understand and expect consequences for violating a safety policy. Finally, a facility must be immediately responsive to repairing safety devices and facilities should also be responsive to their employees who report unsafe conditions or potential hazards, establishing a dialogue that will result in a correction of a hazard, or a negotiated solution to a perceived hazard.

Zoo and aquarium facilities have instituted a number of activities designed to enhance the visitor experience. Behind-the-scenes tours, animal feeding by the public, animal demonstrations and interactive keeper talks are now collateral duties for the animal keeper. In addition to analyzing each of these activities for conservation content, each facility should analyze the activity for potential safety hazards. For example, where keepers will stand during keeper talks, and whether or not they are adequately protected from the animal should be defined and addressed. (If a keeper is tasked

with public speaking, will they not be interacting with the visitor with their back to the animal? If so, is the barrier adequate for this circumstance?) During behind-the-scenes tours, safe zones must be demarcated for the visitor. (Is the keeper expected to control both the animal and the visitor?) In the safety business, this is called a Job Safety or Job Hazard Analysis. Once the analysis is complete, the facility should remove the hazard by design, control the hazard, or protect the employee.

And finally, the overseer, AZA, must step forward and place more of an emphasis and value on safety in all aspects of the profession. I am not picking on AZA. AZA was very responsive to keeper fatalities and serious injuries resulting from free-contact within elephant programs. Guidelines and recommendations made by AZA regarding the housing of elephants in captivity, and the safe contact between elephant and keeper has all but eliminated handler fatalities in AZA Institutions with protected or zero-contact programs. That alone validates the point that AZA has the ability to require their membership to place the same amount of emphasis and value on safety issues that are placed on husbandry, conservation and breeding strategies. Placing a cultural value on safety in the Association will eventually manifest in lower injury rates for every facility.

Through the AZA accreditation process, a facility's safety programs get brief attention from the evaluators, but this is nowhere near enough. Entering "safety" on the AZA website search engine will return numerous hits on safety for the animal or visitor, but little on formal employee safety guidelines. There are committees and programs that track animals from cradle to grave. There is no safety committee tracking "accidents" in the profession. There are guidelines, whitepapers and policies that seem to exist for every animal-related subject, but safety. We have minimum guidelines for the exhibition of animals (mammals), but no minimum guidelines for animal keeper safety, for institutions to build an effective program.

Safety in the animal care profession takes a serious commitment from the triad. But the reality of any workplace is that there are some things that are outside our spectrum of control, and what we cannot control impairs our ability to concentrate. So whether we like it or not, ultimately safety in the workplace rests with the human factor.

It's all about concentrating on the task at hand, and clearing the mind of distraction. Be completely cognizant of where the hands are when working or feeding. Once your fingertips cross the barrier, you are in the animals' territory and bad things will eventually happen. Be crystal clear on physical barriers between you and the animals. Flag, paint or demarcate those animal access doors, anything that will catch your eye to verify the open or closed position of the door. This is elementary, but not so elementary that these two factors are the major contributors for catastrophic injuries or fatalities in the animal business.

It is imperative that facilities step up to correct poor design and review new construction so as not to repeat the same mistakes, and immediately repair safety devices. It is imperative that facilities conduct a hazard review of all work processes where an injury, from minor to major, may occur and then take corrective action. It is imperative that Associations such as AZA and AAZK step up when it comes to safety and work together to protect our membership by investigating and integrating safety concepts from other industries into our profession. It is imperative that keepers concentrate 100% of the time on the task, never letting their guard down for an instant when performing a work task. When it comes to protecting a life or lifestyle in the zoo and aquarium industry, there is a zero margin for error.



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Coming Events

2007 Rhino Keepers Workshop - 7-11 May, 2007 - at Werribee Open Range Zoo, Melbourne Zoo - Australia. For further info contact Brooke Squires; email - rhinoworkshop07@yahoo.com.au; website - www.rhinoworkshop07.com

6th Annual Callitrichid Behavioral Husbandry and Management Workshop - 12-13 May, 2007 - Hosted by the Roger Williams Park Zoo, Providence, RI. This is a free workshop for those working with tamarins and marmosets and will include formal presentations, posters, invited speakers and open discussion covering a variety of topics such as husbandry, training, enrichment and conservation. For more information go to: <http://www.rwpzoo.org/calendar/callitrichid.efm> or email Jhennessy@rwpzoo.org

Australasian Society of Zookeeping (ASZK) Annual Conference - 18-20 May 2007 - Alice Springs, NT, Australia; E-mail: slromer@bigpond.com Web: www.aszk.org.au

31st Annual International Herpetological Symposium 20-23 June 2007 in Toronto, Ont., Canada. Hosted by the Toronto Zoo. All details are online at <http://www.kingsnake.com.ih>

The Chimpanzee Care and Management Workshop 17-19 July 2007. Hosted by the Knoxville Zoo, Knoxville, TN and presented by the Chimpanzee SSP®. A comprehensive three-day course covering all aspects of progressive chimpanzee husbandry. Topics include: managing complex social groups, social introductions, operant conditioning training, contraception strategies, and enrichment programs. For registration or other information contact Steve Ross, Lincoln Park Zoo at (312) 742-7263 or ross@lpzoo.org

The Animal Behavior Society's 44th Annual Meeting - 21-25 July 2007 in Burlington, VT. For further information see www.animalbehavior.org/ABS/Program or contact the designated host Ken Yasukawa (yasukawa@beloit.edu).

MIE: Macropod Information Exchange - 27-29 July 2007. To be held in Kansas City, MO. For more information visit: www.macropodinfo.com <<http://www.macropodinfo.com>> or contact Jacque Blessington at: Jacsprat65@aol.com

International Conference on Environmental Enrichment - 5-10 August 2007. Hosted by Schöenbrunn Zoo, Vienna, Austria. Theme is "Enrichment - key for successful animal management". Further info available at the conference website www.zoovienna.at/icee2007

BIERZS The Symposium 2007: Bear Information Exchange for Rehabilitators, Zoos and Sanctuaries - 24-26 August 2007. The Symposium will be hosted by Western University of Health Sciences, College of Veterinary Medicine (<http://www.westernu.edu/xp/edu/veterinary/home.xml>) in Pomona, CA. The

conference will be held on Friday to Sunday, inclusive at Western University of Health Sciences, the Los Angeles Zoo (<http://www.lazoo.org/condorall/>), and a local sanctuary. Presentations will focus on captive bear care specific to the efforts of rehabilitators, zoos and sanctuaries. On Friday, two practical workshops will be run alternately and concurrently so all delegates can attend. The Enrichment Workshop is developed and presented by Valerie Hare and Karen Worley, Founders of *The Shape of Enrichment* (<http://www.enrichment.org/>). The Training Workshop is developed and presented by Jason Pratte, Giant Panda Keeper at the Zoo Atlanta (<http://www.zooatlanta.org/home.htm>). Any additional questions can be directed to: Dr. Jordan Schaul, BIERZS 2007 Co-Chair Planning Group - jcschaul@aim.com OR Else M.B. Poulsen, BIERZS 2007 Co-Chair Planning Group, embpoulsen@hotmail.com<

IV International Symposium on Breeding Birds in Captivity - 12-16 September 2007 at Doubletree International Plaza, Toronto, Ont., Canada. For more information please visit <http://www.isbbc.org/>

AZAD National Conference - 25 - 30 September 2007 in St. Louis, MO. Hosted by the Saint Louis Zoo. Docents. Conference capacity is 700 people. For more information contact Louise Rovak, lovak@sbcglobal.net or see <http://www.stlzoo.org/education/zoodocents/2007azadconferece/>

AZA Annual Conference - 16-21 September 2007 in Philadelphia, PA. Hosted by the Philadelphia Zoo. For further info contact Beth Strelitz, AZA's Meeting Manager at bstrelitz@aza.org

AAZK National Conference - 30 September - 4 October, 2007 - at Moody Gardens in Galveston, TX. Hosted by the Galveston AAZK Chapter. For more info watch the *AKF* or visit the Chapter's website at www.gcaazk.org/ Also see information in yellow insert in this issue of the *Forum*.

The 4th Crissey Zoological Symposium - 7-8 December 2007. Held at The North Carolina State University College of Veterinary Medicine. This symposium is for professional nutritionists, researchers and veterinarians working with zoo animals; interested students. First day focus will be on reptile and amphibian nutrition; second day will encompass nutrition talks from all comparative nutrition areas. For symposium details see www.cvm.ncsu.edu/conted/zoonutrition/

2008 Gorilla Workshop - 23-27 January 2008 - Hosted by Disney's Animal Kingdom and the Brevard Zoo in Orlando, FL. For more information see 2008GorillaWorkshop.com, or call Beth Armstrong at (614) 506-7368 or Rachel Daneault at (407) 938-2337.

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

AAZK Announces New Members

Jennifer Hennessy, **Roger Williams Park Zoo (RI)**;
Cindy Norton, **Bergen County Zoo (NJ)**; Sara Pilon
and Sarah Hansen, **Rosamond Grifford Zoo at
Burnet Park (NY)**; Suellen Stanley, **Pittsburgh
Zoo & Aquarium (PA)**; Mark Zajac, **Smithsonian
National Zoological Park (DC)**; Katie Bagley, Peter
Pruett, Crystal Anderson, Jason Brock, Virginia
Lipscomb, Nathan Elgart, Maggie Watson, Georgette
Richards, Jessica Alison, Robert Hill and Heather
B. Roberts, **Zoo Atlanta (GA)**; Amanda Brown,
Jacksonville Zoo & Gardens (FL); Christopher
Myrick, **Disney's Animal Kingdom (FL)**; Christal
R. Pafford and Derek Boyd, **Jackson Zoological
Park (MS)**; Jacqueline Broder, **Potter Park Zoo
(MI)**; Robin Freise, **Great Plains Zoo & Delbridge
Museum of Natural History (SD)**; Mark Brown,
no zoo listed, **Bartlett, IL**; Tracy Syoen, **Henson
Robinson Zoo (IL)**; Tim Shaw and Alexis
Christoffer, **Omaha's Henry Doorly Zoo (NE)**;
Linda Colbert, **Louisiana Purchase Gardens Zoo
(LA)**; Stephanie Crowson and Regina L. Green, **Fort
Worth Zoo (TX)**; E. Suzanne Jurek, **Houston Zoo,
Inc. (TX)**; Sean Eckert, **Abilene Zoo (TX)**;
Elizabeth Herrelko, **The Gorilla Foundation (CA)**;
Edwardo Martinez, no zoo listed, **Sebastopol, CA**;
and Steve Hash, **Oregon Zoo (OR)**.

Renewing Contributing Members

Hiroko Yoshida, Ph.D.
Okayama, Japan

Thomas C. Roy, Docent
Detroit Zoological Park, Royal Oak, MI

Ron Manseau, Docent
Detroit Zoological Park, Royal Oak, MI

New Contributing Members

Ashley Baudler
Mokena, IL

Renewing Institutional Members

Buttonwood Park Zoo
New Bedford, MA
Louis Garibaldi, Director

Cedar Cove Conservation Park
Louisburg, KS
William D. Pottorff, Director

BREC's Baton Rouge Zoo
Baton Rouge, LA
Phil Frost, Director

Amarillo Zoo
Amarillo, TX

Micke Grove Zoo
Lodi, CA
Ken Neiland, Director

New Institutional Members

Kansas City Zoo
Kansas City, MO
Randy Wisthoff, Director

Wild Things
Salinas, CA
Charlie Sammut, Founder/Director



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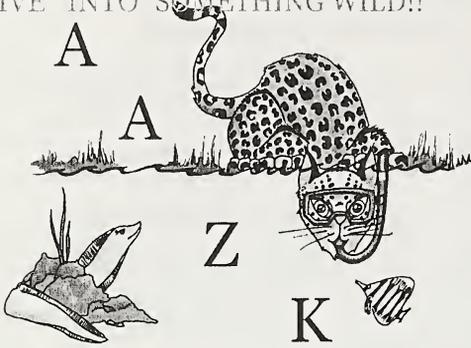
Bill & Marcia Brant

12921 SW 1st Rd., Ste 107,
PBM #434
Jonesville, FL 32669

(352) 495-9024
Fax: (352) 495-9781
e-mail: GrmtRodent@aol.com

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DIVE INTO SOMETHING WILD!!



Dive into something WILD! Join us on the Texas Gulf Coast and experience an AAZK Conference like never before! The 34th Annual AAZK National Conference is proudly hosted by the Galveston Chapter of AAZK and takes place in Galveston, TX from 30 September to 4 October 2007.

Have you booked your flight yet?

Continental is our host airline and is offering a 2-15% discount, depending on your flight. ZVD6 is AAZK's discount code, so mention it when booking. You can get an extra 3% discount if you book online at continental.com! Are you brave enough to maneuver through Houston and make your way to the beach? Avis is our host rental car company and they are offering a 5-20% discount, depending on your vehicle and length of rental. Mention code J868962 to receive your discount. You can make reservations online at www.avis.com or by calling 1-800-331-1600.

Have you seen our talented animal painters? Check out our Paypal® store at gcaazk.org. We have assorted practical items, such as travel mugs and luggage tags, painted by a kinkajou or penguin. Conference registration can be purchased here as well. If you have talented painters as well plan to bring a few pieces for the Silent Auction!

We're planning some amazing events to make this Texas conference unlike any other! Did you know AAZK is turning 40 this year? What better way to celebrate a birthday than at the conference! Help make the birthday celebration memorable by sending us your photos of past AAZK Conferences, Chapter events, fabulous members, and those great animals we all love to: conference@gcaazk.org.

We're also offering a one-day elephant workshop on Tuesday, 2 October. If you're interested, read more info on our website under "Program Information" and check the "I'll be attending" slot on the registration form. A workshop after the conference is being planned for oiled wildlife - check our website & future issues of *AKF* for more details soon!

Our pre- and post-conference trips are ready for travelers! Set sail on the *Carnival Conquest* on 23 September and return the morning of the *Icebreaker*. Friday, 5 October is a trip to the Houston Zoo and Downtown Aquarium. Price is \$30 and is limited to 50 people. Please check the slot on the registration form if you'll be able to come enjoy what Houston has to offer.

Questions? Visit our website www.gcaazk.org or drop us an email at conference@gcaazk.org We hope to see you in September!

AAZK Offers Four Grant Opportunities

Deadlines for Application Approaching

If you are interested in applying for one of the several grants offered by AAZK, you need to be aware that the deadline for receipt of applications is 1 June 2007 and 1 July 2007 depending on the grant. Below is a listing of the available grants. Forms are available on the AAZK website at www.aazk.org. Click on "Grants" on the menu bar on the left on the AAZK homepage.

AAZK offers the following grants:

The Geraldine Meyer/AAZK Professional Travel Grants

A total of \$2,000.00 is available annually. Grants are awarded twice a year, in May and November. Applications, from new and experienced keepers, are evaluated on their merit based on the member's submission of all requested materials. Awards may range from \$1,000.00 to \$250.00 or less depending on need. Applicants are encouraged to solicit additional funds from their institution or other sources. Applicants with other committed funds, or in-kind support (time off) will receive slight priority but all applications are encouraged.

Applications for mid-year consideration are due by February 1 of the calendar year; applications for end of the year consideration are due by July 1 of the calendar year. Money will be available upon notice to the recipient. Winners are required to submit an article to the Forum on the workshop or research they participated in.

Advances in Animal Keeping Course Grant

AAZK awards \$1,000.00 to the winning applicant to attend the new Advances In Animal Keeping Course offered by AAZK and AZA through the AZA professional schools program. Applications are due by July 1 of the year prior to the one in which the applicant wishes to attend this course.

CPR Grants

The Conservation, Preservation, and Restoration Grant awards up to \$1,000.00 once a year for projects oriented toward all conservation, preservation, or restoration of habitats/species with a preference for projects taking place in the U.S. but not limited to this. Applications are due June 1 of the calendar year for funding the following year.

Research Grants

The Research Grant awards up to \$2,000.00 once a year for AAZK member-driven research projects, small or large! Applications are due June 1 of the calendar year for funding the following year.

Information on the AAZK grant program is available on the AAZK website or by contacting the Grants Committee Chair at: shelly.roach@columbuszoo.org or (614) 724-3667.

The Animal Training Committee Presents



Where you can share your training experiences!

*Training Tales Editors – Jay Pratte, Zoo Atlanta;
Kim Kezer, Zoo New England; and Angela Binney, Disney's Animal Kingdom*

Thinking Outside of the Crate

*By Eric Smith, Animal Keeper
Smithsonian National Zoological Park, Washington, DC*

How do you get an animal into a crate when the animal is afraid of the crate? This dilemma began with two (1.1) pale-headed saki monkeys (*Pithecia pithecia*) and the need to crate them without force. These animals were already part of an existing training program. They were always able to learn new behaviors quickly. Crating them should be easy; however, this behavior presented us with a challenge.

Initially, we placed the crate inside the exhibit, which measures 9.14m x 6.09m x 4.57m (30' x 20' x 15'). We attempted to target them into the crate, but just as we brought the crate into the exhibit, the sakis ran to the other side of the enclosure and began pacing across one of the tree branches. The crate elicited stress-like behaviors and we had to try something different.

Next, we took only a portion of the crate into the exhibit and this approach met a similar fate. Then, we placed the crate portion into the exhibit with wood shavings and tempting peanuts. The sakis did not pace when this crate was present; however, they avoided that side of the enclosure for three days. When the female did venture over to remove the treats, the male bounded in front of her and kept her away from the area.

Our next idea was to use a familiar nest box. When we placed the nest box on our training platform the sakis became visibly distressed. Why was the box acceptable to them in one area and not another? In order to target both saki monkeys into the nest box in the "normal" area our arms would have to be about 10ft. long! A laser pointer proved to be an effective tool. We took on the task of target training to the laser and within the first few minutes the female saki was grabbing the red dot like a pro but the male needed remedial work. Every time we showed him the target point he ignored it but he tried to target to the pointer itself, not the dot. We placed it onto dark and light surfaces and even directly next to his hand and then showed him where it was, but not once did he give that dot so much as a glance.

By chance we came across a sheet of Plexiglas® while cleaning an outdoor shed. This discovery gave us hope as we had seen another institution have success using clear boxes and tubes to move *Callitrichids*.

First we took a single piece of Plexiglas® measuring 1.5m x .60m (60" x 24"). Then, we heated and bent it into a "U" shape with a flat bottom, each side measuring about .50m (20"). Because we were unsure of how the sakis would react to this new item, we waited to put the other sides and top onto the "crate" and brought it into the exhibit to begin the training session. For a few seconds both sakis

were a bit hesitant to come down and then both sakis came down to begin their training. After five minutes the male was not only targeting into the crate, but he would also move into it with just the verbal cue “box” and would station there. The female would target into it but would leave as soon as she received her reward. After a mere three sessions we added the top to our clear crate. The female preferred to sit on top of the crate instead of sitting inside of it. With a little more practice she caught on and with a few exceptions she performed the intended behavior and responded to the verbal “box” cue.

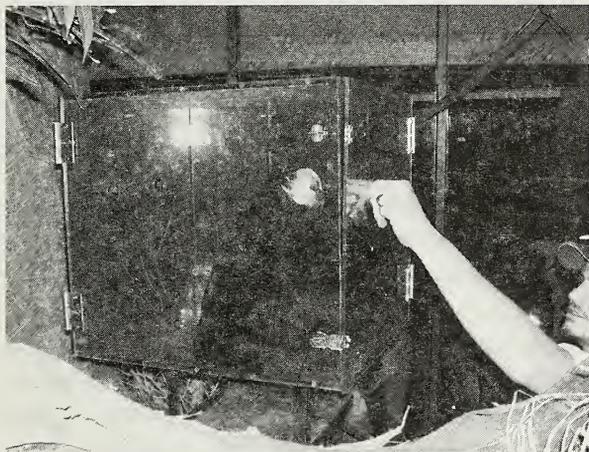


Photo by Hailey Tackett

of training, they were also freely going into the box on cue. They also allowed us to secure them in the box and move them repeatedly.

We are very pleased with the progress that all of the sakis have made and we hope to continue seeing great strides in their training. After great frustration and stress on both the keepers and animals we are glad that by thinking “outside the crate” we were able to come up with a solution that was successful.

ATC Comments:

Crates (and boxes) are fabulous training tools. We have seen many papers about ‘animals in boxes’, likely because most animals will need to go in one at some point in their zoo lives – either for transport or for medical procedures. But because each species will have its own peculiarities in relation to how they react to the crate, and what can be accomplished using a crate, each paper shares valuable information that other keepers may be able to utilize. And, though the ‘crate’ behavior seems straight forward, each animal will approach the crate differently. Knowing the individual and natural history of the animal and adjusting to the needs of the animal will be the key to successful crate training.

This “Training Tale” illustrates the ingenuity that keepers exhibit when faced with challenges. It also is a good reminder that animals will often surprise us with their behavior. By using alternative methods and problem-solving skills, this group of keepers met their training goals and learned a little more about the behavior of the saki monkeys in the process.

You are invited to submit material for the Training Tales Column. Look in the August 2006 issue of AKF (pg. 331) for guidelines for entries acceptable for this column’s format. Drawings or photos of training are encouraged. Contact Jay Pratte at jpratte@zooatlanta.org for more details or to submit an entry.

Viewpoint . . .

(Editor's note: The Viewpoint Column offers readers an opportunity to their express opinions on topics related to the profession of animal keeping, AAZK or AKF. It is not a forum for expressing disagreements with employers about labor-related issues. Opinions expressed in this column do not necessarily reflect those of AAZK, Inc. or Animal Keepers' Forum. Publication of opinions in this column does not constitute endorsement by AAZK, Inc. or Animal Keepers' Forum. Materials submitted are published at the discretion of the editor.)

For Want of a Nail

By Mark de Denus, Editor AAZK INSIGHT

I tried very hard. I wanted this piece to be about **Bowling For Rhinos**.

You all know about this extraordinary event and, with well over two million dollars raised, just how proud and pleased you must be. As you gear up for another event this year, be so very amazed and satisfied about what **you** are doing, what **AAZK** is doing, what **Patty Pearthree** and **Lewa Wildlife Conservancy** are doing.

In stolen moments last February while I put together something presentable for the March issue of *INSIGHT*, I found myself, for a start, on the Internet exploring the BFR website. Go there and take a look; you will be thrilled! In digging a little deeper, I found myself, suddenly, a lot deeper! That's the Internet. It is a bag of snakes. Before you know it you have forgotten why you started. Try to focus on rhinos and you end up looking at sharks, caviar, tiger bone medicines and ivory brushes in a barbershop.

A medieval rhyme tells about the loss of the kingdom because of the simple want of a nail. In this instance, rhino horn - that hairy cuticle nailed on its forehead - is a nail (but not that nail) that is sought. My friend, Eric, wrote 'that horn them poachers cringe in the thorns for'. It is sought for traditional medicines and daggers. We also covet it as a cause for conservation and a proof that we can do magical things for near mythical beings.

From this flood of information on the Internet I was able to sort out the realization of how complex, yet connected, rhino conservation really is. There are thousands of people involved with rhino issues; from the researcher to the lawmaker to the indigenous people to the poacher to the conservation activist. This network is a structure of alliances, friendships, relationships, partnerships, organizations and sanctuaries. It is nailed together with trust, goodwill, hard work and common goals. I am so proud that, through you, we are part of this staggering effort.

I still want it to be about BFR – so let's just keep the ball rolling!

In recent months we have seen much activity and momentum in some aspects of AAZK business. General membership is up and there has been an exceptional increase in Institutional memberships. Because of the generosity of Mr. Lutz Ruhe and the opportunities his funding has given us, AAZK is able to comfortably present grants and awards for research, conservation and travel. The essential process that is required each year is the re-chartering of all AAZK Chapters. This infuses a major



amount of money into the Association for operation. The most outstanding, and truly astonishing aspect was the response to the *duty obligation* in the recharter process. These extra dollars that Chapters directed to AAZK for specified use for committees, *AKF*, and other areas will surely allow this Association to survive financially.

But there are still tough issues to address in AAZK. As President Denise Wagner writes: "to be honest I don't think it is money or the lack of it that will be the downfall of this Association". Committees are in need of new contributors and ideas. The national Board of Directors elections fell short on candidates. We are fortunate in retaining and gaining Shane Good and Bob Cisneros to the Board of Directors. We need more like them (and they are you!).

In that medieval rhyme about the nail, there is also a shoe, a horse, a rider, a battle and a kingdom. The kingdom may be the 'idea' of AAZK itself – as Ed says "the voice of the professional animal keeper". The battle may be constituted in AAZK and what it chooses to confront. The rider may be embodied in our programs, committees and employees and how and what they deliver. The horse is our funding – your Chapter and membership dollars. The shoe is your presence in numbers and ideas. Of course the nail is you. It's all about what you want to do and how and when you are going to do it.

And maybe that is just hitting the nail on the head.



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The Use of Portable Corral Systems and Tamers, Drop-Floor Chutes for Improving and Simplifying Animal Husbandry, Veterinary Care and Management Techniques in Captive and Free-Range Hoofstock

By Mark MacNamara¹ and Andy Blue²

¹Fauna Research, Inc., 8 Bard Avenue, Red Hook, NY 12571 USA

²San Diego Zoo's Wild Animal Park, 15500 San Pasqual Valley Rd, Escondido, CA 92027 USA

Responsibly managed captive collections of exotic hoofstock begins with properly identifying each animal and then tracking that animal and providing preventative veterinary care and making informed management decisions based on the individual animals biological history.

Essential and necessary equipment in this effort include portable capture, sorting and holding corrals and TAMERS, restraint devices for individually handling each animal. The TAMER is designed so that each animal can be physically and safely restrained without the use of immobilizing drugs. Due to the variety of species, TAMERS are adjustable in size and due to the large number of specimens and expansive areas, often hundreds of hectares, TAMER systems are easily transportable. Mobility allows collection managers to bring the equipment to the animals, rather than moving animals to established facilities that may be hundreds of kilometers away.



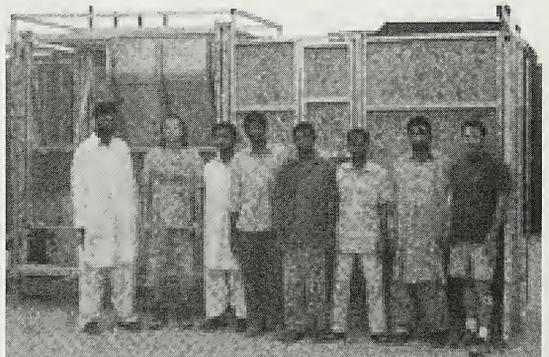
Female sable restrained in TAMER II

and move individual animals into the TAMER. These corrals are easily transported and erected quickly and easily under most conditions. They consist of 1.22m wide by 2.44m (2ft. x 8ft.) high panels and gates that are connected together with steel pins, designed so installation requires no tools. Each panel and gate is constructed of 3.81cm square (~1.5 in. sq.) high-strength, galvanized, tube steel covered with 1.27cm (.5 in.) thick high impact plastic sheets. Swing doors and slide doors and alleyway pushboards facilitate the movement of animals within the pens and into and out of the TAMERS.

The TAMER Jr. a light weight (225kg/

During a five-day period in February of 2006 at the EWBC, Endangered Wildlife Breeding and Conservation Center, in Al Ain, United Arab Emirates, we used a portable corral system and two mobile TAMERS to individually handle 263 antelope and wild goats, including: 25 nubian ibex, (*Capra ibex nubiana*), 82 transcaspian urial, (*Ovis sp.*), 10 impala, (*Aepyceros melampus*), 29 springbok, (*Antidorcas marsupialis*), 45 markhor, (*Capra falconeri*), 56 Cretian goats, (*Capra aegagrus cretensis*) and one sable antelope, (*Hippotragus niger*).

Equipment: Modular corral systems were used to hold, sort,



Capture and vet team with authors

~496lb.) drop floor chute is designed to restrain small hoofstock, up to 200kgs (440 lbs.) and was used at EWBCC to restrain, nubian ibex, transcaspian urials and springbok. It is constructed of galvanized steel tube and plastic sheeting, it is adjustable and can accommodate a wide range of body sizes, from 10kgs to 200 kgs (22 lbs. - 440 lbs.). It is easily operated and allows for unrestricted access to restrained animals for veterinary and management procedures. The TAMER Jr. can be moved, and set in place by hand and can be transported by pickup truck or all terrain vehicle.



Transporting TAMER using an ATV

The TAMER II is a larger drop floor chute, approximately 2.44m long by 1.83m wide and 2.44m high. The TAMER II can safely, restrain animals such as roan antelope, (*Hippotragus equines*), kudu, (*Tragelaphus strepsiceros*) waterbuck, (*Kobus lechee*), and oryx, (*Oryx, sp.*). At EWBCC it was used to handle, sable, marhkor, impala, springbok, and Cretian goats. The TAMER II is equipped with over the road tires and can be towed by a tractor, truck or ATV.

Each TAMER was equipped with a TruTest®, <www.tru-test.com>, electronic scale, consisting of a battery powered indicator, SR 3000, MPI1010 loadbars, so each animal can be weighed while in the TAMER. The weighing system was also compatible with Allflex® electronic ear tags. Link 3000 software also supplied enables the user to download the data out of the SR 3000 indicator into an ASCII file. Once downloaded into an ASCII file it can be imported to a spreadsheet or database.

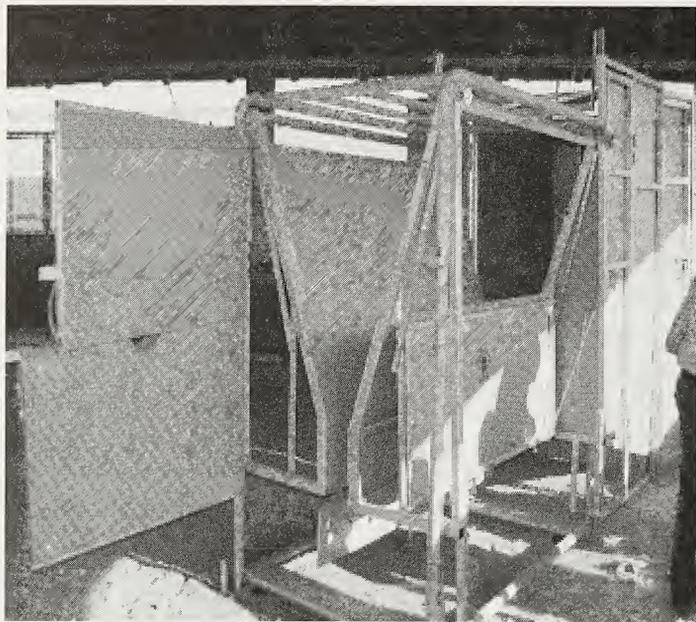
On the first day at the EWBCC facility in Al Ain, the TAMER Jr. was used to handle Nubian ibex, urials, and Cretian goats. Portable panels were put together to form a small catch pen, where the animals were sorted and separated and individually run into the TAMER Jr.. While immobilized in the TAMER, each animal was given a regiment of several medications and vaccinations, each animal was simultaneously weighed, and tagged with an electronic ear tag. Also, while in the TAMER Jr. animals were given a typical health exam and, if required, a hoof trim, horn trim, or other veterinary procedure including minor surgery.

On the second day a 30m (98 ft.) long by 1.2m (3' 11") wide alleyway was constructed out of the portable panels in order to move a herd of 65 urials across a paved road that was separating two enclosures. A team of five erected the alleyway in less than 1.5 hours and safely moved the urials across the road. Once across the road they were worked into the TAMER Jr. and treated the same way as the day before.



Portable Alleyway for moving urials

On the third, fourth and fifth days an alleyway and TAMER II was setup at one end of an existing loading chute from a quarantine and holding facility at EWBCC. Markhor, impala, springbok, and sable were moved from holding pens into the TAMER II for health exams, vaccinations, weighing, and tagging, and then moved back to their holding pens, or



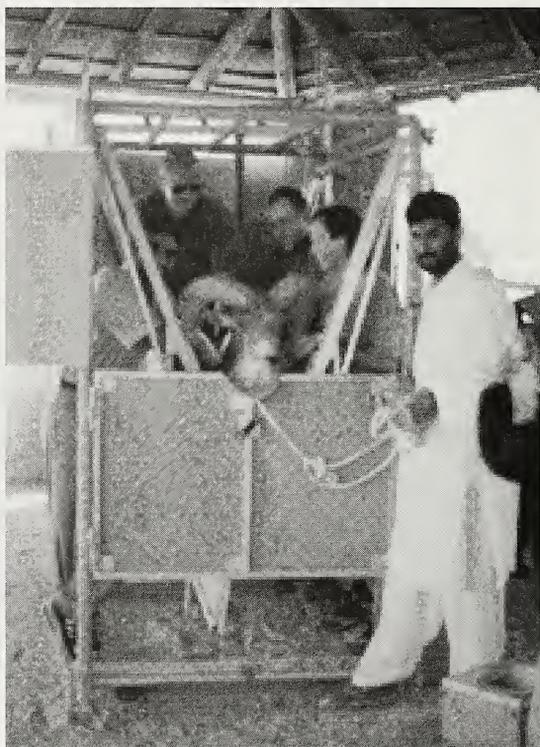
TAMER Jr. placed at the end of Alleyway with exit doors open.

crated for relocation to another area. During this time, a small crew of people; four animal handlers, one vet tech, and one veterinarian ran 90 animals through the system and individually treated each one with no immobilizing drugs, and no injuries or losses.

Smaller and less aggressive hoofstock can be encouraged to walk through the alleyway and moved into the TAMER with voice commands and movement behind the animals. Larger, more aggressive and dangerous animals are physically pushed through the alley with a specially designed pushboard mounted on an overhead track. This allows the animal handler to safely push the animal through the alley, up the ramp and into the TAMER without coming in contact with the animal.

All equipment is durable and designed for harsh environments, it is lightweight, transportable, and easily erected with a minimum of tools under a wide range of conditions. A small hammer, prybar, step ladder, cordless drill and supplied connector tool make installation quick and easy.

Acknowledgements: We thank Tim Bouts, DVM, MSc in Wild Animal Health MRCVS, Department of the Presidents Affairs, Head of Veterinary Department, Management of Nature Conservation. P.O. Box 47087, Abu Dhabi, UAE.



Urial restrained in TAMER Jr.

All photos provided by the authors.

REACTIONS

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

By William K. Baker, Jr., Curator
Panthera Research, Maumelle, AR



Question

We are considering using pepper spray at our facility, do you have any suggestions?

Comments

Historically, like so many defensive products that are on the public market today, spray units are based on product lines that were developed for military and law enforcement applications. These have truly become popular in our society as “less than lethal” and “non-lethal” options for law enforcement situations when a suspect becomes threatening, but not to the point that it can justify the use of deadly force.

There are numerous defensive sprays that are on the market at this time. The sheer volume of product choices is staggering and, of course, each one claims that it’s better than next. While I haven’t used every product on the market, I did field test a number of different models a while back and quickly learned some invaluable lessons.

First, avoid chemical sprays such as Mace® products, while they work fairly well on humans, they can’t approach the effectiveness of pepper-based sprays. Many law enforcement professionals that I have spoken to in the past had a clear preference for pepper sprays. So what exactly is pepper spray? The true form is based on oleoresin capsicum, a derivative of cayenne pepper. Of the brands on the market, I have a marked preference for Counter Assault® products, and it produces a heat rating of 2,000,000 Scoville Heat Units, which is seriously effective.

They can be found on the Internet at: www.counterassault.com

Having said this, I will explain why Counter Assault® is the only product that I will use and recommend.

- Immediate disabling power
- Easy to use
- Never separates and no shaking required
- 10% oleoresin of capsicum formulation
- 2,000,000 Scoville Heat Units
- 5-year shelf life
- Effects last 30-45 minutes on average
- Non-flammable
- Non-toxic with non CFC’s
- Research tested by the University of Montana
- Field tested by bear management specialists
- Recipient of the Grizzly Bear Stewardship Award 1998

While there are numerous eyewitness testimonials available from the manufacturer on their product, I can relate two separate instances where I have used their products. In one situation, it successfully broke a direct attack on me by an alpha 1.0 Axis deer (*Cervus axis*) after he and the herd escaped through a storm-damaged fence. He was disoriented from the storm and extremely aggressive when we tried to use directed pathways to shift the herd. When he dropped his head and started to charge me for the second time, I fired a single blast right into his eyes from 10 feet, it sent him flying back up the hill, down the service corridor, and back into his holdover. The great part was that the herd turned and followed him as well. After another storm damaged a fence line, the staff and I went through a similar situation with an alpha 1.0 Fallow deer (*Dama dama*); however, a minor spritz into the air allowing him to scent it was enough rather than a full-face spray.

In another facility, I interviewed the staff after they used it to break up a major fight between two lions on exhibit when fire extinguishers and hoses failed. From what I understand, it took less than five seconds to end it with pepper spray. In many facilities it is now standard issue equipment for crisis management, and is often issued to the staff for daily wear. Some of the most common methods I have seen used to promote accessibility are wall-mounted brackets to hold larger units in night houses, belt holsters, and even modified key chain holsters to hang small canisters off a belt loop.

Things I have learned (sometimes the hard way!)

Use a reliable product, other brands may leak in your pocket. One of the most painful experiences of my life happened when I carried a police brand of pepper spray, the lid came apart in pieces, and it leaked down my pants leg. I went home and showered for 45 minutes in cold water and my leg still tingled for the next three days!

If you are contaminated by pepper spray and don't have the decontamination foam spray handy, remove your clothing immediately and use only cold water to flush it from your skin. If you use hot water, it will open your skin pores and you will discover new levels of pain. When I had the spray unit fall apart in my pocket, I used cold water to initially flush, and then showered with a neutral soap and cold water.

Remember, if the spray touches anything, it becomes contaminated and it will burn! If someone else picks up your clothes with their bare hands, rather than bagging them in a garbage bag, it will transfer to them.

Counter-Assault® has been field tested on grizzly bears (*Ursus arctos*). They also offer zoo discounts, training materials, and practice canisters. Always buy the 3oz. (85gm) belt-sized unit with the nylon holster. The 1.4oz. (40gm) unit is too small and the larger canister units pull your pants down. However, having a couple of the 8.1oz. (230gm) canister units around is nice for crisis management situations.

Always buy the cone-shaped fogger style. Trying to hit something with any stream spray is an exercise in futility. Trust me, I tried to shoot a soda can hung by a piece of string that was swinging back in forth in the wind at 20 feet and couldn't reliably hit it.

When you use the unit be prepared for a mild recoil, especially if you deploy a canister. Also, the report of the first spray will be similar to the sound of a .22 rifle or a high velocity air rifle going off.

Always know which direction the wind is blowing, as the fine pepper mist will hang in the air and can easily be blown back onto you. Never, ever, unless it's a life or death situation, use a pepper spray inside an enclosed building. You will contaminate yourself and every living thing in proximity. I can only imagine what would happen if this occurred and it got picked up by a ventilation system.

Conclusion

Pepper spray is a great tool if you pay attention and know what you are doing

Next Month: Are there any targets on the market that can help us with our firearms practice?

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

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

American Crocodile Downlisted by U.S. Government

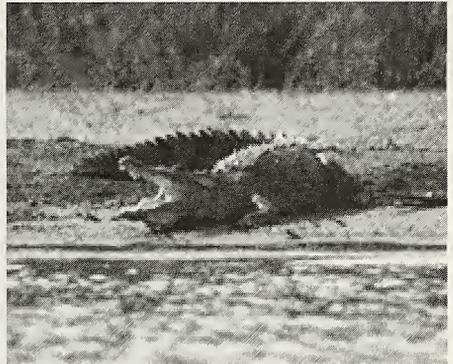
Reclassified from Endangered to Threatened

The U.S. Fish and Wildlife Service has announced that recovery efforts are making it possible to reclassify the American Crocodile (*Crocodylus acutus*) in Florida from endangered to threatened under the Endangered Species Act.

“American Crocodiles were a part of Florida’s history for hundreds of years until human activities such as urban development, agricultural conversion and overhunting decimated their populations,” said Sam D. Hamilton, the Service’s southeast regional director. “However, in the past 30 years, we have made great strides in protecting this species and conserving its habitat. Today we can celebrate their comeback as a result of the recovery efforts by numerous dedicated professionals who are helping sustain a vital part of Florida’s natural and cultural history.”

The Service’s final reclassification decision comes after the completion of its five-year review required under the ESA for all endangered and threatened species. An endangered species is defined as being in danger of extinction within the foreseeable future. A threatened classification means a species could become endangered. Reclassifying a species from endangered to the less-critical threatened designation is often reflective of recovery efforts reducing imminent threats and allowing populations to increase.

The American Crocodile is being reclassified in southern Florida, its only habitat within the U.S. This crocodylian will remain endangered in other countries, including Belize, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Mexico, Panama, Peru and Venezuela. The American Crocodile in Florida was originally listed as an endangered species in 1975. Their numbers in Florida have grown to an estimated 1,400 to 2,000, not including hatchlings.



American Crocodile Tortuguero Canal
Carribean Coast Costa Rica
(photo: Almay Images)

The species is one of two native crocodylians — the other being the American Alligator (*Alligator mississippiensis*) — that are known to frequent the U.S. It can be distinguished from the American Alligator by a relatively narrow, more pointed snout and by an indentation in the upper jaw that leaves the fourth tooth of the lower jaw exposed when the mouth is closed. In order to reclassify the American Crocodile from endangered to threatened, the recovery plan requires a sustained breeding population of 60 females. About 95% of the remaining American Crocodile habitat in southern Florida has been acquired by federal, state, and county agencies. These protected areas should allow the population to expand and could provide additional nesting opportunities. *Source: The Center for North American Herpetology, Lawrence, KS, 4-9-07 <http://www.cnah.org>*



Animal Training Committee Update

Submitted by:

Angela Binney¹ and Kim Kezer²,

ATC Co-Chairs

¹Disney's Animal Kingdom, ²Zoo New England

The AAZK Animal Training Committee strives to support the mission of AAZK, Inc. by providing information and learning opportunities for animal care professionals to facilitate the use of operant conditioning and other training techniques, to achieve behavioral management goals and excellence in animal care.

All ATC projects focus on various aspects of this mission and our committee has been working enthusiastically on these this 2006/2007 fiscal year. Conference workshops, such as the Animal Training Foundations Workshop, presented at the 2006 AAZK Conference, allow us to provide animal keepers with skills that will help polish their animal behavior management skills. Interactive discussions and activities also allow keepers to meet keepers with similar interests so they can share best practices as well. The Animal Keepers' Forum (AKF) allows ATC to reach the keepers across the globe with useful information about animal behavior management. And the ATC WebPages (on www.aazk.org) provide information at the click of a mouse. In order to maintain these projects and to develop new resources, the ATC relies on its members' knowledge, talents, resourcefulness, and energy.

Therefore, the ATC started the 2006/2007 fiscal year by inviting three new members to join the committee in their mission. They are: Tammy Root, Indianapolis Zoo; Catherine Vine, Philadelphia Zoo; and Jonathan Miot, Lincoln Park Zoo. Tammy is experienced with birds, a wide variety of mammals, fish and ectotherms and has organized various training and enrichment projects at her facility. She also serves on the AAZK Enrichment Committee. Catherine specializes in birds and has a passion for sharing her knowledge with others through presentations and publications. Jon focuses mostly on large carnivores and ungulates in his zoo keeping career, but also is talented with media technology and website design, which will help the committee in publications and information sharing.

At our annual ATC planning meeting, we action planned to update our project list. This list focuses mostly on refining existing projects, but several great ideas were planned for the future. Here is an overview of some of the projects we are currently working on:

- ATC Webpage Redesign – We plan to give the committee pages a little face-lift in the near future. Committee member, Jonathan Miot, is the task leader for this project, as he is our technology specialist.
- AKF Submissions – The ATC column is now alternating months with the Enrichment Options Column. So, every other month, another ATC resource will be available from the ATC. We also have a new feature in AKF called *Training Tales* that allows readers to share their training experiences with other keepers. For information regarding the Training Tales column, please contact Jay Pratte (jpratte@zooatlanta.org). *Editor's Note: See an example of Training Tales in this issue of AKF.*

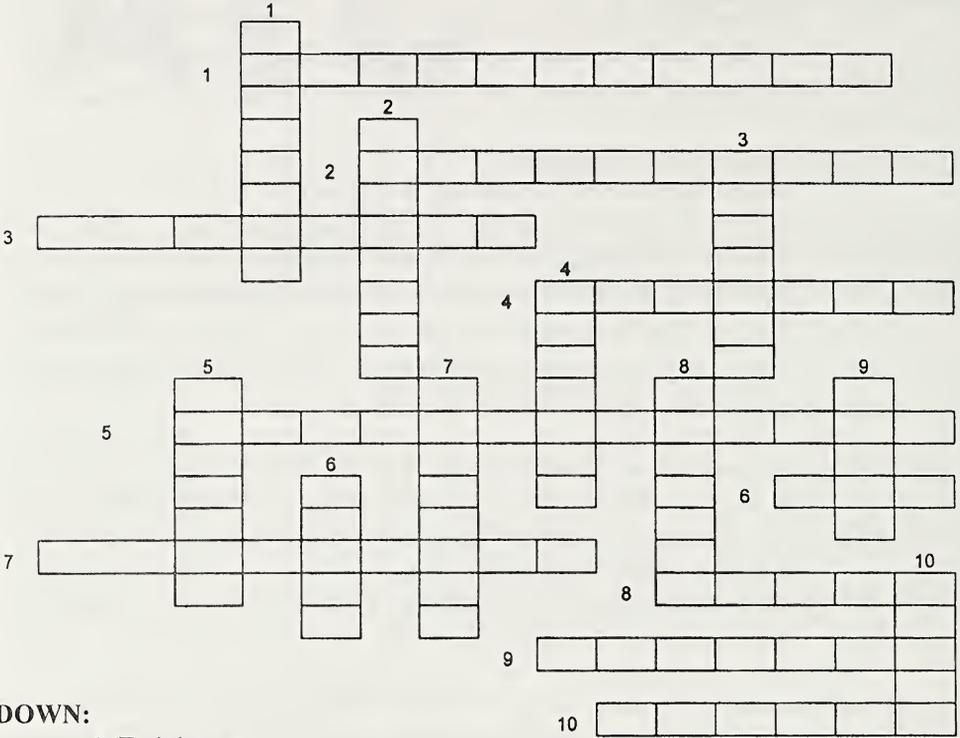
- Bibliography – We have not yet succeeded in making the Training Bibliography an on-line searchable database (due to technical challenges). Our immediate goal is to query new additions to update the existing format to 2007. Updates will be added gradually as we find them (our goal is to add them quarterly) and can be found in the committee pages of www.aazk.org. The searchable aspect is a future goal that we hope to make progress on by the end of the year.
- Behavior Lists: Deana Walz has been compiling behavior lists from the 2004 Animal Behavior Survey, conducted at AZA facilities by the ATC. These lists have been submitted to various TAGs (Taxonomic Advisory Groups) to be included in either Standardized Guidelines or Husbandry Manuals to show what types of behaviors have been trained with various taxa. Once these are published, the locations of these resources will be listed in an ATC update or on the website to allow keepers to access this information. These will also be added to the bibliography once each list goes into print.
- Conference Workshops: Many great ideas have been collected from delegates surveyed at the AAZK Conferences since 2001. These are implemented each year when we are planning for the next conference. As there are many subjects to discuss about training and numerous approaches to workshops, we cannot implement every idea in one workshop. Therefore, we rotate the format and content annually. The upcoming workshop is currently being designed and is sure to be engaging for all delegates! ATC is also planning to assist with the annual Video Night that the Enrichment Committee hosts at the conference. Stay tuned for updates from the EC about pre-planning for this workshop. *Editor's note: See AAZK Video Night item under this month's Scoops & Scuttlebutt.*
- Animal Data Transfer Form: The ATC is partnering with the Enrichment Committee, AKF Editor Susan Chan, The Board of Directors and several registrars to update the existing forms and merge them into one document. Tammy Root has patiently been collecting feedback from all parties to create a 'new and improved' ADTF that is slated to debut later this year. This will replace the original forms and will be made available on-line, again at www.aazk.org.

Please utilize these resources to assist you in your training initiatives at your facility, or just to learn more about animal training in general. If you have suggestions or questions about these projects or other training topics, please contact the ATC by visiting the committee overview webpage on www.aazk.org, using the e-mail link.

To gear you up for the 2007 AAZK ATC Workshop, Tammy Root, ATC member from the Indianapolis Zoo has put together this fun Animal Training Crossword. Test your training knowledge and have a little fun in the process!

Animal Training Terminology Crossword

Designed by Tammy Root, ATC member and keeper, Indianapolis Zoo



DOWN:

1. Training = _____
2. A type of reinforcement in which a response increases in frequency due
3. A type of bridge (to touch)
4. another word for modeling
5. Another word for scan
6. A type of bridge (to hear)
7. A type of reinforcement that follows with something the animal wants
8. A shaping technique in which the trainer provides a form of enticement to elicit a behavioral response.
9. Changing the sessions...“the spice of life”
10. Author of “Don’t Shoot the Dog”

ACROSS:

1. One of the cornerstones of animal care
2. A method of eliminating a behavior by no longer reinforcing it.
3. Free or Protected _____
4. A shaping technique
5. Small baby steps
6. Time-_____
7. A stimulus that pinpoints the exact moment that the behavioral criterion is met.
8. Not a single animal, but a _____ of animals
9. Jackpot or _____
10. A popular model used in managing training/enrichment programs

(See answers on page 195)

Chapter News Notes

Cheyenne Mountain Zoo AAZK Chapter

Another year has come and gone and it has been a very successful one at that. Our calendars were once again very successful earning us \$1,272.00. This year's calendar featured our animals "having a ball", enjoying items that they use for enrichment. Our 2008 calendar theme is still in the works but it promises to be as enjoyable as the last.

This year our annual Art on the Hoof event received a make-over. With our usual entry fee that guarantees the participant a piece of artwork at the end of the night, we added a live auction for higher end art pieces. We also added a silent auction where people bid on "Keeper for a Day" visits and behind-the-scenes tours. The event turned out to be a huge success, bringing in \$3,982.00, setting a new record.



Our bake sales were once again a success earning us a total of \$1,623.00 for the year. A large portion of this was earned during our Zoo's Electric Safari event. We also held various other small fundraisers that earned us around \$700.

All our fundraising paid off and we were able to contribute to many organizations. Some of these organizations included AAZK National, FONZ Kori Bustard SSP, Cheyenne Mountain Zoo Elephant Fund, and the Uganda Guinea Fowl Project.

Our second annual Dreamnight at the Zoo® turned out to be extremely successful. We had over 500 people in attendance and plan to have more this year. We would like to thank the Denver and Pueblo Zoo AAZK members for coming down and helping with the set-up and running of some of the booths that we had. The help was much appreciated.

Our new officers for 2007 are:

President.....Rebecca Zwicker
Vice President.....Jenyva Turner
Treasurer.....Jeannette Schwab
Secretary.....Joanna Husby
Liaison.....Jeremy Dillon

In the coming year we looking forward to improving our current fundraisers and finding more effective ways to involve the public in all that we do. We wish all the other AAZK Chapters an exciting and successful year.

—*Jeremy Dillon, Liaison*

AAZK Chapter Websites

A number of the 85+ AAZK Chapters maintain a Chapter website. The content of these sites varies from a simple announcement of meeting times to much more elaborate offerings such as their conservation efforts, enrichment work, etc. Some Chapter websites are independent while others are a part of their zoo or aquarium's website.

In seeking out AAZK Chapter websites recently we were able to locate sites for the list of AAZK Chapters that follows on the next page. There may certainly be websites that we were unable to locate, so we would love to hear from your Chapter if you do indeed have a website and do not find it listed. All sites listed were active as of 4/12/07.

There were several things that were noticed while looking over Chapter websites and that we would like to bring to the attention of those individuals who are responsible for maintaining their Chapter's website. It is important that all websites that carry the AAZK name maintain consistency in several areas. Please note the following and check out your site to make sure it is in compliance with the following:

- The official and legal name of AAZK is American Association of Zoo Keepers, Inc. **NOT** American Association of Zookeepers.

- The official logo of AAZK, Inc. is shown on the outside cover of this issue of *Animal Keepers' Forum*. Several Chapter websites are still displaying the retired oval rhino logo. If this is the case with your website, please make the change as soon as possible.

- Any AAZK logo that appears on your website should display the ® symbol. If you do not have access to a logo containing the ® designation, contact Susan at akfeditor@zk.kscoxmail.com

- We strongly encourage you to update your website at least quarterly (every month is even better!) to make sure that events that are over or incorrect/outdated information is still not posted on your site.

- If your AAZK Chapter closes, please make certain that your website is closed and the Administrative Office is notified of its closure. During our search we found one webpage for an AAZK Chapter that no longer even exists.

- We would love to have links to as many of our AAZK Chapters as possible listed on the national AAZK website. At this writing there were only about four or five listed. Having a link to your website from the national website allows AAZK members elsewhere to take a look at what your Chapter is doing and opens up networking opportunities between Chapters. On the Chapter links section under *Animal Keepers' Forum* on the national website menu at left on home page, the Chapter's web address as well as their Chapter logo is displayed.

Southern Ontario (Toronto Zoo)
[http://aazktoronto.ripod.com/
The%20AAZK%20in%20Southern%20Ontario.htm](http://aazktoronto.ripod.com/The%20AAZK%20in%20Southern%20Ontario.htm)

Buffalo Zoo Chapter
<http://www.buffalozoo.org/aazk.html>

Detroit Chapter
<http://www.aazkdetroit.org/>

Galveston Chapter (Moody Gardens)
<http://www.gcaazk.org/>

Louisville Chapter
<http://www.louisvillezoo.org/AAZK>

North Carolina Chapter
http://www.nczoo.org/accred/aazk_index.cfm

San Diego Chapter
<http://homepage.mac.com/sdaazk.org/>

Tulsa Chapter
<http://www.tulsaaazk.org/>

Puget Sound Chapter (Woodland Park Zoo)
www.pugetsoundaazk.org/

Memphis Zoo Chapter
<http://www.memphiszoo.org/about.aspx?pid=62>

Cheyenne Mountain Chapter
<http://www.cmzoo.org/indexaazk.html>

Knoxville Zoo Chapter
<http://www.knoxville-zoo.org/aazk.htm>

Cape May Chapter Cape May County Zoo, NJ
[http://www.co.cape-may.nj.us/Cit-c-Access/
webpage.cfm?TID=5&TPID=2922](http://www.co.cape-may.nj.us/Cit-c-Access/webpage.cfm?TID=5&TPID=2922)

Philadelphia Chapter
[http://www.philadelphiazoo.org/
index.php?id=6_2_3](http://www.philadelphiazoo.org/index.php?id=6_2_3)

San Francisco Zoo Chapter
<http://www.sfizoo.org>

Northern Lights Chapter (Lake Superior Zoo)
<http://www.lszoo.org/get.htm>

Utah Chapter AAZK (Hogle Zoo)
<http://www.hoglezoo.org/about/aazk.php>

Saint Louis Chapter AAZK
[http://www.stlzoo.org/animals/
caremanagement/aazk/](http://www.stlzoo.org/animals/caremanagement/aazk/)

California Desert Chapter (The Living Desert)
http://www.livingdesert.org/support_zoo_aazk.asp

Minnesota Zoo Chapter
[http://www.mnzoo.com/global/AAZK/
about.asp](http://www.mnzoo.com/global/AAZK/about.asp)

Brookfield Zoo Chapter
[http://www.brookfieldzoo.org/
0.asp?nSection=12...shtmlink=../pgpages/
pagegen.214.aspx](http://www.brookfieldzoo.org/0.asp?nSection=12...shtmlink=../pgpages/pagegen.214.aspx)

Indianapolis Zoo Chapter
[http://www.indyzoo.com/
content.aspx?CID=938](http://www.indyzoo.com/content.aspx?CID=938)

Nashville Chapter
<http://www.nashvilleaazk.org/calendar.html>

What's your Chapter been up to? Let us know about your successful fundraisers, guest speakers, conservation projects, new officers, new logos, etc. Do you have a new logo you want to show the membership? We want to hear from you! Send your Chapter News to the AKF Editor at: akfeditor@zk.kscoxmail.com

Greater One-Horned Rhinoceros

(*Rhinoceros unicornis*)

Artificial

Insemination Program . .

FROM A

KEEPER'S PERSPECTIVE

By

Wendy Shaffstall, Senior Ungulate Keeper

Cincinnati Zoo & Botanical Garden

Cincinnati, OH



(photo by Dave Jenke)



(photo by Monica Stoops)

The development of an artificial insemination program for the greater one-horned rhinoceros (*Rhinoceros unicornis*) is a unique collaboration of scientists and dedicated rhino professionals. Since its formation in 1981, the Center for Conservation and Research of Endangered Wildlife (CREW) has been instrumental in applying scientific principles and technology to saving endangered species. But, the greater one-horned rhinoceros artificial insemination program also required the skills, knowledge and dedication of the keepers on the project team to ensure its success.

Historically, the use of ultrasonography has provided a means of directly imaging and measuring ovarian structures while characterizing reproductive events (Adams, 1991). It has been found that the reproductive management of captive African rhino species can be enhanced through the application of transrectal ultrasonography (Radcliffe, 1999). So in 1999, reproductive physiologists sought to use this technology to correlate follicular development with urinary hormone metabolite monitoring of the estrogen derivative (estrone conjugate) and progesterone derivative (pregnenediol-3-glucuronide) in the greater one-horned rhinoceros (Roth, 2000; Stoops, 2003).

As the program evolved and our knowledge of this species increased, we found several unique features of their reproduction. The estrus cycle is approximately 45 days in length but can range from 35–60 days (Roth, 1999; Stoops, 2004 & 2005). During the cycle, the greater one-horned rhinoceros develops several small follicles on both ovaries that continue to grow until one reaches approximately 6cm (2.36”) in size. At that point in time, the follicle becomes “dominant” and continues to increase in size while the other follicles regress (Stoops, 2004). When the follicle reaches the 8–9cm (3.14-3.54”), the urinary hormone concentration of estrogen will begin to rise above baseline value, but these values can vary among individuals (Roth, 2000; Stoops, 2004). This estrogen serves to act upon the uterine environment to make it suitable for implantation should fertilization occur. The final follicle size will reach 10–12cm (3.93-4.72”), which is the largest of any mammal studied and can be maintained up to a week prior to signs of behavioral estrus (Stoops, 2004). It is when the estrogen concentration begins to increase that the female begins the “follicular phase” of her cycle. During this 14-day phase, olfactory and pheromone stimulation is critical so keepers provide exposure to male feces and monitor her reaction (Stoops, 2004). But, since we do not currently have a male at our facility, we must utilize feces frozen and provided to our institution for this purpose. The astute observations of the keepers are critical to determining when the female begins showing signs of behavioral estrus. Regardless of the ovarian changes and concentration of rising estrogen, one female may show strong behavioral estrus signs and another may be more subdued. Generally, behavioral estrus signs may be manifested by loss of appetite, increasing pacing

activity, “whistling” vocalizations, “squirting” urination patterns and vulvular “winking”. These signs should occur at Day 12 of the “follicular phase”, but variances in this timeframe are common. The scientists must rely on the keepers’ ability to pick up on these subtle nuances in behavior, movement or appearance that only comes with perceptive observations to indicate a variation (Radcliffe, 1999; Stoops, 2004).

To ensure efficient communication and continuity, keepers complete daily observation sheets specifically for the greater one-horned rhinoceros. Sheets have sections designated appetite, samples collected, urination pattern, vocalizations, discharge, and behavioral observations. Samples are collected midstream or aspirated off the floor, labeled and refrigerated until analyzed. The concentration of hormone derivatives in these samples is correlated with ultrasound data, follicular measurements and keeper observations to determine the stage of her cycle.

During females’ “follicular phase”, samples must be collected daily to enable close monitoring of hormonal fluctuations that may indicate impending ovulation. As mentioned previously, the estrogen concentration will begin to rise above baseline during the “follicular phase”, peak for several days, then decline; while the levels of progesterone continue to rise (Stoops, 2004). The high levels of progesterone will act on the uterine endometrium to enhance the formation of cells for implantation (Bronson, page 67). The ovulation process itself is induced by a dramatic surge in luteinizing hormone to cause the ovulation of the mature follicle (Bronson, page 69). Ovulation generally occurs within 48 hours following behavioral estrus and ultrasound images reveal the formation of a corpus haemorrhagicum one day later (Stoops, 2004). Luteinization is critical to the estrous cycle conclusion, the formation of the corpus luteum. A functional corpus luteum, will produce rising levels of progesterone to foster and provide the proper uterine environment for an embryo.

The keepers’ role in the project is all-inclusive. We are responsible for urine sample collection, behavioral observations, documentation, training for ultrasonography, conditioning for phlebotomy and venipuncture procedures, desensitization to vaginal stimulation, training for insemination procedure itself and participating in all insemination procedures. All training is done using operant conditioning principles based on positive reinforcement. We are fortunate that the restraint system we utilize for ultrasound is in a location that females must pass through regularly for shifting purposes. Since the animals were already acclimated to this area, we just had to refine our training and condition them to the confinement of the restraint itself. As with any training program, the animals dictated the rate of progression; and, as expected, each progressed at a different rate. During this process we focused on reinforcing calm demeanor and attitude while confined, then proceeded to acclimate them to the movement of the access panel needed to permit the transrectal ultrasound procedure. The next step in our progression was getting them accustomed to a person being in position behind them, and progressing to tactile contact and tail manipulation. Desensitization to the sound and movement of the equipment cart was done while the animal was in the restraint area and was rewarded, as before, for calm attitude and demeanor. The final phase was the conditioning to the insertion of finger, then hand, then arm, and finally, arm with hand holding the probe into the rectum. And, due to the large body mass of the greater one-horned rhinoceros, we needed to ensure acceptance of the probe extender that is utilized to lengthen the reach of the examiner. With all of these steps successfully conditioned, routine ultrasounds were done on each of the two females three times per week to monitor estrous cycles. In addition, as a cycle progressed, the frequency of these examinations was increased to enable us to more accurately pinpoint when ovulation could occur. Therefore, when ovulation became imminent, project team members needed to be available to perform ultrasonography procedure at varying times during the day and/or evening. The solid foundation of positive reinforcement for compliance with these procedures enabled the reproductive physiologist to record and document valuable changes in ovarian structures while a project team member handled and positioned the animal during the examination so the ultrasounds could be done in a safe manner.

The monitoring of the females’ ovarian changes during the estrous cycle and diligent observations by project team members are essential to the timing of insemination to ensure it is close to ovulation.

When the program started three years ago, animals had to be fully immobilized to perform the inseminations, and aside from the apparent risks associated with the immobilization itself, we found the anesthetics could influence the estrus cycle. We had been trying to desensitize animals to tactile contact of the vulva and vestibule with limited success until 2006. We recognized the female that had been bred by a male was more tolerant of this conditioning and the tactile desensitization than the second female with no breeding history. In addition, we found that neither female was responsive to any vulvular contact or manipulation except when she was in the "follicular phase" of her cycle. After discussing these species-specific peculiarities, the project team decided not to do any desensitization until a female entered the 14-day "follicular phase" of her cycle. During this phase the team would use this opportunity and coordinate conditioning sessions between keepers and reproductive physiologist. To avoid contamination, all equipment we used was sterile and the perineal area was cleaned thoroughly before any vulvular desensitization was done. Initially, we used sterilized pipette tubing (with non-spermicidal lubricant that would be used for the procedure) to desensitize females to the tactile stimulation of the reproductive tract. As you can imagine, progress was slow, but the dedication of all team members finally came to fruition. Through numerous trial and error techniques, we finally determined the idiosyncrasies of each female that would result in their cooperation for this particularly invasive procedure that was not evident or needed in any other previously conditioned procedures. Once we tailored our insemination conditioning to suit the animals' needs, progress was rapid.

Originally, both females were conditioned using an optic-equipped gastroscope. Due to its complexity, the use of this equipment required two additional personnel; one person to control insertion of the scope and a second to control the air/sterile water infusion system. The reproductive physiologist was responsible for guiding the scope via optics and performed the insemination itself. Prior to the use of the gastroscope, we did attempt the procedure just using the sterile pipette tubing inserted into the tract and progressed to the insemination site. However, in this species of rhino their reproductive anatomy makes this type of an insemination difficult. In this species, as you enter the vagina, the tracks go up and over the pelvic girdle before you reach the cervix that consists of not only cartilaginous rings, but folds of tissue as well. And, once the cervix is penetrated, we want to inseminate in the same horn in which the maturing follicle is present. The female that had been bred by a male was ultimately more tolerant of the pipette being held and directed to the insemination site, so she progressed at a more rapid rate than her conspecific. The training for pipette procedure proceeded slowly, as with the conditioning for transrectal ultrasound and gastroscope. Eventually we were able to condition one of the females to insertion of an arm into the reproductive tract with pipette grasped within the palm of the hand so she no longer requires the gastroscope for insemination procedures. The second female has not progressed to this point, and her insemination procedures still require the gastroscope.

Communication between individuals is limited to essential information, but a steady dialogue is kept between the project team member managing the rhino and the reproductive physiologist coordinating the insemination procedure. To date, we have successfully performed the transcervical insemination technique in both greater one-horned rhinoceros females. The one female is now able to be inseminated via hand-held pipette, but the second one still requires the gastroscope for the insemination procedure.

Spermatozoa from rhino species have been successfully electroejaculated and cryopreserved using a standard hoofstock semen freezing protocol (Roth, 2001; Stoops, 2006; Stoops, pers. communication). All spermatozoa is evaluated for evidence of morphologic defects, total sperm number and motility prior to storage in subzero temperatures (Blanchard, pages 155, 157). The aforementioned spermatozoal characteristics are then re-evaluated after thawing to determine quality and if there was any damage as a result of cryopreservation. At the conclusion of each insemination procedure, we verify the semen deposition site by transrectal ultrasonography and subsequent ultrasound(s) are done to verify ovulation.

If fertilization does not occur, there will be an accumulation of fluid in the uterine lumen approximately 15 days after ovulation. Generally, this fluid accumulation coincides with the reduction in the level of progesterone signaling the female has concluded this cycle (Stoops, 2004). But, if fertilization did occur, the embryonic vesicle could be apparent as early as 15 days after ovulation as in other rhino species (Stoops, pers. communication). The fertilization of the egg will result in the corpus luteum being maintained and it will dictate consistent production level of progesterone. In African rhino species, a decline in progesterone levels is commonly seen prior to parturition and, to a limited extent, in Asian species as well (Shaffstall, 2002; Stoops, pers. comm.). In addition, we hope to assess development of placental mineralization as another factor to be used in narrowing the parturition timeline (Shaffstall, 2002). With confirmation of fertilization, parturition timelines will be finalized and gestational guidelines will be implemented.

This project, however trying at times, has served to foster a sense of comradery between the reproductive physiologist and her project team while all of us are gaining valuable knowledge about this endangered species. We would like to share this knowledge with our colleagues and offer this summation:

- Estrus cycle is approximately 45 days (but range from 35–60 days)
- Multiple follicles can develop, but until one reaches approximately 6cm in size it does not become “dominant”
- Maximum follicle size can reach 10–12cm in size
- Common behavioral estrus signs generally are: loss of appetite, increased pacing activity, “whistling” vocalizations, “squirting” urination pattern, vulvular “winking”
- Correlation of urinary metabolite levels with ultrasonography monitoring of ovarian structures provides a more complete portrayal of reproductive events
- Anovulatory cycles can occur, but may not be evident if there is only a reliance on urinary metabolite monitoring to determine reproductive status
- During the 14-day follicular phase, we provide females exposure to at least male feces for olfactory and pheromone stimulation
- Artificial inseminations can be done with good quality spermatozoa that has been collected via electroejaculation and frozen using hoofstock semen freezing protocol
- Artificial insemination site is intrauterine deposition into the horn of the ovary containing maturing follicle
- As with other rhinoceros species, embryonic vesicle could be evident as early as Day 15, if fertilization has occurred
- Greater one-horned rhinoceros can be conditioned to accept artificial insemination without anesthesia with a patient but persistent keeper staff who openly communicates between themselves and the reproductive physiologist in charge of the project.

Greater One-horned Rhinoceros Artificial Insemination Project Team:

Dr. Monica Stoops, Reproductive Physiologist (CREW @ Cincinnati Zoo and Botanical Garden)

Randy Pairan, Ungulate Department Head Keeper

Ungulate Keepers: Steve Yelverton, Wendy Shaffstall, Renee Carpenter, Jason Faessler

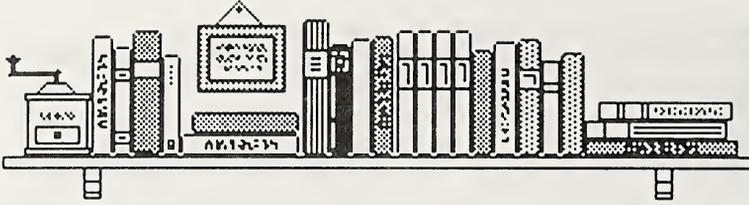
Special thanks to:

Dr. Monica Stoops who encouraged our interest, essential involvement, championed the keeper's integral role in this project and graciously agreed to proofread this manuscript for me; Dr. Terri Roth for being supportive of this project and the vital need for keeper's involvement; Ed Spevak, Conservation Program Manager for Mammals, who patiently accommodates the schedule fluctuations that must occur to enable us to participate in this ground-breaking project.

And finally, enough thanks cannot be given to my fellow team members who support each other during the trials and tribulations, and put their lives on hold as each cycle progressed toward the insemination timetable.

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Book Reviews

Grains of Golden Sand - Adventures in War-Torn Africa

By Delfi Messenger 2006

Muanda Kizito (Illustrator)

The Fine Print Press, Honolulu, HI (available at amazon.com)

ISBN 13 - 978-1-888960-35-8

416 pgs. Hardback \$21.95

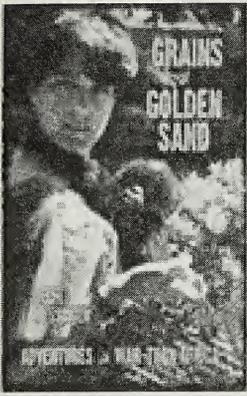
*Review by Geoff Creswell, Emporia, KS
worked in primate rehabilitation in Burundi,
the Congo and Nigeria*

This hectic and evocative memoir hits the ground ducking bullets in Kinshasa, Zaire. Messenger cared for a group of young bonobos on the grounds of the National Institute of Biomedical Research (INRB) where she worked and lived. Messenger's ingenuity and dedicated staff kept the facility and apes intact through the bloodbaths and growing pains as Zaire fell apart and struggled to put itself together as the Democratic Republic of the Congo.

Messenger landed at the INRB during the last months of a late '1980's Peace Corps tour—establishing rodent colonies for monkey pox research. She later subsidized herself as an ersatz veterinarian and the accumulated young bonobos were refugees of the local bushmeat and pet trades. Messenger somewhat controversially chose to go it alone and negotiated the transfer of half of the bonobos to a European zoo in the face of daunting logistics. Animal work is political and it is virtually guaranteed that not everyone is going to agree with the methods or results no matter how legitimate the intentions.

The book is highly personal—covering childhood, a domestic zoo career and more than a decade of life and labor in one of world's most notorious countries. Messenger obviously has a quick, poetic and intense brain. Descriptions of the lunacy, chaos and conflict of animal work in urban Africa puts the reader smack in the middle of the sights, smells and ant swarms of the meleé. The book is well written, but it can be a little hard to follow the many characters and disjointed timelines over the years covered. The numerous footnotes are distracting but very informative - they evoke the multi-tasking that working in Africa required. The photos and layout are fascinating and effective.

Animal work in Africa can be the worst zoo day imaginable OD'ed on steroids. Comedy and mortal peril tend to wander hand in hand. There isn't much that is politically correct about any of the material - from bonobo sexual social graces to the death and poverty and ever-present stratification between ex-patriates, who can leave when they want, and the Africans who have no choice but to stay. Messenger's successes were against the odds. It is equally amazing that any Zaireans maintained enough hope to help.



This book is as interesting for what it says as for what it does not. While there were multiple projects involved with bonobos in the region, the book shows little or no obvious cooperation between them. There is an old East African saying "When elephants fight - the grass suffers." Reading between the lines, one sees the egos and infighting and the inevitable personality politics and tug-of-war between governmental, zoologic, international, scientific and welfare organizations. When there is too much competition for the same limited resource, it is the resource that generally loses.

Africa is all about process and success can sometimes be relative. In Africa or America, incompetent people are incompetent, good people are good and terrible times bring out the worst in some and the best in others. I couldn't read the book without transposing what I know from the American zoo business over the events of *Grains of Golden Sand*. I guess my own Africa experiences showed me that there are few differences in the nature of human conduct - just in the matter of degree. There are times I miss the honesty of doing business in Africa. It was easier to understand human shortcomings against a violent backdrop of poverty and disease, and it made heroism and success that much sweeter.

Anyone who works in the captive animal business needs to buy and read this book to put things in perspective - how the world works where the sidewalk ends. It might disabuse some readers of the notion that work in Africa is all safaris and beer. Neither wildlife conservation nor animal transactions are as simple or glamorous as they appear on TV. Messenger vividly details how a small contribution from the outside can make a huge difference, how the best intentions can get in the way and how things can always get worse. Her sense of humor and passion show in her effort to explain how the difficulty of just surviving the day complicates the task of draining the swamp.

Editor's note: Delfi Messenger is currently the Director of Animal Programs at the Jacksonville Zoo and Gardens, Jacksonville, FL.

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Answers to Training Crossword Puzzle

DOWN: 1) teaching; 2) negative; 3) tactile; 4) moiaung; 5) capture; 6) audio; 7) positive; 8) baiting; 9) bonus; and 10) Pryor. ACROSS: 1) environment; 2) extinction; 3) contact; 4) mimicry; 5) approximation; 6) out; 7) bridging; 8) group; 9) variety; and 10) SPIDER.

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.

Teaching Zoo to House Endangered Butterfly

An endangered species captive-rearing program will begin this year at America's Teaching Zoo at Moorpark College. Last fall, Jana Johnson, part-time biology faculty, and Michlyn Hines, zoo operations supervisor, obtained a U.S. Fish and Wildlife Service permit for the zoo to establish a secondary captive rearing site for the endangered Palos Verdes Blue Butterfly.

"The Palos Verdes Blue Butterfly (*Glaucopsyche lygdamus palosverdesensis*) is arguably the most endangered butterfly in the world," said Johnson. The school is also organizing a documentary team to film the captive rearing and restoration efforts of the butterfly. Johnson has been working on this project with the Defense Logistics Agency and the Urban Wildlands organization for years. Her participation in the project was lauded by Gale Norton, former Secretary of the Interior, at the White House Conference on Cooperative Conservation in August 2005.

"If we experience the population explosion [of the butterfly] in 2007 that we experienced in 2006, we will be able to re-release [the insect] to the wild in 2008," Johnson said. *Source: Moorpark Acorn News (www.mpacorn.com)*

Illegal Hunting "Wiping Out Mongolia's Mammals"

Illegal hunting and trade is pushing some Mongolian animals like the snow leopard (*Uncia uncia*) to the brink of extinction, conservationists recently warned. The saiga antelope (*Saiga tatarica*), wild camel (*Camelus bactrianus ferus*), and Gobi bear (*Ursus arctos gobiensis*) are also highly threatened, along with other mammals and 11 species of fish, according to the first comprehensive Red List for Mongolian mammals launched on December 12 2006 at the Zoological Society of London (ZSL). There are fewer than 50 Gobi bears, only about 460 wild camels and an estimated 1,000 snow leopard left in Mongolia where half the 2.8 million people are nomadic herders. International trade appears to be largely responsible for the declines, especially for large mammals, which date back to the early 1990s after the Soviet Union fell and Mongolia shifted to a free market economy.

Dr. Jonathan Baillie, ZSL Research Fellow, commented: "Mongolia was once a refuge for Central Asia's mammals, but the Mongolian steppe is now being silently cleared of its wildlife. Even the marmot (*Marmota sibirica*), a large rodent, is estimated to have declined by more than 75% over the past 12 years, due to hunting." Dr Baillie added: "In addition to assessing the status of the species, ZSL in collaboration with our local partners have produced a series of action plans for all of the threatened species. These set out current conservation measures and additional actions that must be taken to prevent further declines. We are confident that current trends can still be reversed, as has been demonstrated by the recent success of the work on the Przewalski's horse (*Equus caballus przewalskii*). The Przewalski's horse, the last of the wild horses, was classified as extinct in the wild in 1996 by IUCN World Conservation Union, but following reintroductions in Mongolia now has a thriving wild population of over 250 individuals."

The Red List compilation was initiated and funded by the World Bank and implemented by ZSL in collaboration with the National University of Mongolia, the Mongolian Academy of Sciences and the Ministry of Nature and Environment. *Sources: Reuters 11 Dec 2006 by Patricia Reaney and ZSL website (www.zsl.org)*

Lead Bullet Ban Proposed For Condor Range Gaining Traction

A long-running debate about whether lead from hunters' bullets is poisoning endangered California condors (*Gymnogyps californianus*) is heading for a political showdown. Armed with new scientific

studies, environmentalists and wildlife biologists may be gaining the upper hand. The California Department of Fish and Game staff has recommended that hunting with lead bullets be banned everywhere in the California condor range, a vast area of about 20 counties that extends from the



California condor at
San Diego Wild Animal Park
Photo by Chuck Szurlo

Bay Area to Los Angeles and takes in parts of the Tehachapi Mountains. The department's recommendation to the California Fish and Game Commission was cheered by environmental groups, which have been seeking such a ban for years but were rejected by the department and the commission in 2005. The commission, a five-member body appointed by the governor, heard public testimony on the plan at its April 13 meeting in Bodega Bay. It is expected to vote in May or June, with many observers expecting it to approve the ban.

What changed? The science, state biologists say. "There wasn't enough science and other information before to show a causal link between legitimate hunting and risk to condors from lead poisoning," said Dale Steele, program manager for wildlife species conservation for the Fish and Game department. "It's still not very well understood, but there is additional information in publications that have come out since then." Environmental groups and many biologists have long believed that the condors, which are highly endangered and feed by scavenging dead animals, are poisoned when they ingest lead fragments after eating dead deer, wild pigs and other animals shot by hunters. "Lead paralyzes the digestive tract. The birds starve to death," said Kelly Sorenson, executive director of the Ventana Wildlife Society, a nonprofit that has reintroduced dozens of condors to Big Sur and the Pinnacles National Monument near Hollister. Sorenson said 13 condors have been confirmed killed by lead in Arizona and California since the birds were reintroduced to the wild 15 years ago. Roughly one-third of the birds in Northern California have been found with high, sometimes dangerously high, lead levels in their blood. Source: Paul Rogers, MEDIANEWS STAFF, Inside Bay Area 28 March 2007

Egg Hunt 'Not For Faint-Hearted'

A team at Beekse Bergen Safari Park in the southern Netherlands has successfully harvested eggs from Ans, a 1900kg southern white rhino (*Ceratotherium simum simum*). The plan is now to inseminate the eggs, then freeze them before placing the fertilized eggs in "surrogate mother" rhinos. How do you remove eggs from a rhinoceros that tips the scales at nearly two tons? "It's not a job you want to try on your own," said Jacques Kaandorp, a veterinarian who was assisted by a team of other experts during the procedure. Ans was anesthetized and laid on her side in an enclosure before the eggs were removed from her ovaries, Kaandorp said.

White rhinos, which have two horns, are one of world's largest land animals after elephants. They can grow to around 2700kg. Kaandorp tried the same egg harvesting technique last year but failed. He believes the latest procedure was the first time eggs have successfully been harvested from a white rhino. The southern white rhino was all but wiped out by hunting but its numbers have rebounded to some 12,000 thanks to careful conservation efforts, said Craig Hilton-Taylor, who works on the World Conservation Union's Red List of Threatened Species in England. Kaandorp said he hopes the egg harvesting technique also could be used on northern white rhinos (*Ceratotherium simum cottoni*), which the Red List considers to be critically endangered, with only a handful left in the wild. Whoever the lucky surrogate mothers are, they can look forward to an 18-month pregnancy followed by giving birth to a calf weighing in at around 65kg. Source: The Associated Press 30 March 2007

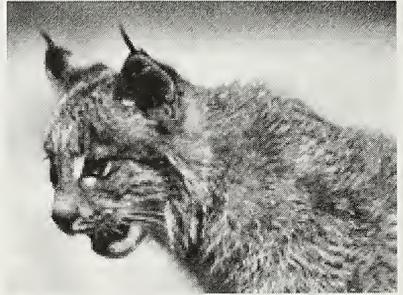
Herds of Arabian Oryx to be Released into Wild

After the successful release of captive-bred falcons and houbara bustards (*Chlamydotis undulata*) into the wild, the Environment Agency-Abu Dhabi (EAD) has drawn up another plan for the development of wildlife - this time herds of Arabian Oryx (*Oryx leucoryx*) will be released in a desert area of the emirate. According to the EAD over the next four years a herd of 100 captive-bred Arabian Oryx will be introduced back into their natural habitat after 40 years of extinction in the wild. This reintroduction is part of the EAD's long-term commitment to conserve biodiversity. The project will be termed a success when the status of this beautiful creature in the wild is significantly improved.

“Our Terrestrial Environment Research Centre has been releasing some of these oryxes in the hope of creating a self-sustaining population that roams freely in our deserts,” said Majid Al Mansouri, Secretary-General of the EAD. For the new project the agency has already submitted a proposal to the Abu Dhabi Executive Council to declare the selected territory a protected area. Each released animal will be continuously monitored and breeding closely observed. The agency will set up desert rangers to patrol the protected areas. According to the agency, the release sites have been very carefully chosen based on several criteria. More than 30 shelters and feeding stations have been temporarily installed to provide the oryxes with shade and water. This is also done to support the animals in their learning process of surviving in the wild. These shelters and feeding stations will be gradually removed as the oryx learns to depend on its natural environment for survival, as it did years ago in the UAE. The project is being launched in partnership with Al Ain Zoo which has been helping to select the release areas and have even donated some oryx from the zoo. The zoo has also helped in medical check-ups and vaccinations. Historically, the Arabian Oryx roamed in the Nafud area in the northern part of the Arabian Peninsula and the Empty Quarter. *Source: Nissar Hoath, Staff Reporter, Gulf News 26 March 2007*

Near-Extinct Cat Claws Back From Brink

The world’s most endangered cat, the Iberian lynx (*Lynx pardinus/Felis pardina*), may be making a comeback. Five Iberian lynx were born in captivity in Andalusia in southern Spain over two days in March 2007, reviving hopes that Spain’s increasingly successful lynx breeding program may pull the species back from extinction. A further three captive lynx are pregnant, prompting lynx biologists to claim that this year could mark the species’ turning point. Three Iberian lynx were first born in captivity in 2005 to Saliega, who has given birth to two more cubs. One of Saliega’s 2005 cubs was killed in a fight with her brother, so biologists have increased monitoring of the newborn cubs to ensure that none dies unnecessarily.



*Photo courtesy of Stock.xchng
(<http://www.sxc.hu/>)*

“They are under surveillance 24 hours a day,” said Astrid Vargas, director of El Acebuche breeding centre in the Andalusian province of Huelva. If such trends of a rising lynx birth rate continue, Spain’s Environment Ministry hopes to begin releasing the cats into the wild from 2010. Populations of the Iberian lynx in Spain have fallen from 100,000 at the start of the 20th century to just 150 at the end of 2006. The animal, which once ranged across Europe, is confined in the wild to two small, fragmented communities close to Spain’s border with Portugal. *Source: Anthony Ham, The Age 29 March 2007*

Group Seeks Protection for Penguins and Murrelets

A petition to get 12 penguin species threatened and endangered status was filed in November by the Center for Biological Diversity, a conservation group. Among the species are the Emperor penguin (*Aptenodytes forsteri*), popularized by the animated film “Happy Feet” and the documentary “March of the Penguins,” and the Humboldt penguin (*Spheniscus humboldti*). Penguins are found in the southern hemisphere. Melting sea ice is leaving Emperor penguins less space to breed and raise their young. Other problems include pollution and the fishing industry. In the case of the Humboldt penguin in South America, the primary threats are fishing by humans and harvesting of guano, or bird droppings, said Tim French, deputy director for animal programs at Roger Williams Zoo in Providence, R.I.. Penguins use guano for nests, while humans use it as fertilizer. Last year, the zoo donated \$500 to help sustainable guano harvesting in Peru. The penguin petition is undergoing a 90-day review to see whether it has substantial scientific merit, said Valerie Fellows, a spokeswoman for the U.S. Fish and Wildlife Service in Washington, D.C.

The other bird is the Kittlitz’s murrelet (*Brachyramphus brevirostris*), a small diving auk found in Alaska and Russia. The center first campaigned for the bird in 2001. The decline of the Kittlitz’s murrelet population may be related to melting glaciers, fisheries and oil spills, according to the U.S. Fish and Wildlife Service. A proposal to consider listing the Kittlitz’s murrelet will be prepared once financing becomes available, said Bruce Woods, a spokesman for the U.S. Fish and Wildlife Service, Alaska region. *Source: Michelle J. Lee, Knoxville News Sentinel 31 March 2007*

Successful Recovery Efforts Bring Yellowstone Grizzly Bears Off the Endangered List

After nearly disappearing three decades ago, grizzly bears (*Ursus arctos*) are thriving in the Yellowstone ecosystem and no longer need the protection of the Endangered Species Act, Deputy Interior Secretary Lynn Scarlett announced on March 22, 2007. "The grizzly's remarkable comeback is the result of years of intensive cooperative recovery efforts between federal and state agencies, conservation groups, and individuals," Scarlett said. "There is simply no way to overstate what an amazing accomplishment this is. The grizzly is a large predator that requires a great deal of space, and conserving such animals is a challenge in today's world. I believe all Americans should be proud that, as a nation, we had the will and the ability to protect and restore this symbol of the wild." The U.S. Fish and Wildlife Service is removing the Yellowstone population of grizzly bears from its status as "threatened" on the U.S. list of threatened and endangered species. Four other grizzly populations in the lower 48 states have not yet recovered and will continue to be protected as threatened species under the Act.

Among arguments against delisting, opponents cite global climate change as an unheeded threat to the grizzly's continued recovery. Warming of the region, evidence suggests, is increasing the range of pine beetles allowing them to kill an increasing number of whitebark pine trees, the seeds of which grizzlies rely on. Earthjustice attorney Doug Honnold said in a release, "(Grizzlies) live in a world of shrinking habitat due to warming weather. The Fish and Wildlife Service didn't see global warming coming and has no game plan for the loss of whitebark pines and the related harm to grizzlies." In response, FWS biologist Chris Servheen said, "White bark pine is not an annually productive food for Grizzly Bears," adding, "(The Grizzly's) long-term survival is not dependent on the production of white bark pine cones." The question of whether grizzlies in the Yellowstone ecosystem will now be subject to hunting remains unclear. "If it was to happen it would be no more than a handful," Servheen said. Sources: *U.S. Fish & Wildlife Service & Matthew Frank, New West 23 March 2007*

gutting the Endangered Species Act

The U.S. Fish and Wildlife Service is maneuvering to fundamentally weaken the Endangered Species Act, its strategy laid out in an internal 117-page draft proposal. The proposed changes limit the number of species that can be protected and curtail the acres of wildlife habitat to be preserved. It shifts authority to enforce the Act from the federal government to the states, and it dilutes legal barriers that protect habitat from sprawl, logging or mining. "The proposed changes fundamentally gut the intent of the Endangered Species Act," says Jan Hasselman, a Seattle attorney with Earthjustice, an environmental law firm. "This is a no-holds-barred end run around one of America's most popular environmental protections. If these regulations stand up, the Act will no longer provide a safety net for animals and plants on the brink of extinction."

In recent months, the Fish and Wildlife Service has gone to extraordinary efforts to keep drafts of regulatory changes from the public. All copies of the working document were given a number corresponding to a person, so that leaked copies could be traced to that individual. An e-mail sent in March from an assistant regional director at the Fish and Wildlife Service to agency staff, asking for comments on and corrections to the first draft, underscored the concern with secrecy: "Please Keep close hold for now. Dale [Hall, director of the U.S. Fish and Wildlife Service] does not want this stuff leaking out to stir up discontent based on speculation." Chris Tollefson, a spokesperson for the FWS, says that while it's accurate to characterize the agency as trying to keep the draft under wraps, the agency has every intention of communicating with the public about the proposed changes; the draft just hasn't been ready. And, he adds, it could still be changed as part of a forthcoming formal review process. Administration critics characterize the secrecy as a way to maintain spin control, says Kieran Suckling, policy director of the Center for Biological Diversity, a national environmental group. "This administration will often release a 300-page-long document at a press conference for a newspaper story that will go to press in two hours, giving the media or public no opportunity to digest it and figure out what's going on," Suckling says. "[Interior Secretary Dirk] Kempthorne will give a feel-good quote about how the new regulations are good for the environment, and they can win the public relations war."

Written in terse, dry legal language, the proposed draft doesn't make for easy reading. However, the changes, often seemingly subtle, generally serve to strip the Fish and Wildlife Service of the power to do its stated job: to protect wildlife. Some verge on the biologically ridiculous, say critics, while others are a clear concession to industry and conservative Western governors who have long

complained that the act degrades the economies of their states by preventing natural-resource extraction. One change would significantly limit the number of species eligible for endangered status. Currently, if a species is likely to become extinct in “the foreseeable future” — a species-specific timeframe that can stretch up to 300 years — it’s a candidate for Act protections. However, the new rules scale back that timeline to mean either 20 years or 10 generations (the agency can choose which timeline). For certain species with long lifespans, such as killer whales, grizzly bears or wolves, two decades isn’t even one generation. So even if they might be in danger of extinction, they would not make the endangered species list because they’d be unlikely to die out in two decades. Additional tweaks in the law would have a major impact. For instance, the proposal would narrow the definition of a species’ geographic range from the landscape it inhabited historically to the land it currently occupies. Since the main reason most plants and animals head toward extinction is due to limited habitat, the change would strongly hamper the government’s ability to protect chunks of land and allow for a healthy recovery in the wild. *Source: Rebecca Clarren, Salon.com 27 March 2007*

The FWS proposal can be viewed here: http://www.peer.org/docs/doi/07_27_3_permits.pdf

Exotic Animals Bill Heads to House

Iowans who’d like to care for exotic animals might want to consider working for a zoo, joining a circus or becoming a veterinarian. A recent bill approved by the Senate would impose a statewide ban on the purchase or possession of “dangerous” wild animals - with a number of exceptions. The proposed ban, approved on a 48-0 vote, would apply to a list of animals worthy of Noah’s Ark: wolves, coyotes, jackals, hyenas, lions, tigers, cougars, leopards, cheetahs, ocelots, bears, pandas, rhinoceroses, elephants, alligators, crocodiles, venomous snakes, pythons and anacondas, and “primates other than humans.” The legislation would allow existing owners to keep their animals under a new registration system requiring the payment of a fee. Owners would be required to have an electronic identification device implanted in the animals. Zoos, circuses, fairs, research facilities, animal shelters, veterinary offices and other places listed in the bill would be exempt from the ban. Senate File 564 goes to the House for more debate. *Source: Des Moines Register 4 April 2007*

Conservationists Urge China to Maintain Tiger Trade Ban

The Wildlife Trust of India (WTI) has joined an international group of 28 tiger conservation groups exhorting China to maintain its ban on tiger trade. A recent petition by tiger farm owners had urged the Chinese government to re-open trade in tiger parts. Chinese businessmen who would profit from the tiger trade are putting pressure on Chinese government to overturn its 1993 ban on trading products made from tigers. ‘Lifting the ban would re-ignite the demand for tiger products thereby threatening the existence of wild tigers across Asia,’ the group said in a statement.

China was the world’s largest consumer market for tiger products till 1993, when domestic trade in tiger parts was formally banned. China’s progress in tiger conservation, especially tiger trade, would almost certainly be undone if China’s markets for tiger products were reopened, said a report by TRAFFIC, the wildlife trade monitoring programme of WWF and IUCN - The World Conservation Union, published last month. According to the TRAFFIC study, less than 5,000 tigers are left in the wild, and less than 50 remain in China. Tiger parts have been used for ages in making traditional Chinese medicine. But key members and practitioners of traditional Chinese medicine have dismissed the claim that tiger parts are an essential ingredient. Less than 3% of traditional medicine shops across China were found to offer tiger bone medicines, a recent market survey noted. However, popular restaurants in China serve tiger meat as ‘meat of the king’ and are highly recommended by

Three Arrested in Connection with Killing of 13 Asiatic Lions

Police of India have arrested three men who helped kill 13 Asiatic lions (*Panthera leo persicus*) in the past two months around the only sanctuary for this rare animals in Western India. All of the men detained this week were suspected to be local contacts for lion poachers, said Kuldeep Narain Sharma, a senior police official, adding one was a forest guard at the sanctuary, nearly 185 kilometers (115 miles) south of Ahmadabad, the main city in western Gujarat state. The lions often cross the park’s boundaries to hunt for food and water. Poachers track them and lay a trap. After they catch the animals, they remove their claws, bones and skulls - for sale in oriental markets. The claws are also sometimes used for amulets in India, according to the Wildlife Protection Society of India. Asiatic lions once roamed much of Asia but only about 350 remain, all of them in the Gir National Park, and the recent killings have raised fears for the future of the species. Asiatic lions can be differentiated from African lions by a characteristic skin fold on their bellies, and the males have thinner manes. *Source: PRAVDA 4/4/07 via AP*

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