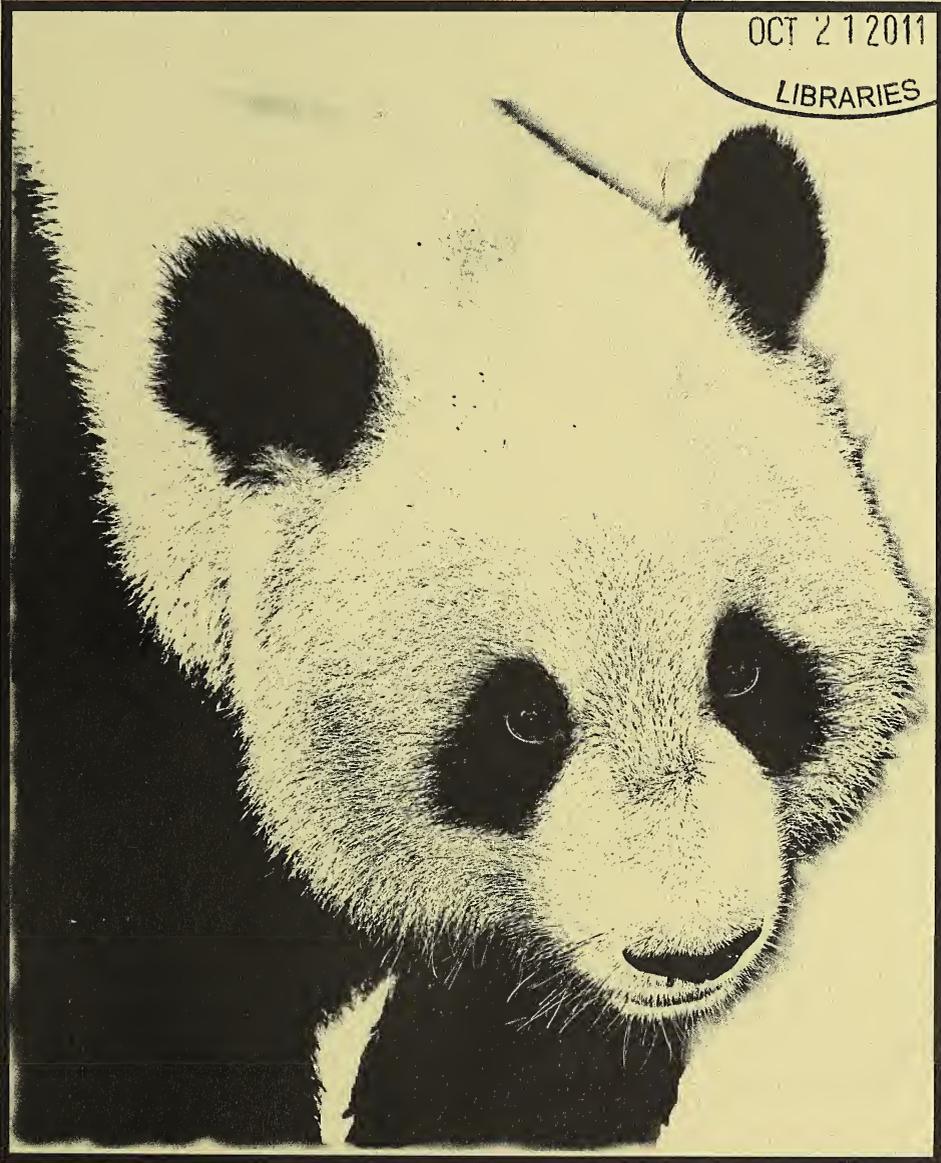


# ANIMAL KEEPERS' FORUM

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**October 2011**

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

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

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**October 2011**  
**Vol. 38, No. 10**

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# Table of Contents

About the Cover/Information for Contributors.....	494
Scoops & Scuttlebutt.....	495
New Orleans Chapter Sponsorship Recognition.....	496
AAZK Announces New Members.....	497
ICZ 2012 Second Call for Papers.....	497
Coming Events.....	498
From the President.....	500 - 501
Trees for You and Me - Chapter Challenge.....	502
From the Executive Director - Chapter Recognitions.....	504 - 505
AKF Editor Receives Lifetime Achievement Award.....	506 - 507
2011 National AAZK Conference Wrap-up.....	509 - 510
Bowling for Rhinos 2011 Update/Trip Recipients.....	512
Training Tales ( <i>Harpy Eagle</i> ).....	513 - 517
Bird Window Collision Monitoring at the Philadelphia Zoo: Setting Up an AAZK Citizen Science Project.....	518- 521
AKF Dedicated Six-Issue Combo Pack on Sale.....	522
Alligator Care at the Virginia Living Museum.....	523 - 529
Chapter News.....	529
Enrichment Options ( <i>Art: Enrichment for Animals and Keepers Alike</i> ).....	530 - 531
Conservation/Legislative Update.....	532 - 540



38th Anniversary - 1974 - 2012

## MISSION STATEMENT

(Revised April 2009)

American Association of Zoo Keepers, Inc.

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

This month's cover features the unique artwork of Camille Dorian, a caretaker at Monkey Matters in San Diego, CA. This cover was produced from one of her photographs that was taken into a graphics program on her computer where she generated the artwork. Featured is a Giant Panda (*Ailuropoda melanoleuca*). Giant pandas live in a few mountain ranges in central China, in Sichuan, Shaanxi, and Gansu provinces. They once lived in lowland areas, but farming, forest clearing, and other development now restrict giant pandas to the mountains. Giant pandas live in broadleaf and coniferous forests with a dense understory of bamboo, at elevations between 5,000 and 10,000 feet. The giant panda, a black-and-white bear, has a body typical of bears. It has black fur on ears, eye patches, muzzle, legs, and shoulders. The rest of the animal's coat is white. Although scientists do not know why these unusual bears are black and white, some speculate that the bold coloring provides effective camouflage into their shade-dappled snowy and rocky surroundings. The panda's thick, wooly coat keeps it warm in the cool forests of its habitat. Giant pandas have large molar teeth and strong jaw muscles for crushing tough bamboo. Many people find these chunky, lumbering animals to be cute, but giant pandas can be as dangerous as any other bear. About the size of an American black bear, giant pandas stand between two and three feet tall at the shoulder (on all four legs), and reach four to six feet long. Males are larger than females, weighing up to 250 pounds in the wild. Females rarely reach 220 pounds. A wild giant panda's diet is almost exclusively (99 percent) bamboo. The balance consists of other grasses and occasional small rodents or musk deer fawns. In zoos, giant pandas eat bamboo, sugar cane, rice gruel, a special high-fiber biscuit, carrots, apples, and sweet potatoes. Adult giant pandas are generally solitary, but they do communicate periodically through scent marks, calls, and occasional meetings. Giant pandas reach breeding maturity between four and eight years of age. They may be reproductive until about age 20. Female pandas ovulate only once a year, in the spring. A short period of two to three days around ovulation is the only time she is able to conceive. Calls and scents draw males and females to each other. Female giant pandas give birth between 95 and 160 days after mating. Although females may give birth to two young, usually only one survives. Offspring stay with their mothers from one and a half to three years. The giant panda is listed as endangered in the World Conservation Union's (IUCN's) Red List of Threatened Species. There are about 1,600 left in the wild. More than 300 pandas live in zoos and breeding centers around the world, mostly in China. Thanks, Camille!

Source: <http://nationalzoo.si.edu/animals/giantpandas/pandafacts/default.cfm>

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

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

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

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**AAZK website Address: [www.aazk.org](http://www.aazk.org)  
BFR Website: <http://aazkbfr.org>**

# *Scoops & Scuttlebutt*



## **Conservation Committee Seeks New Members**

The AAZK National Conservation Committee is grateful for the growing interest in our work, and we are excited to announce that we are seeking new members to join us! The Conservation Committee was founded four years ago with the purpose of fostering the relationship between zookeepers and the conservation of wildlife and their habitats. Some of the projects we have undertaken since then include, but are not limited to:

- Coordination of the Conservation Station column in *Animal Keepers' Forum*.
- Advising the AAZK Board of Directors on the management of the Bowling for Rhinos Conservation Resource Fund.
- Establishing the AAZK Certificate of Merit in Conservation Award in partnership with the Awards Committee.
- Establishing guidelines to increase the environmental friendliness of our conferences and Association.
- Organizing and presenting conservation workshops at AAZK national conferences.
- Establishing an online database of opportunities for AAZK members to participate in conservation projects.

We'd be particularly interested to hear any suggestions you may have for additional projects you'd like us to undertake, and of any skills or background knowledge you may have that could help us execute those projects. Letters of interest, résumés, and inquiries may be sent to Chair Amanda Kamradt at [amanda.kamradt@aazk.org](mailto:amanda.kamradt@aazk.org). Deadline to apply is November 18, 2011. We appreciate your interest in the AAZK National Conservation Committee!

## **BFR Information Needed**

The National AAZK Bowling For Rhinos coordinator, Patty Pearthree is requesting that each Chapter choose a Bowling For Rhino contact person for 2012 including Chapters that do not currently hold an event.

Once chosen, please forward the contact name, email address and associated Chapter name to the following email address: [ppear3@pear3.org](mailto:ppear3@pear3.org) (Patty Pearthree). And please also send an email to the BFR yahoo groups email coordinator: Barbie Wilson: [rhinobarbie@hotmail.com](mailto:rhinobarbie@hotmail.com)

If you join the BFR yahoo email group, we will be able to contact you with up to date information, changes or questions/suggestions on how to increase the success of your event. We will also include information on how to join BFR if you are currently not involved. We will be seeking questions/issues/topics for next year's BFR workshop via the yahoo groups email. We hope you can join us to increase the success of BFR.

Additionally, BFR has been added to the Mother Earth fundraising site as a beneficiary. Twenty-five percent (25%) will go to BFR if the shopper chooses us. To view or shop go to: [www.motherearthfundraising.com](http://www.motherearthfundraising.com) and organization to select is «American Association of Zoo Keepers Bowling For Rhinos». Please pass this information along, list it on fliers, etc. Thanks.

## AAZK Chapters Help Underwrite AKF Production

During the 2011 Chapter Recharter process earlier this year, five AAZK Chapters generously sent in donations to help cover the costs associated with the production of *Animal Keepers' Forum*. We would like to thank them for their support in producing the Association's monthly professional journal.

For the October 2011 issue of *AKF* we wish to thank all the members of the New Orleans Chapter of AAZK, New Orleans, LA. ~ *AKF Editor*

The New Orleans Chapter of AAZK has been very busy this year. We teamed up with the Audubon Zoo's Earthfest to get a massive amount of used cell phones donated toward Eco-Cell. As done previously, all these funds were donated to the Dian Fossey Gorilla Fund.

We also have introduced a new fundraiser by selling paintings done by our zoo's sea lions. It has been a huge success and the money raised from this will go toward marine mammal stranding organizations.



This year, our Chapter was also able to sponsor three of our members to attend the AAZK National Conference in San Diego.

As always, this time of year we are preparing for our big festival season here in New Orleans and are excitedly awaiting Boo at the Zoo and Swampfest where we will hopefully have very successful fundraising experiences.

Our Chapter hopes to continue to donate to various conservation organization as well as support our members and zoo with future zoo keeping improvements.

~ *Abbi Davis, Treasurer*  
*New Orleans AAZK Chapter*

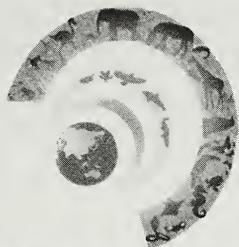


NATIONAL  
ZOO KEEPER WEEK July 15 - 21, 2012

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See helpful info at [www.aazk.org](http://www.aazk.org)

Look under "About Us" on the homepage.



**International  
Congress  
on  
Zookeeping  
2012  
Singapore**

*Many Voices. One Calling*

**Second Call for Papers**

The 4th Conference of the International Congress of Zookeepers will be held in Singapore in 2012, hosted by Wildlife Reserves Singapore.

You are invited to submit abstracts of papers, posters & workshops on any aspect of zoo work.

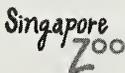
Abstracts for oral and poster presentations should be written in English, no more than 600 words long in MS Word® format. If you want to run a workshop focused on developing zoo keeper skills, please send a short description.

Please mark 'ICZ Abstract' and send to: Paul Howse, ICZ Steering Committee at papers@iczoo.org

Estimated attendance is 300 - 400 zoo professionals from at least 20 countries.

**Deadline for abstracts is 1st April 2012**

**Conference dates are  
September 9th - 13th, 2012**



**AAZK Announces New Members**

**New Professionals Members**

Jillian Beasley, New York State Zoo (NY); Tricia Campbell, Maryland Zoo (MD); Jacqueline Rushley, Virginia Aquarium (VA); Tori Malick, Dickerson Park Zoo (MO); Chelsey Dobson, Audubon Zoo (LA); Christopher Mooney, San Diego Zoo (CA); and Myles Lamont, Hancock Wildlife Research Center (WA). *(We do not publish the names of new and/or renewing members who do not list their facility on their membership application/renewal form. There were three for this month.)*

**Renewing Contributing Members**

Amy Roberts  
Oak Park, IL

**Renewing Institutional Members**

Prospect Park Zoo  
Brooklyn, NY  
Denise McClean, Director

Cosley Zoo  
Wheaton, IL  
Susan Wahlgren, Director

Hillcrest Park Zoo  
Clovis, NM  
Vince Romero, Director

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# Coming Events

Post Your Coming Events Here  
email to: [akfeditor@zk.kscsxmail.com](mailto:akfeditor@zk.kscsxmail.com)

**October 1-5, 2011 - 30th Annual Conference of the Association of Zoological Horticulture (AZH).** Hosted by the Sedgwick County Zoo, Wichita, KS. Theme: "Bringing the World to the Plains". Seminars and workshops covering a wide range of topics involving Horticulture, Integrated Pest Management, Conservation and Exhibit Design will be presented. Participants within the Horticulture, Arboriculture and Grounds Maintenance fields are encouraged to attend. For information call 316-266-8313, 316-266-8314 or visit [AZH.org](http://AZH.org).

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

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

## 2012

**February 15-18, 2012 - 20th Annual Conference of the International Association of Avian Trainers and Educators** - Hosted by the Minnesota Zoo, Bloomington, MN. Topics will include avian behavior, training, husbandry, conservation, education, enrichment, and show presentation/production. Paper and poster abstract deadline is 1 October 2010. Please mail to: [conference@IAATE.org](mailto:conference@IAATE.org) For detailed Call for Papers and more information visit [www.IAATE.org](http://www.IAATE.org)

**April 12-15, 2012 - Otter Keeper Workshop** - The 5th biennial workshop will be hosted by The Dallas World Aquarium, Any staff working with

any of the freshwater species is welcome to attend. Topics will include: captive management issues, enrichment, training, water quality, health care, nutrition, diet, hand-raising, exhibit design, and lots of sharing of information between keepers. Registration is \$75.00. For more information, see [www.otterkeeperworkshop.org](http://www.otterkeeperworkshop.org)

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

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

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

### Upcoming AAZK National Conferences

2012 - Syracuse, NY - September 23-27

2013 - Asheville, NC - September 22-26

2014 - Orlando, FL - TBD

For information on upcoming AAZK conferences, watch the AAZK website at [www.aazk.org](http://www.aazk.org)

### Upcoming AZA National Conferences

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

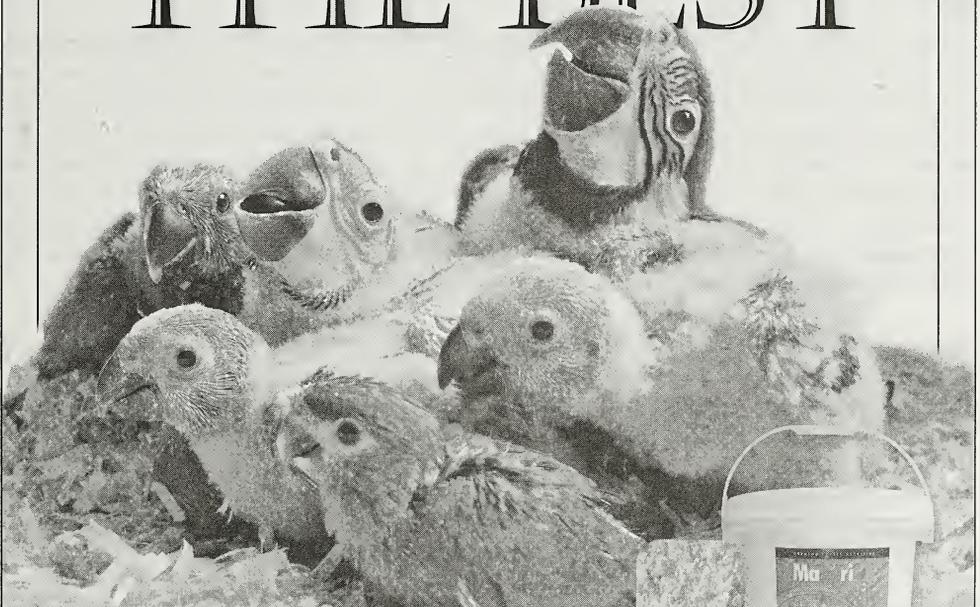
September 7-12, 2013 - AZA 2013 Annual Conference - To be hosted by the Kansas City Zoo, Kansas City, MO.

For more information on AZA Conferences see [http://aza.org/ConfWork/AC\\_Intro/index.html](http://aza.org/ConfWork/AC_Intro/index.html)

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# From the President. . . .

“Change is hard...You cannot teach an old dog new tricks...People resist change, indeed, people hate change.” Featured Workshop leader Chip Heath found this out when he and his brother Dan began to study change in preparation for their book *Switch: How to Change Things When Change is Hard*. Chip shared their findings during a featured workshop at the 38<sup>th</sup> Annual AAZK Conference in San Diego. What they found was that if we really hate change, we have a funny way of showing it. Marriage, having children, iPhones, even dieting in preparation for that beach-worthy body are all usually welcomed changes, albeit difficult.

When we are working towards change, according to Heath, we instinctively gravitate towards trying to fix what’s wrong. What’s broken and how do we fix it? But sometimes that backfires. When it is time for change, said Heath, we must look for the bright spots. Find the things that are working and ask ourselves: What’s working and how can we do more of it?

As I sat in the room listening to Chip’s message about creating change, I glanced around at the workshop attendees and realized that all of us in that room, in fact, all of us at that conference were there because we were committed to effecting some kind of positive change in our Association, our Chapters, our institutions, and especially in the lives of the animals that we care for. Taking this premise even further, it’s safe to say that the membership itself in some way embraces change and even gravitates toward effecting positive change. It’s as obvious as it is true: our membership in this Association, mine included, is our way of seeking out positive changes in the form of professional development and animal care, as well as helping to give conservation projects an added edge in the fight against habitat loss and extinction.

I am preaching to the choir here.

And it’s only fitting that at the San Diego conference, a featured workshop leader would present a workshop on effecting positive change. Fitting, because 44 years prior, seven zoo keepers at the San Diego Zoo decided that they would form a group where the flow of information would be encouraged; where good ideas were not just kept to oneself, but rather shared openly and freely. Their goal was to make a positive impact on animal care and improve the way that they, keepers at the same institution, communicated their successes with one another.

Back to the present. If there was a buzz word at the conference, I am sure that it was “change”. Board Members Shane Good fulfilled his two, four-year terms (his last four as National President) and Gisela Wiggins finished off her term. They were replaced by Deana Walz from The Living Planet Aquarium and Kelly Wilson from Detroit Zoo. Shane leaves the Association as a Board Member but will continue to remain near the heart of the organization as he takes on a new role of Media Production Editor, replacing Susan Chan. Susan is retiring after 30+ years of dedicated service as our *AKF* Editor.

For those of you who attended the conference, the most notable change was the format. In an effort to focus more on skills acquisition and learning opportunities, we decreased the number of paper presentations and increased the number of workshops. As a template for future conferences, we reduced the number of paper presentations to 15 and increased the workshops from our normal average of four or five to 25 workshops. The conference provided scheduled papers in the morning and workshops in the afternoon and evening. Prior to the conference, questions arose. How would attendees react to the new change? We have, after all, been working with the old model for almost 40 years. During the registration process, when workshop registration went live, it was amazing! The response was overwhelming; workshops filled up like stadium seats at the Super Bowl. In the end, there were over 850 individual workshop attendees; mostly registered, some from waiting lists,

others were crashers, walk-ins, and sit-ins. Breaking a 37-year-old mold, San Diego became the "field of dreams" for future conferences, thanks to the hard work of the San Diego Chapter and the AAZK Professional Development Committee.

That "Field of Dreams" was laid in place by AAZK's Professional Development Committee. And as a continuation of those changes, the Professional Development Committee has already begun development of the same caliber of workshops, working in unison with the AAZK Chapter at Rosemond Gifford Zoo. Our goal is to improve your learning opportunities at conferences and change the take-home value of your conference time. Those changes evoke more positive changes, from conference value for the individual to the investment value that conferences become for attending keepers and their institutions.

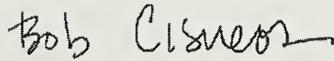
Those conference changes, however, affect only a small percentage of our membership. We recognize that and realize there is value in continuing positive change beyond the conferences. Just two days prior to the conference, Board Members, our Executive Director, and select Committee Chairs and Project Managers assembled for an intensive two-day strategic planning session. During those two days, we defined the vision and mission of the organization, laying out a road map for fulfilling that mission. We defined key issues facing the future of AAZK and developed specific goals and action plans in order to address those issues. In short, we evaluated our mission and crafted a new vision. Our vision is our ideal conception of who we want to be. Our Mission is how we will get there and our goals and action plans are the architectural plans that help us edify our Association and its membership. Our new vision for our Association is as follows:

*AAZK will be the leader in the zoo and aquarium industry fostering professional development and personal connections that advance animal care, animal welfare and conservation.*

It's a bold vision but not unachievable. It is a vision that incorporates leadership, learning, and a personal connection, a networking of kindred spirits, if you will. It involves the Board of Directors, our staff, and most importantly, you the membership. Great changes are on the horizon with you as the beneficiaries. Ultimately, animal care will be the definitive beneficiary.

In the end, as animal care professionals, we do embrace change. We harness change in our routines. Change is a vital component to our enrichment strategies. Change is also the basic premise for all behavior training. Change is what we do daily. In fact, we do teach old dogs new tricks. It's what we are good at. We are after all, professionals in our field and change is our friend.

It's an honor for me to be sitting here at my desk and writing this letter to you. I look forward to joining you all in shaping the future of our Association.



Bob Cisneros, AAZK President  
San Diego Zoo



**AMERICAN  
ASSOCIATION  
of ZOO KEEPERS**



I want to welcome all AAZK Chapters to the 3<sup>rd</sup> “Trees for You and Me” AAZK Chapter Challenge which runs 1 September 2011 -1 March 2012. The link to “Trees” will be on Polar Bears International® (PBI) website. We will be helping to build the Polar Bear Forest® in Wisconsin with the help of the Wisconsin Department of Natural Resources (WDNR). Our goal this year is to raise \$25,000. Once again for each \$1 donated three trees will be planted in the Polar Bear Forest. The winning AAZK Chapter will again have a tree planted in their zoo or community thanks to PBI along with a plaque. “Trees” is a true collaboration

between PBI, WDNR, and AAZK to plant trees, reduce CO<sup>2</sup> and help polar bears!

PBI’s link for “Trees for You and Me” to donate; don’t forget to find your AAZK Chapter on the scroll and click to win.

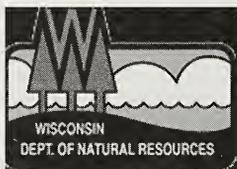
<http://www.polarbearsinternational.org/programs/trees-you-and-me-model-nation>

AAZK’s link to AAZK/PBI and reforestation

<http://aazk.org/aazk-and-polar-bears-international/>

Any questions or comments contact

[christy.mazrimas-ott@aazk.org](mailto:christy.mazrimas-ott@aazk.org).



POLAR BEAR FOREST

### **ZooNews Digest/Zoo Biology Group - Check Them Out!**

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

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

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# From the Executive Director. . . .

## *From a caring membership*

On behalf of the Board of Directors and the membership of the American Association of Zoo Keepers, I would like to recognize the Chapters that supported their Association during 2011. Each Chapter committed monetary resources and personal time to help support their Association. The combination of re-charter fees and duty obligations totaled \$51,737.64 for fiscal year 2011.

Congratulations to the AAZK Chapter of the Year  
The National Capital Chapter of AAZK

You are all to be congratulated for your efforts and dedication that enable this Association to move forward with our goals and objectives.

Thank you!



Ed Hansen, AAZK Executive Director

### **Platinum**

(\$2000 and up)

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(\$1000-\$2000)

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## *AKF Editor Receives Lifetime Achievement Award*

The Lifetime Achievement Award was presented to *Animal Keepers' Forum* Editor Susan Chan at the closing banquet at the 38<sup>th</sup> National AAZK Conference in San Diego, CA. Susan began working as *AKF* editor in February of 1981, and will retire on 31 December 2011. The Lifetime Achievement Award is given by the AAZK Board of Directors and the AAZK Awards Committee. Following is the wording on the plaque presented to Susan:

*Susan Chan, in recognition of your outstanding commitment to professionalism during your distinguished career as Managing Editor of Animal Keepers' Forum. The Association specifically notes your 30 years of service with the monthly preparation and production of Animal Keepers' Forum including six dedicated issues on special topics, Membership Directories, Enrichment Notebook, Zoonotic Diseases Handbook, Biological Values for Selected Mammals, the annual AAZK Conference Proceedings, Zoo Infant Development Notebook, Zoo Diet Notebook and Resources for Crisis Management in Zoo and Other Animal Care Facilities. We also recognize that you have promoted all aspects of the Association by dedicating a lifetime to furthering our knowledge and enabling us to connect through the communication link of AKF. Your diligent efforts to produce professional publications which are a reflection of the Association's dedication to animal care is a testimony to your own proficient and focused awareness of yourself as a person and as an employee of AAZK, Inc.*

The following is the text of a tribute read during the presentation of the Lifetime Achievement Award:

*Animal Keepers' Forum* has come a long way since its beginning. It currently reaches approximately 2800 members (including about 150 zoos) in the U.S., Canada and 24 foreign countries – truly a universal and varied audience.

The driving force behind this publication is Susan Chan. Her work and dedication for the past 30 years is stunning and humbling. Each month animal care staff at many locations around the world expect a booklet-sized package of quality and interest in the mail and for more than a quarter of a century, Susan has delivered. Celebrating her 30<sup>th</sup> year as Managing Editor, Susan has dedicated a lifetime to furthering our knowledge and connecting us all through the communication link of *Animal Keepers' Forum*.

“I started with AAZK on Feb. 19, 1981 when the *AKF* was done on an IBM Selectric typewriter with no correction key and put together by hand with glue-sticks.”

Her diligent efforts to produce a professional magazine that is a reflection of our dedication to animal care is a testimony to her own proficient and focused awareness: as a person and as an employee of AAZK, Inc. Susan Chan is as much about the business of professional animal care as every zoo keeper, aquarist, manager or other animal care person who participates in the profession.

As well as publishing *AKF* each and every month, Susan has directed and coordinated many of the other publications AAZK has produced over the years including the Membership Directories, Enrichment Notebook, Zoonotic Diseases Handbook, Biological Values for Selected Mammals editions, the annual AAZK Conference Proceedings, Zoo Diet Notebook, Zoo Infant Development Notebook and the Resources for Crisis Management in Zoo and Other Animal Care Facilities.

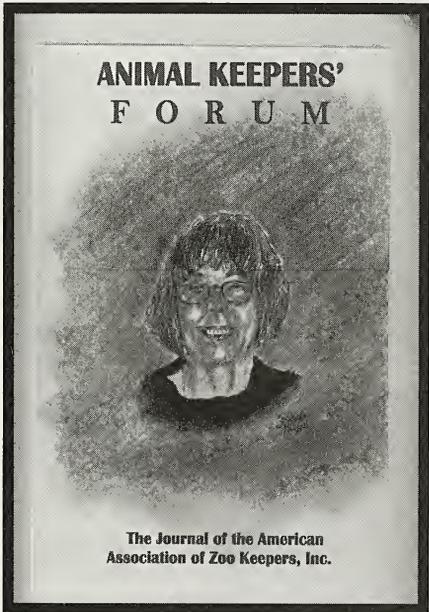
Susan has worked with many individuals, Board members, committees, organizations, businesses, (and, indeed, technologies) on behalf of the Association. All of these, with their different attributes, personalities, agendas and challenges, have offered a varied and demanding career for Susan to pursue and she has not faltered. And as life has presented circumstances with all that is good or bad, joyous or unbearable, Susan's strength and perseverance have been steadfast. She is one of the sturdiest souls you will ever encounter. Susan and her husband, Gary, are two of the nicest people you will ever meet. It is absolutely fitting that they live in the heartland of the continent.

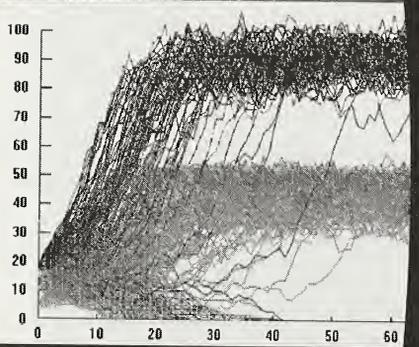
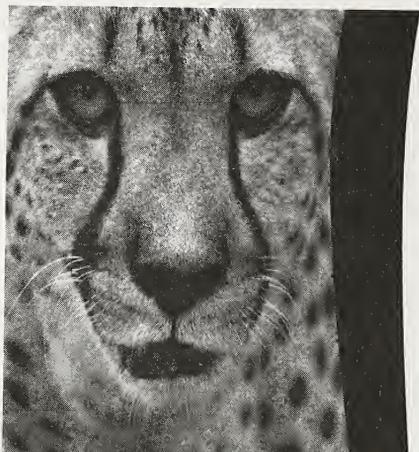
Deadline is a very formidable word. Pressure is just as daunting. *Animal Keepers' Forum* is a public resource. It is one that opens the Association to the scrutiny of the membership, the zoological world and the public domain as they view it through the modern means available today. Business sense, creativity and expertise have guided the production of the publication and, indeed, the Association. Susan Chan has met this challenge, professionally and competently, for these many years through her editing and communication skills, her knowledge of the membership and her feel for the pulse of this Association.

We are educated by the materials in *Animal Keepers' Forum*. We are connected to the purposes and interests of the contributors and writers. We are validated by the principles and professionalism of the work. This has been showcased by Susan's expertise and her dedication to her position and her Association. It embodies what the American Association of Zoo Keepers, Inc. is about – commitment, record, heart.

When it comes to our appreciation of Susan's work and unwavering care, we are all on the same page and it speaks volumes.

*Mark de Denus*  
Associate Editor, AKF  
Colleague/ Friend





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## *2011 National AAZK Conference Wrap-Up*

Let me start by saying a tremendous THANK YOU to every delegate who attended the 2011 National AAZK Conference in San Diego! The overwhelming attendance of over 280 people made the conference a wonderful venue for networking, learning, and rekindling friendships. Delegates traveled from around the world to attend including Mexico, Canada, and even Kenya.

The conference was jump started on 23 August with the special trip to SeaWorld San Diego for delegates to enjoy some special treatment with behind-the-scenes tours of this great organization. On 24 August, we got the fun started by shuttling everyone to the San Diego Zoo Safari Park to enjoy the Icebreaker. Many delegates chose to take the adventure of riding on the Caravan Safari tour where they could feed rhino and giraffe while driving through massive fields of roaming wildlife. In addition to this special experience, delegates were able to meet our animal ambassadors and tour the terrific facilities such as Lion Camp and the state-of-the art Paul Harter Veterinary Medical Center. Guests were also greeted by the San Diego Zoo Safari Park's director, Bob McClure while dining on a plethora of great food.

On 25 August, attendees were able to visit more than 25 exhibitors from all over the nation. Products displayed ranged from scales, edible grass, animal capture supplies, enrichment, food, and books, as well as local conservation organizations spreading their mission. During this day, delegates were welcomed by Dr. Frye, the San Diego Zoo Global's president of the Board of Trustees. Following Dr. Frye, everyone was treated to our first keynote speaker, Julie Scardina. Julie is currently the SeaWorld, Busch Gardens and Discovery Cove Animal Ambassador and Corporate Curator of Animal Training for SeaWorld Parks and Entertainment. Julie shared her knowledge, animal training expertise, and life-long love for animals with everyone while bringing a huge array of wonderful animals for us to be enthralled with.

For three days during the conference, paper presentations and workshops ran all day providing a wonderful range of topics and tracks for keepers to enjoy and fine tune their profession skills. Keepers from an abundance of institutions presented on deserving topics ranging from training to enrichment to conservation. The knowledge shared and learned will be critical for delegates to absorb and share with their institutions to further animal husbandry and conservation worldwide.

A great program that we participated in was called Acres for the Atmosphere. Each year, between 150 and 300 keepers travel from all parts of the country in order to attend the AAZK National Conference. Most travel occurs by either plane or automobile, both of which burn fossil fuels, emitting Carbon Dioxide (CO<sub>2</sub>) in the process. CO<sub>2</sub> emissions have often been referred to as the engine that drives climate change. The impact (carbon footprint) of our travel to and from conferences, therefore, has a negative effect on the environment. As an organization whose mission is to "promote the preservation of our natural resources and animal life," we should be working proactively to help reduce our carbon footprint each year.

This year, The San Diego AAZK Chapter is planning to do an Acres for the Atmosphere local tree planting project with The San Diego River Park Foundation. Every \$7.00 donated will pay for the purchase and care of a young native tree species to be planted along The San Diego River. Thanks to everyone's contributions over \$2,200 was raised and will be used to plant 315 trees along the river.

On 26 August, attendees used public transportation to visit the San Diego Zoo. Everyone was welcomed by animal ambassadors while dining on a delicious breakfast and greeted by the Director of the San Diego Zoo's Collection Husbandry Science Department, Carmi Penny. After a group photo, delegates scattered to attend one of a massive number of behind-the-scenes tours set up throughout the zoo. Additionally, koala, hoof-trimming, and Tamer<sup>®</sup> workshops occurring simultaneously where hands-on learning was at everyone's fingertips (and hoof-trimmings in people's hair!). After a busy

day and a large lunch, delegates headed back to the Westin Gaslamp to relax. None of this would have been possible without the tremendous support of our Platinum Sponsor, the San Diego Zoo Global. Their support for our AAZK Chapter and this conference made the Zoo Day and Icebreaker events possible.

During the evenings, delegates were able to enjoy the Hospitality Suite which was the site for our Silent Auction pre-event display containing over 200 items! Items ranged from unique photography to teddy bears as well as items donated by attendees. As the future hosts for the 2012 National AAZK Conference in Syracuse, NY, the Rosamond Giffard AAZK Chapter was very generous in sponsoring one night at the Hospitality Suite. The Hospitality Suite was even themed with a Fiesta Night as well as a Martini Night. One of the evenings swept delegates on a Gaslamp Crawl through downtown San Diego's amazing bar and club district.

On 27 August, delegates were excited to hear our second keynote speaker, Joan Embery. Joan has served as a champion of environmental and conservation issues around the world, most notably as spokeswoman for the San Diego Zoo Global. Attendees were able to gain insight into Joan's life and her views on how to improve the world for animals and conservation. Following Joan's talk, delegates were able to hear a word from two of our great sponsors, SR Scales and SeaWorld. SR Scales is a New York-based scale company with high quality products for medical, zoological, and veterinary use. Their generous donation of scales as our Gold Sponsor was unbelievable and provided for some competitive bidding during the live auction. Delegates were then able to congratulate all of the winners of the National AAZK and AKF Awards.

On 28 August, following the paper sessions and workshops, the Silent Auction moved to a breezy and sunny patio for delegates to make their final bids while enjoying a cocktail hour. A terrific banquet night ensued after the bidding with a competitive live auction with amazing items. Last minute friendships were solidified, business cards were exchanged, and hugs were abundant as delegates realized they would not see one another until next year.

On 29 August, a group of about 40 delegates stuck around for the post-conference trip. With four caravans, we traveled to the rescue facility Lions Tigers and Bears just outside Alpine, CA. Following this we traveled to the Menghini Winery in Julian, CA for some great wine tasting, lunch, and famous Julian pie. After exploring the quaint town of Julian, delegates explored the California Wolf Center and were educated about the plight of wolves and the facility's role in helping with wolf conservation.

All in all, this conference was a learning process for the San Diego AAZK Board, with years' worth of dedication invested into making the best possible conference for all of you. We hope that you left the 2011 National AAZK Conference with a feeling of rejuvenation for the zoo keeping profession, new ideas, and strong friendships. It was a bittersweet moment to see all of you head home. Thank you for being a part of our journey.

\*Be sure to visit [www.sdaazk.org](http://www.sdaazk.org) to view our daily hotel conference videos and join our Facebook page to view and add your own photos from the conference.

Sincerely,

Matt Akel, Vice President  
San Diego AAZK Chapter



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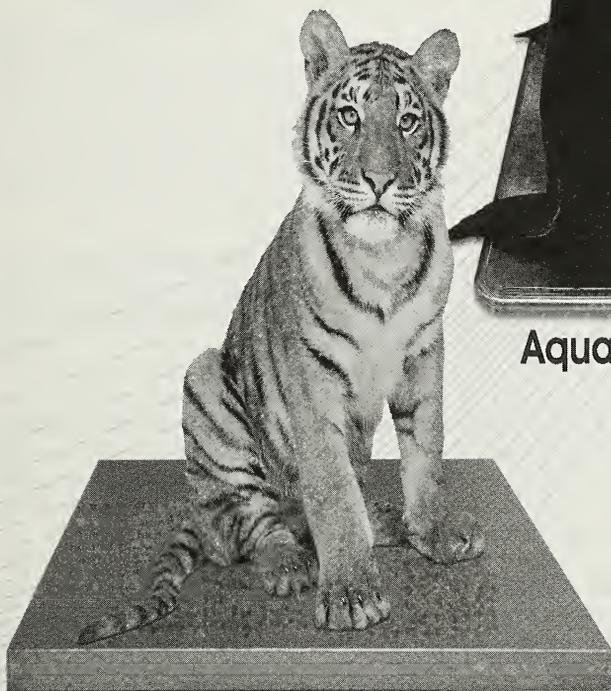
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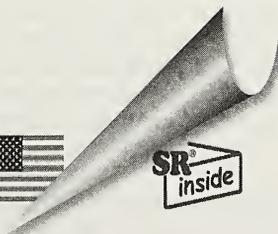


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## “Bowling For Rhinos 2011 Update”

We had a great AAZK conference in San Diego but I couldn't announce the Bowling For Rhino trip winners as the deadline to turn in money was Sept. 1st.

The 2011 top ten money raisers in the U.S. and Canada are:

- #1- Cori Monetti of Los Angeles AAZK with \$32,000 (wins 2 week trip to Lewa).
- #2- Holly Ray of Oklahoma City AAZK with \$14,232 (wins 2 week trip to Lewa).
- #3-Andy Jacobs - Dallas-\$9,635
- #4-Emily Blanchard-Tulsa-\$9,258
- #5-Heather Strawn - Cleveland-\$8,303
- #6-Tamara Colt-Detroit- \$8,107
- #7-Gil Myers-Capital National - \$ 7,846
- #8-Jody Carrigan-Georgia - \$ 3,575
- #9-Linda Stark-Indianapolis -\$3,282
- #10-Patty Pearthree-North Carolina - \$3,080

The top three money raising AAZK Chapters for 2011 were:

- #1- Los Angeles - \$32,000
- #2- Oklahoma City - \$14,232
- #3- Dallas - \$12,298



Top ten money raising Chapters since BFR started:

- |                              |                                 |
|------------------------------|---------------------------------|
| 1) Oklahoma City - \$237,958 | 6) Lincoln Park - \$130,917     |
| 2) Portland - \$221,984      | 7) Philadelphia - \$129,440     |
| 3) Dallas - \$176,986        | 8) Utah - \$128,543             |
| 4) Detroit - \$172,897       | 9) Indianapolis - \$ 117,611    |
| 5) San Diego -\$157,403      | 10) North Carolina - \$ 108,129 |

If your Chapter has not yet turned in funds from the 2011 event, it is not too late. Please do so asap. We are oh so close to that \$4 million mark! If your chapter is able to make a “year-end donation” toward the 2011 BFR event, please send funds (Checks payable to: “AAZK,Inc-BFR”) by December 1st to: Patty Pearthree, c/o BFR, 318 Montibello Dr., Cary, NC 27513

Our #1 BFR goal for 2012 is to have all 89 AAZK Chapters participate in “Bowling For Rhinos”. Any type of fundraiser is welcome. Some Chapters have been very successful with “Wii bowling”, “Run/Race For Rhinos”, “Rummage For Rhinos”, “Rock n For Rhinos”, “Sailing For Rhinos”...and the list goes on. All donations of course are always welcome and count as participation. Remember, it takes about five consecutive years for a fundraising event to catch on in your community so it is important to keep rolling with BFR in order to be successful.

Our #2 BFR Goal is to raise \$400,000 in 2012. If we increase the overall size of the “conservation pie” each of the organizations we support will receive a larger amount of money. Now is the time to begin planning your event for 2012. It's time to form a committee for your event, select a date for your event and decide what kind of event/events you will plan. If you are able to do so, try to pick an early date in May. The more BFR events we can have around the country in early May, the more PR we are likely to receive. Once you select your date, begin advertising to the public to increase attendance at your event. Please see <http://aazkbfr.org> for helpful hints on holding a successful event.

Please let me know the date of your event and your contact information asap including email address so I can update the website. All three organizations who receive BFR funding (IRF, Lewa and Action For Cheetahs in Kenya) would like to help you “grow” your event but we need this information to do so. If you plan to make a donation rather than hold an event, please let me know. The sooner we know your event date, the better our chances of helping to “grow” your event. Please contact Patty Pearthree: [ppear3@pear3.org](mailto:ppear3@pear3.org) .

Please also join the BFR Coordinator yahoo groups email by emailing your request to Barbie Wilson @ [rhinobarbie@hotmail.com](mailto:rhinobarbie@hotmail.com) . We can then inform you more quickly of important updates/events, etc.

# The AAZK Behavioral Husbandry Committee Presents

## Training Tales...



Where you can share your training experiences!

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

## Harpy Eagle Training: Exploring the Potential of Positive Reinforcement

By

*Barbara Heidenreich, Animal Training and Consulting Services, Good Bird Inc.,  
Erik Corredor, Dallas Zoo and Nathan Compton, Dallas Zoo*

### Introduction

The Wings of Wonder section of the Dallas Zoo is home to a variety of raptor and new world vulture species. The recently refurbished exhibit is primarily designed to give zoo guests the opportunity to view these impressive birds of prey in their large, attractive and naturalistic enclosures. There is an additional goal of obtaining reproductive success with a number of the species on display. To date a pair of King Vultures (*Sarcoramphus papa*) has successfully reproduced while housed at the refurbished Wings of Wonder.

In the past caring for exhibit and birds in reproduction programs has usually involved a “less is more approach.” The idea being that the fewer disturbances a keeper makes in a bird’s life, the more likely the bird is to show behaviors indicating comfort and therefore potentially breed. However, with the addition of an animal training consultant and zoo keeping staff members with experience and interest in training, it was decided a different approach could prove successful.

In 2007 it was decided a proactive approach to training would be implemented for the birds in Wings of Wonder. The goal was to train as many birds as possible for behaviors that would facilitate husbandry and daily care. Initially several of the vulture species were identified as excellent training candidates. The criteria used to determine this was the level of comfort in close proximity to keepers and their willingness to accept food from keepers. A female Andean Condor (*Vultur gryphus*) was involved in the training program until her transfer to another facility. The King Vultures were successfully trained to target, shift, enter a kennel, present a foot, and allow tactile to the chest. They also bred and raised offspring and participated in training throughout the process. The offspring also learned to target and stand on a scale.

As training proved to produce positive results it was decided to consider adding other candidates to the training roster. Another bird that demonstrated a high level of comfort in the presence of the keepers was a female Harpy Eagle (*Harpia harpyja*) named Killa (pronounced kee ya).

### The Training Candidate

The Harpy Eagle is one of the largest species of eagle. They can weigh from ten to 20 pounds and have a six-and-a-half-foot wingspan. Their talons are comparable in size to the claws of a grizzly bear. They feed primarily on animals that live in the trees, like sloths, monkeys, opossums, and some reptiles and birds. Harpy Eagles are highly maneuverable fliers and strike their prey after a rapid pursuit through the trees.

Killa was hatched in 2002 at the Avian Propagation Center at the San Diego Zoo. Hatched in an incubator, she was then hand-raised using techniques to avoid imprinting on humans. While in the

brooder she was covered with a towel, set behind a curtain, and a CD of rainforest sounds was used to drown out the sounds of human voices. During feeding keepers placed a sheet over their heads and used a Harpy Eagle puppet to deliver food.

Because of her large size and power, birds such as Killa have traditionally been regarded as potentially dangerous. For safety purposes the Dallas Zoo policy requires that a keeper is only allowed to enter her enclosure if another keeper is present. However what keepers observed was a bird that appeared quite comfortable in the presence of people. She had never been observed to present aggressive behavior. Nor did she demonstrate a fear response. This in part may be the result of her experiences as a chick with humans at the Avian Propagation Center. Other individual birds in Wings of Wonder such as the much smaller Ornate Hawk Eagle (*Spizaetus ornatus*) would show overt aggressive behavior, flying directly at keepers. The Spectacled Owls (*Pulsatrix perspicillata*) showed extreme fear responses and escape behavior when keepers were present. Compared to these individuals Killa appeared to be a training candidate with excellent potential.

With the permission of the curator Killa became the next training subject for the Wings of Wonder team.

### **Initial Training**

Traditional raptor training practices often involve capturing and restraining a bird to get a bird on a scale to determine a "starting" weight for training. However, the process of grabbing and restraining a bird against its will is contradictory to the goals of a positive reinforcement training program. Furthermore knowing the weight of an animal is not necessarily important to reaching training goals. While the information can be of interest for evaluating health, it is not required to train an animal. Instead keepers tried to ascertain based on observations, the amount of food Killa typically ate in a day. They also observed her responsiveness to food when she was relaxed and comfortable. More or less food could be added or removed from the diet based on her response during a training session to maintain an adequate level of interest in training. This amount changed in correlation with the time of year. Colder temperatures meant an increase in diet. Warmer weather meant a decrease.

Because Killa showed a high level of comfort around people she readily took food from keepers in the first training session. Per zoo policy the food was offered from hemostats as opposed to hands. Training was initiated with keepers outside of the enclosure. The first behavior Killa learned was to target. The target was a blue plastic circle attached to a dog clip. The target could be hung on the outside of the cage near the eagle. At first food was held near the target. Killa learned to touch the blue target with her beak to earn the food reinforcer. In the early stages of training, the target became a useful tool to call Killa to the front of the cage for keeper talks. This offered zoo guests a great opportunity to see the impressive wingspan of a Harpy Eagle as she flew to the front of the enclosure.

The target was also used to call her to the back of the cage to work on training other behaviors. To initiate introduction of a kennel, the target was used as a means to pair reinforcers with the kennel. The kennel was placed outside of the enclosure and Killa was reinforced for targeting nearby.

### **Success Leads to More Training Goals**

As hoped, Killa learned quickly and was an eager participant. In addition her continued calm demeanor helped increase the teams' confidence that the presentation of aggressive behavior would be very unlikely. Because of this keepers moved from training outside of the enclosure to training inside.

Very quickly Killa learned to fly to perches when cued by the keepers. This made for an even more dynamic presentation for zoo guests.

Killa also learned to shift into a holding area. This was an important training goal. Colder weather often required birds to be placed in holding. Training Killa to voluntarily enter her holding area made this process stress free and more reliable.

Crate training progressed with the crate now being in the enclosure and keepers in there as well to help direct Killa into the kennel using the target and food reinforcers.

A scale was able to be brought into the enclosure to get a weight on the eagle. This was after months of training. Therefore although it was helpful to know her weight for record keeping purposes it was not integral to her training success.

### **A Small Setback**

One of the challenges for the Harpy Eagle was her exhibit. On several occasions Killa was found caught in the netting/wire of her enclosure. This meant keepers had to restrain her and untangle her legs from the netting. Pairing her trainers with this aversive experience had the potential to affect the trusting relationship that had been nurtured via positive reinforcement. Unfortunately the problem occurred more than once before Killa was moved to another enclosure while the netting was replaced with something more suitable.

The entanglement incidents did cause Killa to show some hesitancy with her trainers, but because of a long positive reinforcement history she was able to return to her consistent performance during training rather quickly.

### **Training to Wear Falconry Equipment**

The move to the new enclosure proved to be a blessing in disguise. Although the enclosure was smaller, it opened up the possibility for some new training goals. Because Killa had been doing so well, the idea of bringing her out of the enclosure for educational opportunities had been suggested. However her role as an exhibit (and potentially breeding) bird was also important. To bring Killa out of her enclosure would require the bird to be equipped with anklets and jesses. However it was agreed for her safety, based on her entanglement history, and for her role as an exhibit bird that she not wear equipment while in her enclosure. For these reasons it was decided to train her to allow keepers to apply anklets, jesses and any other equipment for excursions outside of the enclosure. These would then need to be removed when she returned to her enclosure.

At the time, to the team's knowledge, training a Harpy Eagle to accept the level of manipulation required to apply and remove equipment daily had not been attempted before. A shaping plan was devised to achieve the training goal. The steps included the following:

- Touch foot with hand
- Touch foot with anklet
- Drape anklet on foot
- Wrap anklet around leg
- Secure anklet around leg
- Thread jess
- Add swivel and leash
- Step to the glove
- Short hop to the glove
- Walk with the bird on the glove



Harpy Eagle at Dallas Zoo

*(Photo: ZooChat.com)*

Training sessions were scheduled to occur once daily. However due to staffing challenges, training could not always take place every day. Despite this, the goal of securing the anklets comfortably around Killa's legs was achieved in 33 training sessions. It took nine more training sessions for the eagle to be comfortable with the jesses being threaded. Sessions to add the swivel and the leash followed. After 11 more training sessions Killa was stepping to the glove without hesitation.

Training Killa to accept touching on her feet also lead to some other behavior goals. These included training her to allow a keeper to wrap his hands around her legs and apply some pressure. The goal was to be able to approach and calmly secure Killa's legs if she needed to be captured and restrained. This approach is far less stress inducing than traditional methods that require birds to be chased, netted and grabbed for restraint.

An additional bonus to the tactile training was the ability to evolve this into touching Killa's sternum and pectoral muscles. This allowed keepers another means to evaluate her physical condition in a manner that was stress free for the bird.

Since Killa's initial training it was discovered that nature cinematographer and falconer Neil Rettig has also had success training a Harpy eagle to accept the application of anklets and jesses and allow touching.<sup>4</sup> With more than one Harpy eagle responding well to the use of positive reinforcement to train these behaviors, it is possible more trainers will be inspired to consider this as a training goal.

### **Addressing Aggressive Behavior and Fear Responses**

Because Killa continued to be an excellent training subject it was an important goal to maintain her calm demeanor. Avoiding creating aggressive behavior or fear responses were high priority. If any activity elicited aggressive behavior it was immediately discontinued and smaller approximations were employed. The smallest demonstration of body language typically associated with aggressive behavior would cause trainers to reevaluate their strategy. This was especially relevant when introducing touching with hands or the anklets and when manipulating equipment, for example when threading the jesses.

Another factor that contributed to some aggressive behavior was using large pieces of food. To encourage Killa to hop to a glove and remain for a period of time, a large piece of food was used to lure her initially. However if Killa was particularly motivated for training she would show some body language indicative of aggressive behavior. For these reasons trainers quickly switched to using smaller pieces of food and waiting for presentation of the behavior paired with calm body language before delivering reinforcers.

Although some female eagles have been observed to present aggressive behavior at sexual maturity, this has not been observed with Killa. She has also not yet been provided with a nest site, nesting materials or a mate. Other birds at Wings of Wonder have successfully continued training during breeding and rearing of offspring. It will be interesting to observe if this can be repeated with Killa at some point in the future.

Keepers also did not want to create a fear response. This was especially important when the equipment was on Killa and she was on the glove. Keepers wanted to avoid creating a situation in which the eagle would be likely to fly or bait off the glove. When a bird baits it is often trying to escape a situation it perceives as uncomfortable. In other cases a bird may be trying to go towards something, for example a preferred perch. In Killa's case her few instances of baiting appeared to be in line with wanting to go away from the situation. They were always associated with the keeper walking around the enclosure with Killa on the glove. Learning to adapt to the movement was a challenging behavior.

In many cases a bait can be avoided by observing a bird's body language closely and reinforcing the bird for remaining calm or if possible removing the bird from the situation. However, if the moment is missed and a bird does bait, it can be very challenging for some birds to recover. Restricted movement is not something to which Killa was accustomed. When she did bait, the trainer needed to assist her to get back on the glove and often she was no longer interested in participating in the training session after a bait.

### **Other Challenges**

At this point in Killa's training another major setback occurred. Killa was found disoriented and wobbly. Because of this she was sent to the veterinary hospital for medication and observation. Training was discontinued for approximately 30 days while she remained at the hospital. She was eventually returned to Wings of Wonder. Her training was resumed. However she was eased back into the process. Behaviors practiced initially included hopping on the scale, targeting around the enclosure and crate training.

Along the way other training challenges including finding a crate large enough to comfortably hold a large eagle. Another challenge was creating stable portable perches that could withstand the force of

a Harpy Eagle landing and launching into flight. Other setbacks included lack of funds during hard economic times to purchase materials to facilitate training. Because zoo policy required two keepers to enter Killa's enclosure training was sometimes delayed due to lack of staff availability. However, despite these challenges training did progress.

To date Killa has successfully learned to target, fly from point A to point B on cue, shift into a holding area, fly to a scale, enter a kennel, allow falconry equipment to be applied/removed, hop to a glove, perch on a glove while a trainer walks around her enclosure, allow her feet to be manipulated, allow a trainer to wrap his hands around her legs and apply pressure, and allow touching of her chest and beak. Killa's training is ongoing and it is the team's hope to continue to add more behaviors to her repertoire.

## Conclusion

As the potential of positive reinforcement is explored more, traditionally held beliefs about animal care are challenged. Exhibit birds can function as education program animals, falconry methods can be modified to ensure the most positive methods are utilized and coercion is reduced or eliminated, micromanaging diets and weights is not required to train, and potentially dangerous animals can be trained and trusted to be non threatening. Most importantly birds such as Killa can be an example of what is possible when you train with positive reinforcement.

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### ***AAZK Behavioral Husbandry Committee Editors Note:***

Previous publication data:

Heidenreich B, Corredor E, Compton N. [2010]. Harpy Eagle Training: Exploring the Potential of Positive Reinforcement. Proceedings of the Eighteenth Annual Conference of the International Association of Avian Trainers and Educators (IAATE) National Conference. March 3<sup>rd</sup> through 6<sup>th</sup>, 2010 Albuquerque, New Mexico USA

This training actually won the 2010 Behavior of the Year: Husbandry Award from the International Association of Avian Trainers and Educators ([www.iaate.org](http://www.iaate.org)). See <http://www.frequency.com/topic/dallas-zoo/199224> to watch video of this training.

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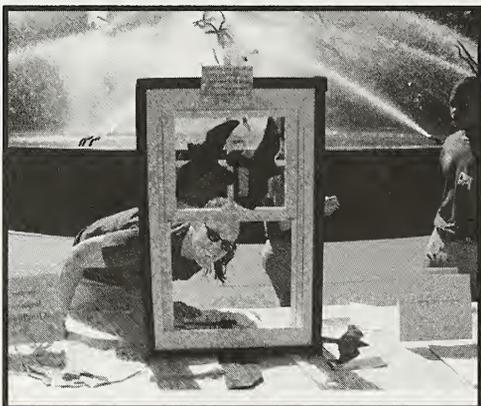
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# Bird Window-Collision Monitoring at the Philadelphia Zoo: Setting Up an AAZK Citizen Science Project

*By Wendy Lenhart and Christopher Waldron  
Greater Philadelphia Chapter of AAZK, Conservation Committee Co-chairs*

Scientists estimate that over a billion wild birds are killed each year across the globe from colliding with man-made structures. Sheet glass gives the illusion of a corridor or deceptively reflects the surrounding landscape. High rise buildings, wind turbines, overhead power lines and radio towers are particularly hazardous to night migrants due to confusing lights on the structures that lead to exhaustion and/or fatal collisions. For the purposes of this paper, we will be focusing specifically on sheet glass collisions, and how we are working to change the odds against wild birds on the Philadelphia Zoo grounds. Through extensive 30-year research, Muhlenberg College professor Dan Klem found that one in every two window strikes are fatal. With this being said, he has taken great strides in encouraging the development of solutions and raising public awareness on the subject (2006). Zoos and aquariums are leaders in the conservation community and have the resources to empower the public to continue this initiative. The Greater Philadelphia Chapter of AAZK has most recently started a citizen science project with just this in mind.



Author Wendy Lenhart at AAZK/Education Department table to educate guests on how to prevent bird window collisions at home.

*(Photo by Catherine Vine)*

Large panes of glass are commonly employed as architectural components, from private homes to commercial buildings. Zoos also commonly use them for their aesthetic and interpretive appeal so that visitors can appreciate and connect with the animal species on exhibit for greater conservation awareness. Unfortunately, classic glassed-in exhibit designs - ironically inside conservation institutions - can also be areas where wild birds strike the glass. Staff at the Philadelphia Zoo has worked to change that in recent years. Starting in 2006, pathology records were kept of birds that appeared to have fatally struck specific exhibit glass. Around the same time, the Greater Philadelphia Chapter of the American Association

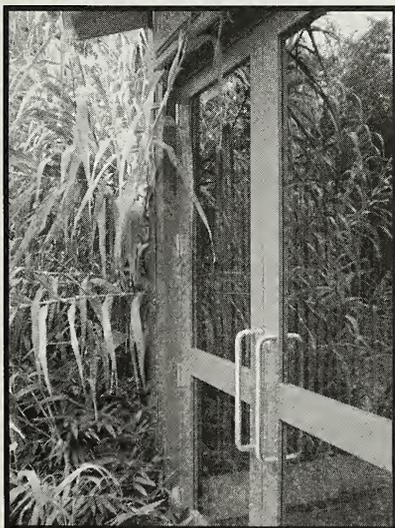
of Zoo Keepers started to collaborate with the Philadelphia Zoo's education department to educate guests on ways they can prevent window collisions at home. Most recently, volunteers from the Greater Philadelphia Chapter of the American Association of Zoo Keepers took this initiative one step further by monitoring the known collision "hot spots" in the Philadelphia Zoo in the mornings during the spring and fall 2010 courtship/migratory seasons.

The Greater Philadelphia Chapter AAZK Conservation Committee oversaw all of the logistics of the 2010 collision study. Volunteers were recruited to either take one day a week to come in early, or serve as a scheduled alternate between the months of April and May for the spring migratory season and between August and October for the fall migratory season. Most keepers at the Philadelphia Zoo start at 0815hrs, so monitors generally came in around 0730hrs. (It is important to note, however that docents, education staff and volunteers also eagerly donated their time for the study.) A tote bag with a mapped route connecting the exhibit "hot spots" to be checked, labeled baggies for dead birds and data sheets were left at the starting location and picked-up by the assigned monitor each morning.

The participant recorded the current weather conditions and attempted to walk the “hot spot” loop three times each morning. When a dead bird was found, the location code for the exhibit, time of day, and the condition of the bird (warm, cold, stiff or live injured) was recorded. Live injured birds were immediately taken to the Animal Health Center and dead ones were brought to the animal necropsy refrigerator per the usual Zoo protocol.

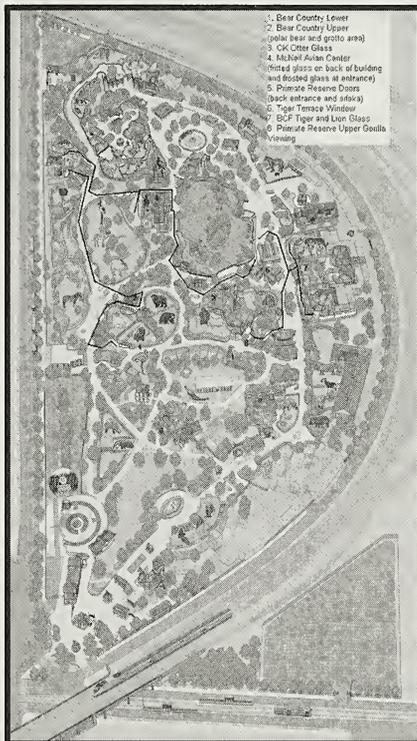
Throughout the monitoring process, communication played a key role. All participants and people willing to serve as alternates were on an email list and a calendar with assigned shifts was posted on the AAZK bulletin board. Some minor changes had to be made on the forms as the study progressed. Thanks to volunteer feedback, an umbrella was also placed in the tote bag for unexpected bad weather. Lead keepers of the buildings with “hot spot” exhibits were notified and asked for feedback and suggestions at the beginning of the monitoring. The grounds department was also notified to be as specific as possible about the locations of dead birds they picked up throughout their daily shifts. Staff on radio at the Zoo called designated keepers in the bird department to pick up collision victims when possible. The veterinary department was invaluable in reporting the results of wild bird necropsies where the cause of death was likely due to a collision. Finally, the Philadelphia Zoo is partnered with Pennsylvania Audubon in monitoring bird strikes around the high

rises in Center City Philadelphia during both the spring and fall migration periods. The timing of the Philadelphia AAZK monitoring study as a whole was congruent with the dates of this monitoring so we could contribute to the larger data set. Philadelphia is a major urban sanctuary for birds migrating in the Atlantic flyway, so this partnership was essential.



Bamboo and surrounding landscaping reflected on an exhibit door

(Photo by Wendy Lenhart)



Map of the Philadelphia Zoological Garden with loop walked each morning between collision “hot spots”

(Courtesy of Philadelphia Zoological Garden)

The greatest number of strike reports on Zoo grounds came from the veterinary department’s records of daytime strikes, but monitors also detected early morning collisions throughout the study period. Exhibits with glass that gave the false impression of a corridor had the most fatalities. One known instance of a reflective glass fatality was recorded as well. In this case, for a short period of the morning between 0900 and 0945hrs, the bamboo landscaping was clearly reflected in the glass door of an annex building. It may be feasible in the future to just cover this glass for that period of time during key migration times. The strike victim was a northern waterthrush (*Seiurus noveboracensis*), a migrant that is known to frequent the lake area adjacent to that exhibit each year. Other migrants detected were a cedar waxwing (*Bombycilla cedrorum*) and a wood thrush (*Hylocichla*

*mustelina*). Resident strikes included mallards (*Anas platyrhynchos*), common grackles (*Quiscalus quiscula*), gray catbirds (*Dumetella carolinensis*), house sparrows (*Passer domesticus*), European starlings (*Sturnus vulgaris*) and American robins (*Turdus migratorius*). The mallards that hit the glass were only dazed and were released after a short monitoring period at the Animal Health Center. These were the only live birds found in conjunction with glass in this data collection period. Several birds that were not found adjacent to glass, but died from head trauma were also reported. These individuals could have presumably hit glass and succumbed to their injuries later. Another instance was recorded just outside the Zoo where two male robins were seen fighting next to a bus stop, and fatally crashed into the clear glass wall of the structure.

The Philadelphia Zoo has recently taken steps to modify existing and new exhibit glass to decrease the risk to wild birds living and passing through the garden. The new McNeil Avian Center, opened in 2009, features exterior frosted/decal window designs that achieve the translucence and aesthetics of glass, but are “bird-safe.” The custom design features bird silhouettes stenciled no further than one-inch apart, which research has shown to be an effective distance to avoid collisions. These windows were included in both seasons of the AAZK window monitoring to determine their effectiveness and in a year’s time, no bird fatalities have been recorded. In May 2010, a prototype window film provided with a recommendation and coordination from the American Bird Conservancy (see Bird Conservation, Spring 2010 in works cited) was installed in the grotto area of the Zoo’s Bear Country exhibit. This exhibit is the first to be identified for retrofitting, thanks in large part to the painstaking record keeping of the Zoo’s pathologist in 2006. The design incorporates “bird friendly” narrow, black horizontal lines spaced one-inch apart as well as the motif of the McNeil bird stenciling to unify the message.



Bird-friendly entry doors to the McNeil Avian Center at the Philadelphia Zoo

(Photo by Wendy Lenhart)

The product is custom-manufactured by SurfaceCare and the budget for the project was just



Window film with horizontal lines and bird silhouettes at the Philadelphia Zoo Bear Grotto exhibit glass

(Photo by Wendy Lenhart)

over \$4000.00. It is a major long-term sustainability initiative for the Philadelphia Zoo to address additional exhibits in the same manner. The Greater Philadelphia Chapter of AAZK’s Conservation Committee will be repeating the “hot spot” monitoring again in 2011 to help identify exhibits for future retrofitting. We are in the process of analyzing the data we collected during both field seasons as well. The Chapter will also continue collaborating with the Philadelphia Zoo/Pennsylvania Audubon Lights Out initiative to strive to protect the wild birds of the greater Philadelphia community and beyond.

### Acknowledgments

Special thanks to former zoo pathologist, Harley Newton for her dedication to keeping some of the first detailed records of bird collisions at the Philadelphia Zoo. Also a huge thank you to veterinarian, Donna Ialeggio for adding to this database with the help of veterinary technician (and morning window monitor), Martha Vaca. Finally, many thanks to the window monitors Andy Baker, Jeanne Caruso, Amanda Egen, Stephanie Eller, Laurie Franzke, Jane Gaulton, Jennifer Higgins, Diane Kane, Dawn Madzarac, Samantha Nestor, Barbara Nolan, Tanya Pham, Sean Ployd, Shirley Purring, Shirley Purring, Danielle Quaglia, Maria Schwalbe, Sharon Stauch, Catherine Vine, and Laura Warner who made this paper possible.

We would be thrilled if other institutions would like to start monitoring their own exhibit glass. If you have any questions, or to receive copies of our data collection forms, please contact Lenhart. Wendy@phillyzoo.org.

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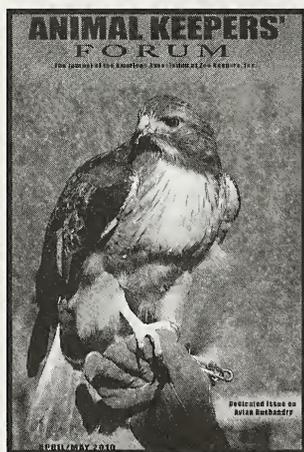


The International Rhino Keeper Association (IRKA) and the International Rhino Foundation (IRF) have produced a 2012 Rhino Calendar, whose pictures have been submitted by rhino enthusiasts from around the world! The calendars are being sold for \$26 each (including shipping) with all proceeds going towards the purchasing of supplies to help increase effective protection of the rhino populations and the successful prosecutions of wildlife crimes, specifically in selected areas in Zimbabwe and the Republic of South Africa. If you are interested in purchasing a calendar to help the IRKA's and IRF's cause please visit [www.rhinokeeperassociation.org](http://www.rhinokeeperassociation.org) or email [IRKACalendar@gmail.com](mailto:IRKACalendar@gmail.com).

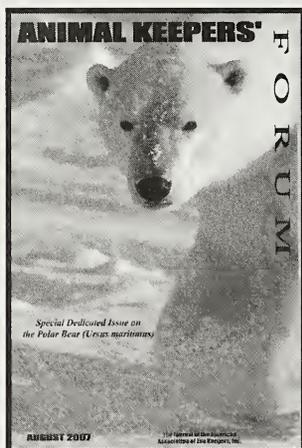
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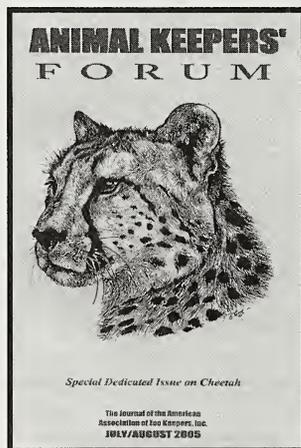
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Avian Husbandry



Polar Bear



Cheetah

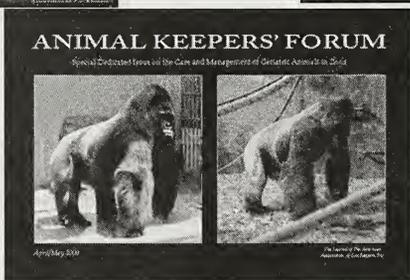


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# Alligator Care at the Virginia Living Museum

By

Karlon Rebenstorf, USCG, Animal Care Volunteer/Photographer  
Virginia Living Museum, Newport News, VA

## Introduction

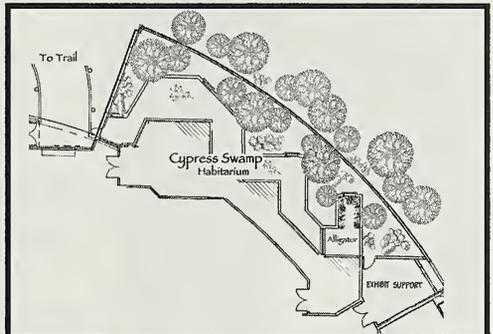
The Virginia Living Museum, located in Newport News, VA, is a non-profit museum and education center dedicated to stimulating knowledge, awareness, and appreciation of the biological and physical world and to promote an understanding of our relationship to the environment. This is accomplished by providing a variety of living interpretive exhibits and programs that encourage a commitment to the protection and conservation of our natural world. The museum includes two, two-story habitariums or man-made habitat enclosures in which living plants and animals are kept for visitor education and observation. One of these habitariums is home to our large American alligator (*Alligator mississippiensis*). The museum also has a smaller two-foot-long alligator that is used for education programs.

## Our Large Exhibit Alligator

Our large exhibit alligator is a 12-year-old, six-foot long female, is part of the museum's 20,000-gallon cypress swamp habitarium, that also houses various species of birds, freshwater fish, and turtles. Although this is an indoor habitat, its environment is influenced by seasonal changes due



Alligator in Cypress Swamp Exhibit



Cypress Swamp Habitarium Diagram

to its design and has some limited temperature fluctuations throughout the year. The enclosure does receive some sunlight from outside, but because it is an indoor exhibit, providing adequate heat and the proper type of lighting are vital health concerns. Lighting is provided by an installed mercury vapor 250W UVB bulb, on a timed 12-hour day/night cycle, and is positioned at a distance of four to five feet away from the basking area. In addition, a 250W ceramic heat emitter is utilized as a continuous heat source.



Cypress Swamp exhibit alligator

## Diet

Our exhibit alligator's food requirements tend to change with the seasons. When the weather begins to stay consecutively warmer in the spring, we'll feed on a twice weekly schedule. Once the weather starts to cool off again in the fall, feeding is reduced to once a week. This schedule is largely based on the behavior of the alligator during feedings. The staple of her diet is commercially produced crocodilian pellets, developed by Mazuri™ and specially designed for captive alligators and

crocodiles. During feedings these pellets will be tossed into the water around the exhibit to encourage her to "hunt" for her food. As a supplement to her diet she is also fed three different types of frozen fish as well as frozen adult mice or medium sized rats. The fish are trout, smelt, or capelin, to which we will add vitamin B-12 and calcium. Any frozen foods are completely thawed before feeding to reduce the possibility that it will be regurgitated.

### Maintenance

Enclosure cleanliness is very important. For exhibit maintenance the glass is cleaned daily and gravel washing and algae scrubbing are performed weekly. The alligator pool is connected to the rest of the habitarium but does have a three-inch acrylic partition that protects the other exhibit inhabitants without detracting from the overall natural appearance or impeding the water flow throughout the habitat. Three 36" sand filters are used to remove any suspended solids in the water and a 400-watt UV sterilizer provides filtration for any unwanted bacteria, algae, and other pathogens. Water quality is measured by our aquarium staff at least once a week and there is a 25% or more water change out every week depending on those results. Water quality is defined as the physical and chemical characteristics of the aquarium water and these characteristics are closely monitored for the health and well-being of the aquarium occupants.

### Handling

Handling for this larger animal doesn't occur until needed for medical examination or removal from the exhibit. For the size of this alligator, no less than three trained herpetology staff members are involved in the extraction. Because she will normally try to escape to the perceived safety of the pool, we will use what is called a top jaw rope to pull the alligator out of the water. Once on land, the most experienced keeper will carefully and quickly, being mindful of the dangers of both her teeth and tail, jump onto the alligator's back. The keeper will place their hands on the back of the neck to maintain positive control of the head and use their body weight to pin the alligator down. Depending on the size of the alligator, another staff member on hand will add their weight to assist with restraining her.



Taping the snout shut for safety

At this point, the person on the back closest to the head will pin the animal's snout down to allow a third staff member to place a noose around her jaws to secure them and begin safely taping them shut. Placing a towel over her eyes helps keep her calm. One characteristic of alligators that does

work in our favor is that when they exert themselves they are using anaerobic respiration, or respiration without oxygen, to power their muscles which they can only sustain for short periods of time before their energy reserve is exhausted. When this happens they will take quite some time to recover.

### Veterinary Care

Once we have collected her, we record her measurements and weight. We accomplish this by taking the weight of one of our staff, then having this person hold her, weighing them both and finally subtracting our staff members weight from the total. When her measurements are completed, she is placed in a custom-built transport container and moved to our veterinary clinic for examination.



Removing the alligator from the transport container in the vet clinic



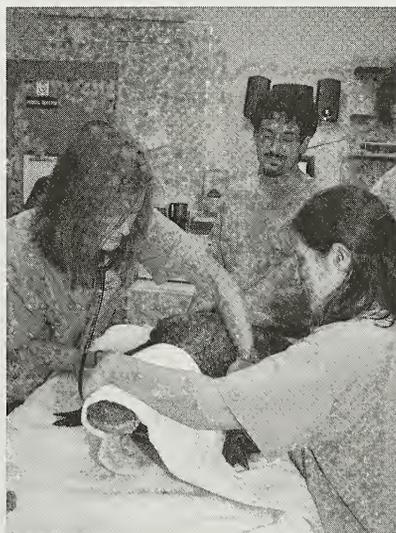
Alligator on exam table

When we arrive at the clinic, she is removed from the container and moved to the exam table. Because she is not under anesthesia for a physical exam, we will have as many trained staff on hand as necessary to maintain control over her, though this particular alligator normally remains quite calm. Throughout the procedure her respirations are constantly monitored to ensure she is fine. First the veterinarian will record her vital signs. Part of taking the vital signs is a process called auscultation, which is a medical term for

listening for the sounds produced in the body to identify normal or abnormal sounds and to aid in diagnosis. In this case, these are heart and lung sounds. This can be difficult with crocodylians due to their rough scaly skin. In order to decrease the scratching noise heard through the stethoscope, the vet will use a moistened gauze pad or towel between the stethoscope and her skin.

The highlights for the rest of the exam are as follows:

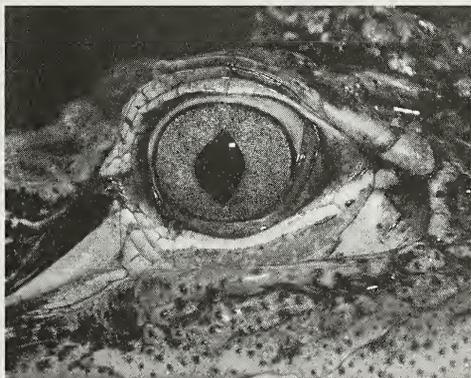
- Examine the skin color and texture. Palpate for any soft or swollen points and look for areas of discoloration.
- Check for mites and ticks in the grooves between the scales.
- In the region of the abdomen palpate for any swelling or masses.
- Palpate the vent area for sex organs, looking for any prolapse, impaction, or abscess formation.
- Examine the head looking for symmetry, nasal discharge, and swelling along the jaw line.
- Look at the eyes for swelling, opacities or discolorations. An opacity, is an opaque or a nontransparent area on the lens of the eye which is a symptom of cataracts.



Taking respiration sounds



Eye exam close up



Alligator eye close up

The veterinarian will also draw a blood sample. This can be difficult due to the tough skin of our patient. It can also be hard to find a blood vessel to collect a proper sample. The attempt at a blood sample can be made from one of two places as seen in the photographs. Once we have the sample,



Blood draw attempt #1 (unsuccessful)

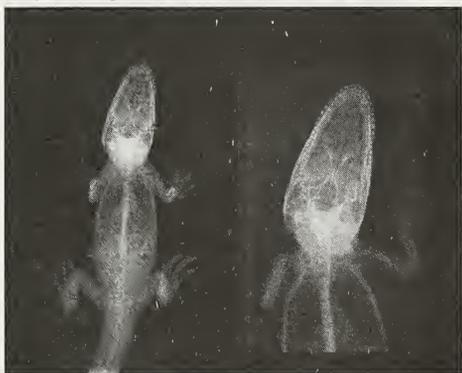


Positioning (L) and #2 blood draw on right (successful)



the blood is sent to a laboratory and a metabolic test panel specific to reptiles is run. Based on the interpreted results of this panel our vet can tell, for example, how the kidneys and liver are functioning and what the blood sugar, cholesterol, and calcium levels are. Finally, it may be necessary to take an X-ray of our subject. This can be quite an undertaking depending on the size of the alligator. X-rays may be required for a multitude of different reasons. Sometimes they can back up test results such

as suspected calcium deficiencies. The vet staff can look for bone density abnormalities in this case. Also, another example of the need for an X-ray can be the possibility of blockages in the digestive tract or even pneumonia which will be indicated by lighter than normal, almost white lungs. From all of the information collected during the exam, adjustments can be made to her care if necessary.



Alligator X-ray

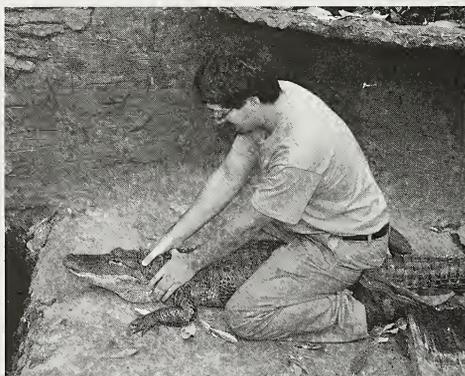
### Reintroduction

The same safety procedures are followed in returning the alligator to her exhibit. When her examination is complete she is returned to her carrier for transport. Once again, with as many staff as necessary, we remove her from her container,

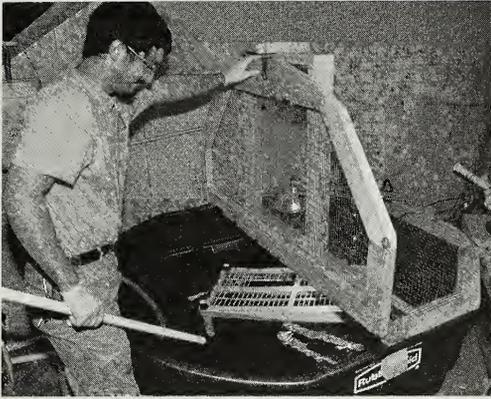
carry her back into the exhibit, and set her down on one of the exhibit's basking areas with her head aimed toward the pool. At this point she is still blindfolded. With a staff member on her back and maintaining control of her head, another keeper will carefully remove the tape around her mouth and move away. Lastly, with a clear idea of where and how to exit, the person on her back removes the blindfold and quickly moves back away from her. For the instance that I observed this process she didn't move until a short time later, but the keepers must be prepared for any reaction.

### Our Small Program Alligators

Our program alligator is considerably smaller than our exhibit specimen and is handled by our education staff on a regular basis for public presentations. He is less than two-foot-long and is kept in a 150-gallon Rubbermaid™ stock tank with a specially built wood frame and screen meshed lid that is attached to the top of the container. Unless the alligator is being handled by trained staff, the lid remains locked at all times. For UV light and heat a 160-watt UVB bulb and a 250-watt ceramic heat emitter are installed above the tank at a distance of three to four feet. Additional light or



Restraint photo just before release

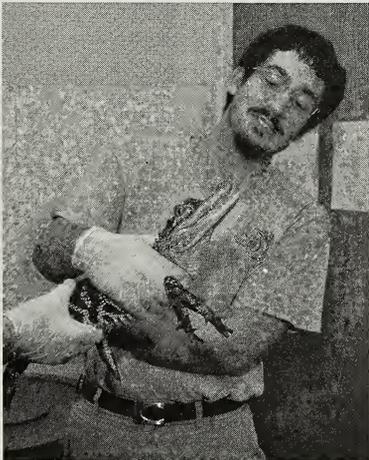


Small alligator holding

crawlers, Mazuri™ crocodilian pellets, and Mazuri™ amphibian & carnivorous reptile gel. Vitamin supplements include Vitamin D-3, calcium, Herptivite™, and Minerall™ which also are added to the food to complete a well-balanced diet. When the alligator reaches two-and-a-half to three feet in length, we will introduce mice into the rotation once a week.

### Holding Area Maintenance

On a weekly basis water quality is tested in the same manner as for the Cypress Swamp. We conduct water testing prior to cleaning to get an idea of the water quality from week to week. For cleaning, first the alligator is safely removed and put into a transport container. Then the circulation pump and filtration system valves are secured (in that order) and segregated from the holding tank and the filter cartridges are pulled and clean out. The tank is then completely emptied, scrubbed out, and refilled. The filtration system is sectioned off to keep the filter pollutants out of the already clean tank water and keep the tank water from draining while the filter cartridge containers are open. When cleaning is completed, the cartridges are re-installed in their containers and lined up to the holding tank. Once the entire

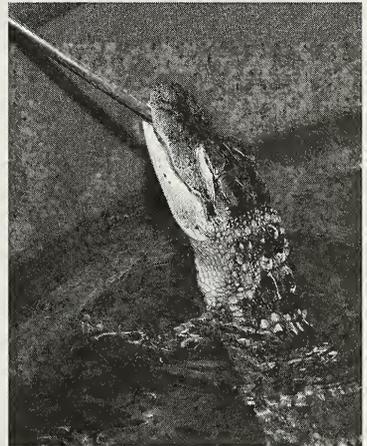


Curator of Reptiles Travis Land with one of our new exhibit alligators

heat sources may be used to provide a basking area maintaining a temperature range between 90-100°F [-32-38°C]. Tank water temperature is kept between 70-78°F [-21-25°C] and water heaters are in place to maintain that level.

### Diet

Because our program alligator is kept in a temperature controlled environment, feeding remains steady throughout the year. Sometimes eating behavior changes during the winter months, in which case we offer only what the alligator will eat. Its diet is on a controlled rotation depending on the time of the month. Feeding typically occurs three times a week. Menu items consist of crickets, fish, night



Small alligator feeding

system is re-opened and you have proper valve alignment, the circulation pump is re-energized. Proper valve alignment ensures that you don't overheat and burn out your pump. Although this may seem like a little too much detail, burnt out pumps because of improperly aligned plumbing seems to be an all too common story.

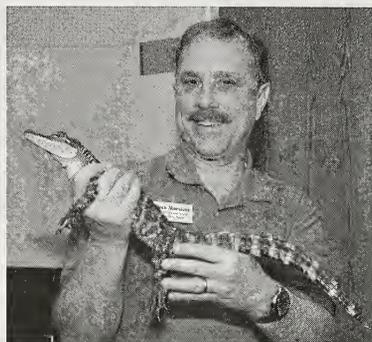
### Handling

All staff members who will be working with our program alligator must go through a training process to learn the proper recovery and handling techniques. This training includes the education staff as well as the members of curatorial team for the sake of safe work practices during animal care and public presentations. In order to safely recover the alligator in one quick fluid motion, handlers will grab the animal just behind the head around the neck with the dominant hand while the other hand will hold the rest of the

body. The goal is to gain positive control of the head without hurting the alligator, while still supporting the weight of the body. Knowing the animal's temperament and monitoring its body language at all times is very important. Once the alligator is in hand, holding it properly reduces stress on the animal and also provides comfort. During programs, our educators will keep the alligator beyond the reach of the patrons until the end of the presentation. At this time the visitors are invited to, one at a time, come up and carefully touch him on the lower back or tail.



Rock Moeslein during an animal program



Assistant Education Director Rock Moeslein with our program alligator

### Veterinary Care

Our small alligator is weighed on a monthly basis to track its health and growth and has a physical examination every six months. A fecal sample is collected and screened for parasites also every six months by either our in-house veterinary technician or is sent to a lab off-site. Common parasites in captive alligator digestive tracts to screen for include, but are not limited to, many types of worms such as hookworms, pinworms, and roundworms. For both animals giving any kind of medicine can be tricky, but if a problem exists that requires it, we will consult with a licensed vet to ascertain the proper medication and best system of delivery. In the past, for example, we have treated difficult animals with an oral de-wormer that we have injected into their food (such as a mouse). This has proven to be the most reliable form of treatment.



Small alligator in holding

### Conclusion

In conclusion alligators continue to grow. It is a misconception that the size of the enclosure has any effect on the animal's growth. As alligators eventually outgrow the exhibit, the museum finds new homes for them. This year our exhibit alligator will be relocated to a larger facility and a new smaller specimen will go on exhibit in the cypress swamp habitarium. As the Virginia Living Museum moves into the future, we look forward to continuing public education and our largest reptiles, the alligators, will be a part of that mission.

### Acknowledgements

Thanks to the following VLM staff members: Travis Land, Herpetology Curator; Linda Addison, Veterinary Technician; Chris Crippen, Aquarium Curator; Jennifer Curtis, Aquarist; Virginia Gabriele, Marketing Director; and Shannon Petrosky, Marketing

Special Thanks to: Dr. Denise Cisco, DVM

*Photos by  
Karlton Rebenstorf*

## References

The Merck Online Veterinary Manual  
HYPERLINK "http://www.merckvetmanual.com" www.merckvetmanual.com  
Keyword Search: Reptile Management

## Products Mentioned in the Text

Mazuri Crocodylian Diet™ and Mazuri Amphibian & Carnivorous Reptile Gel™  
Phone 1-800-227-8941  
HYPERLINK "http://www.mazuri.com" www.mazuri.com

Herptivite™  
Rep-Cal Research Labs  
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HYPERLINK "http://www.repcal.com" www.repcal.com

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# Chapter News. . .

## National Capital AAZK Chapter

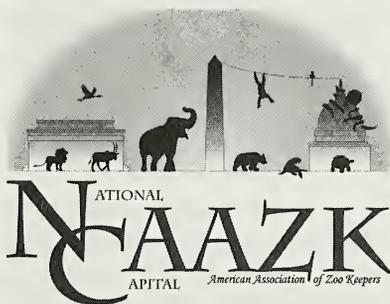
Our logo was officially adopted by the National Capital AAZK Chapter in July 2011 by a vote of the membership.

NCAAZK ran a logo competition open to all to submit. The winning logo was designed by NCAAZK member and National Zoo Keeper Courtney Janney.

The logo includes many of the iconic species displayed in the National Zoo and the Smithsonian Conservation Biology Institute, as well as monuments and memorials around the Washington, DC area.

~Jessica Kordell, Chapter Liison

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

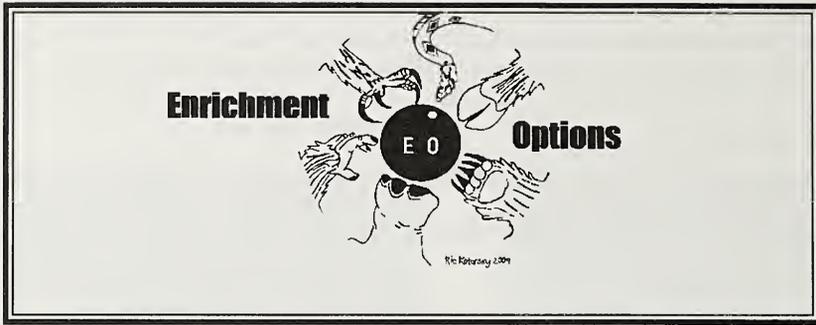


Check out the National Capitol Chapter at:

<http://www.ncaazk.org/>

<http://www.facebook.com/NCAAZK>

<http://nationalzoo.si.edu/goto/ncaazk>



*EO Editors -*

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

## ***Art: Enrichment for Animals and Keepers Alike***

*By*

*Jennifer Ziegelmeyer Archibeque, Zookeeper  
Happy Hollow Park and Zoo, San Jose, CA*

Happy Hollow Park and Zoo is home to many creative zookeepers who love art. Over time the zookeeping staff has begun to fuse art and enrichment which is great for both the animals and the keepers. This is not limited to piñatas and animals made of boxes, but also a creative outlet using chalk. Visual stimulation can be achieved with chalk murals in the animal night houses when keepers are given creative freedom.

Sidewalk chalk is used in a variety of colors to create murals of all sorts. Using sidewalk chalk keepers are able to write on almost any surface and wash it off easily, thus change the subjects frequently. Keepers create murals for holidays as well as any time of the year they have a few minutes to be creative. The murals zookeepers create range from messages to realistic animals to nature scenes and patterns. Sometimes keepers will continue to add onto another's work which results in a huge mural with lots of detail. The murals allow for great visual enrichment that can be changed frequently to keep it fresh and enriching.

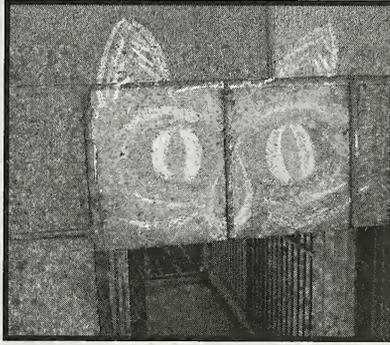
At Happy Hollow chalk drawings are created in the night houses of a variety of species including lemurs, monkeys, wallabies, fossa and jaguar. The night houses are a prime place for the chalk murals due to the greater time the keepers have access to them during the work day to create the pieces. Also since the animals spend significant time in the night houses they have a lot of exposure to the art enrichment. In addition to full wall murals, the placement of the drawings can change depending on the species. Keepers vary the placement of drawings based on the animals' use of the night house. For example the arboreal animals will have drawings placed at all levels of the night house. Also unexpected placements are quite enriching, such as an animal face or pair of eyes above a shift door or water bowl. Any washable surface can be a canvas for chalk drawings.

Creating simple drawings and murals are a welcome change of pace for the keepers. Staff members are able to use their other talents to create art for the animals. Unique uses of chalk art have not been limited to the walls of night houses, but include floors, ceilings, furniture and other novel items. Chalk has opened up a new way to diversify enrichment and make it fun for the keepers. As keepers become more creative with inexpensive chalk, they increase their frequency of imaginative enrichment projects which ultimately benefit the animals.

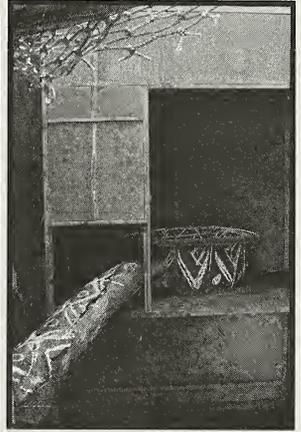
## Chalk Art Enrichment Examples



Lemurs investigate ball



Cat face above shift door



Capuchin Nighthouse



Red Lemur Nighthouse



Mural by Jena

*Photos by Author*



Squirrel Monkey investigates chalk



Mural by Jena



Under the sea in Jaguar Nighthouse

# Conservation/Legislative Update

Column Coordinators: *Becky Richendollar, Columbia, SC*  
and *Greg McKinney, Philadelphia PA*

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



**Southern Rocky Mountain Pikas Holding Their Own, Says New CU-Boulder Assessment** - American pikas (*Ochotona princeps*), the chirpy, potato-sized denizens of rocky debris in mountain ranges and high plateaus in western North America, are holding their own in the Southern Rocky Mountains, says a new University of Colorado Boulder study. Led by CU-Boulder doctoral student



American Pika

(Photo: Justin Johnsen/wikipedia)

Liesl Erb, the study team assessed 69 historical sites known to host pikas in a swath of the Southern Rockies ranging from southern Wyoming through Colorado and into northern New Mexico. The results showed that 65 of the 69 historical sites that had hosted pikas -- some dating back more than a century -- were still occupied by the round-eared, hamster-like mammals, Erb said.

The new study stands in contrast to a 2011 study in Nevada's Great Basin that showed local extinction rates of pika populations there have increased nearly five-fold in the past decade. That study, by a separate research group, also showed that local Great Basin pika populations had moved up in elevation nearly 500 feet in the past 10 years, a migration believed to be triggered by warming temperatures. Despite the low number of extirpations, or local population extinctions, in

the Southern Rockies, the CU-Boulder team found that the pattern of pika disappearance at particular sites was not random, said Erb of the ecology and evolutionary biology department and lead study author. "The sites that had been abandoned by pikas in our study area all were drier on average than the occupied sites," she said.

A paper on the new CU-Boulder study by Erb is published in the September issue of the journal *Ecology*. Co-authors include CU-Boulder Research Associate Chris Ray and Associate Professor Robert Guralnick, both affiliated with the ecology and evolutionary biology department. The study was funded primarily by the National Geographic Society. *Source: EurekaAlert!, 1 September 2011*

**U.S. Experts Help Save Crocodiles in Laos** - U.S. conservationists say they've helped the Laotian government in hatching a clutch of Siamese crocodiles (*Crocodylus siamensis*), a species threatened by hunting and habitat loss. The Wildlife Conservation Society aided the successful hatching of 20 of the crocodiles from eggs taken from the wild and incubated at the Laos Zoo. The hatching was part of a program to save the Siamese crocodile and the wetlands and associated biodiversity of Laos' Savannakhet Province.

"It's a small but important step in helping to conserve a valuable part of the natural heritage of Lao PDR for the benefit of future generations." Chris Hallam, WCS conservation planning advisor, said. "We're thrilled at the prospect of augmenting the wild population of Siamese crocodiles with a new batch of healthy juveniles." The hatchlings will be released in their second year, when they are large and robust enough to avoid mortality in the wild, officials said. *Source UPI, 31 August 2011*



Siamese Crocodile

(Photo: Rlevse/wikipedia)

**Amphibian Species Clings to Life** - One of the nation's most ambitious wildlife reintroduction efforts has suffered a setback with the deaths of 104 mountain yellow-legged frogs (*Rana muscosa*) that had been rescued from the fire-stripped San Gabriel Mountains in 2009. The federally endangered

frogs, which recently metamorphosed from the tadpole stage, died in captive breeding tanks at the Fresno Chaffee Zoo.

“We have two frogs left. We’re trying to determine exactly what happened,” said Scott Barton, director of the zoo, which is highly regarded for amphibian husbandry. “We were thrown a curve ball with a species that was new to us. It’s been a humbling experience.” Barton said the facility may “send these two frogs off to see if someone else will have better luck.”

The zoos in Fresno, Los Angeles and San Diego are involved in a public-private effort to pave the way for the *Rana muscosa* population to reestablish residency in Southern California. For thousands of years, mountain yellow-legged frogs thrived in hundreds of streams cascading down the San Bernardino, San Gabriel and San Jacinto mountains.



Yellow-legged Frog  
(Photo: Adam Backlin/USGS)

Since the 1960s, the species has been decimated by fires, mudslides, pesticides, fungal infections, loss of habitat and the appetites of nonnative trout, bullfrogs and crayfish. Today, fewer than 200 are believed to exist in nine isolated wild populations, including a group in the San Gabriel Mountains’ Devils Canyon that survived the devastating Station fire. According to U.S. Geological Survey ecologist Adam Backlin, a lead scientist in the recovery effort, “saving the mountain yellow-legged frog from extinction is turning out to be more difficult than anyone anticipated.”

The Fresno Zoo is not the only facility to have run into problems while trying to spur a jump in the population

of the three-inch amphibians. Thirty-six tadpoles have not been seen since biologists at the San Diego Zoo’s Institute for Conservation Research released them a year ago into a remote San Jacinto Mountain stream from which they had been absent for a decade, zoo officials said. In 2006, seven mountain yellow-legged frogs — found three years earlier in a shallow pool in the San Bernardino Mountains after a large brush fire — died at the San Diego Zoo. Studies showed those frogs died of the same type of fungal infection that is killing frogs around the world. The species’ minuscule scattered population gives mountain yellow-legged frogs the distinction of being one of the most endangered amphibians on the planet. *Source: Los Angeles Times, Louis Sahagun, 17 August 2011*

**Predator Found for Fungus Deadly to Frogs** - A freshwater species of zooplankton will eat a fungus that is killing amphibians around the world, zoologists at Oregon State University have reported. The tiny zooplankton, *Daphnia magna*, could provide a tool for biological control of this deadly fungus, the scientists said, if field studies confirm its efficacy in a natural setting. The fungus, *Batrachochytrium dendrobatidis*, known as chytrid fungus, can, at high levels of infestation, disrupt electrolyte balance and lead to death from cardiac arrest in its amphibian hosts. The OSU scientists have found that *Daphnia* inhabits amphibian breeding sites where chytrid transmission occurs and may be able to stem the unprecedented population declines and extinctions.

“About one third of the amphibians in the world are now threatened and many have gone extinct,” said Andrew Blaustein, a professor of zoology, co-author on this study and an international leader in the study of amphibian decline. “It’s clear there are multiple threats to amphibians, but disease seems to be a dominant cause,” he said.

The chytrid fungus has defied all attempts to control it, even the use of fungicides on individual amphibians. Until now, it has not been possible to eradicate the fungus from wild amphibian populations, nor is it possible to protect a natural wilderness area before the arrival of the chytrid fungus. But Julia Buck, an OSU doctoral student in zoology and lead author on the study, and her colleagues saw evidence that zooplankton might make a meal of the troublesome fungus.

“There was evidence that zooplankton would eat some other types of fungi, so we wanted to find out if *Daphnia* would consume the chytrid fungus,” said Buck. “Our laboratory experiments and DNA analysis confirmed that it would eat the zoospore, the free-swimming stage of the fungus. We feel that biological control offers the best chance to control this fungal disease, and now we have a good candidate for that. Efforts to eradicate this disease have been unsuccessful, but so far no one has attempted biocontrol of the chytrid fungus. That may be the way to go.”

The chytrid fungus is not always deadly at low levels of infestation, Buck said. It may not be necessary to completely eliminate it, but instead just reduce its density in order to prevent mortality. "Biological controls can work well in that type of situation," she said.

Although they have survived for hundreds of millions of years, amphibians may be especially vulnerable to rapid environmental changes and new challenges that are both natural and human-caused because they have a permeable skin, and exposure to both terrestrial and aquatic environments. The first known record of chytrid infection in frogs was in the African clawed frog, *Xenopus laevis*, in 1938. Because *Xenopus* are sold in pet stores and used in laboratories around the world, it is possible that the chytrid fungus may have been exported from Africa. When large numbers of frogs began dying in Australia and Central America in the mid-1990s, scientists discovered the chytrid fungus was the cause of these deaths. Chytrid is now reported in 43 countries and 36 U.S. states. The fungus has infected over 350 amphibian species by penetrating their skin. The fungus can live at elevations up to 20,000 feet and is believed to have caused the extinctions of all known high elevation populations of seven frog species in Australia's Wet Tropics between the late 1980s and early 1990s. Chytrid infections also have caused the extinction of the Costa Rican golden toad, *Bufo periglenes*, which was last seen in 1989; the Wyoming toad, *Bufo baxteri*, extinct in the wild since 1991; and the Panamanian golden frog, *Atelopus zeteki*, extinct in the wild since 2007. The fungus also wiped out the Australian gastric-brooding frog, of a genus, *Rheobatrachus*, unique because it contained the only two known frog species that incubated the prejuvenile stages of their offspring in the stomach of the mother.

Australian researcher Lee Berger wrote in a 2007 paper, "The impact of chytridiomycosis on frogs is the most spectacular loss of vertebrate biodiversity due to disease in recorded history." Source: *Environment News Service, 26 August 2011*

#### **47,000 Acres of Critical Habitat Protected for Sonoma County California Tiger Salamander**

- In response to a lawsuit brought by the Center for Biological Diversity, the U.S. Fish and Wildlife Service has designated 47,383 acres as protected critical habitat for the Sonoma County population of the California tiger salamander (*Ambystoma californiense*). The designation, which reverses a 2005 Bush administration decision that didn't protect any habitat, protects the most important habitats for the salamander on the Santa Rosa Plain.



California Tiger Salamander

(Photo: John Clecker/USFWS)

"[This] decision is based on solid science and will give the California tiger salamander and its vernal pool habitat in Sonoma County a shot at recovery," said Noah Greenwald, endangered species director at the Center. "Protection of habitat for the California tiger salamander will benefit thousands of species on the rich Santa Rosa Plain and ensure that this beautiful area isn't entirely paved over with strip malls."

The tiger salamander once occupied all of the Santa Rosa Plain but today is found in only a few scattered locations, where it faces severe threats from urban sprawl, roads and pesticides. It breeds in vernal pools that form during winter rains and then spends much of the rest of the year in underground burrows formed by small mammals in California's increasingly rare grasslands and oak woodlands. The salamander is striking, with a wide mouth outlined in yellow that gives it the appearance of smiling.

"The Sonoma County population of California tiger salamanders is part of the unique natural heritage of the Santa Rosa Plain and is worth saving," said Greenwald. "Sadly it's on the brink of extinction, with its few remaining populations isolated by urban sprawl and roads. We're pleased to see that the U.S. Fish and Wildlife Service has followed the science in this case by protecting habitat for the salamander." Source: *Center for Biological Diversity, 20 August 2011*

**Six Imperiled Foreign Bird Species to Gain Endangered Status** - In response to decades-old listing petitions and a series of lawsuits by the Center for Biological Diversity, the U.S. Fish and Wildlife Service has designated six foreign bird species as endangered under the U.S. Endangered Species Act: the Cantabrian capercaillie, Marquesan imperial pigeon, Eiao Marquesas reed warbler, greater adjutant, Jerdon's courser and slender-billed curlew.

A campaign to protect many of the world's rarest birds began in the 1980s, when worried ornithologists began submitting Endangered Species Act petitions to protect more than 70 international bird species. By 1994, the Fish and Wildlife Service had determined that most of the birds deserved protection under the Act, but delayed finalization of listing decisions. In 2004 and 2006, Center for Biological Diversity lawsuits jump-started the foreign-species listing program; in 2008 the Service published listing proposals for five birds and determined that 45 other foreign bird species deserved protection. After another Center lawsuit in 2009, the Service agreed to propose listings for more species, including the six very rare birds that have received final protection. Listing non-U.S. species under the U.S. Endangered Species Act restricts buying and selling of imperiled wildlife, increases conservation funding and attention, and can add scrutiny to development projects proposed by U.S. government and multilateral lending agencies such as the World Bank that would destroy or alter the species' habitat.

"We're pleased to see these birds receiving the protection they've needed for so long," said Justin Augustine, a Center attorney. "These birds are literally at extinction's door, and their listing should have occurred more than a decade ago. Protecting them under the Endangered Species Act will give them a better chance of survival, and it will help attract worldwide attention to their urgent plight."

The Cantabrian capercaillie (*Tetrao urogallus cantabricus*) is found in northwestern Spain, and its population is likely fewer than 1,000 birds. The Marquesan imperial pigeon (*Ducula galeata*) is endemic to the French Polynesian Marquesas Archipelago in the Pacific Ocean, and the most recent survey puts its numbers at just 80-150 birds. The Eiao Marquesas reed warbler (*Acrocephalus percernis aquilonis*) also lives in the French Polynesian Archipelago and continues to face serious ongoing habitat degradation. The greater adjutant (*Leptoptilos dubius*) was once common throughout much of Southeast Asia, but is currently restricted to India and Cambodia due to significant habitat loss and modification. The Jerdon's courser (*Rhinoptilus bitorquatus*) is a small, nocturnal bird endemic to India and is critically endangered due to past and ongoing habitat destruction. The slender-billed curlew (*Numenius tenuirostris*), believed to breed in Siberia, once had flocks reported as hundreds, sometimes thousands, strong. Sadly, the most recent population estimate is fewer than 50 birds.

Source: Center for Biological Diversity, 11 August 2011

**Hunters Say Protecting Species Could Hurt Them** - Safari Club International claims federal protections for three species of African antelope is having a "detrimental effect" on their conservation. Listing the species prohibits buying and trading the animals for captive-breeding programs, which raise them for hunting, the Safari Club says. The defendant federal agencies - the Interior Department and the U.S. Fish and Wildlife Service - listed the scimitar-horned oryx (*Oryx dammah*), dama gazelle (*Nanger dama*) and addax (*Addax nasomaculatus*) as endangered in 2005. The antelope-like animals are native to North Africa and are critically endangered in the wild there. The scimitar-horned oryx may be extinct in the wild.

Before the endangered listing, private breeders in the United States charged people to hunt for captive-bred animals here, and raised, bought, sold and traded the antelope for that. The Safari Club says that based on surveys by a breeders association, there were 1,824 addax and 2,145 oryx on private Texas ranches in 1996, and 369 dama gazelle in Texas as of 2003. The 2005 listing included a special exemption for captive populations, but Friends of Animals successfully challenged this, resulting in a 2009 ruling in District of Columbia Federal Court. The Fish and Wildlife Service introduced new permit rules in July this year, which the Safari Club says put new "burdens and obligations" on breeders of the endangered species. The club says the rules may cause breeders to abandon their efforts as no longer cost-effective - which would result in the loss of herds. It says the government listing would cost the world the captive breeding programs that private parties have run at no cost to the government.

The Safari Club acknowledges that it is unclear whether the private breeding programs may contribute to reintroduction of the species in the wild. The club claims the Fish and Wildlife Service violated the Endangered Species Act by protecting captive-bred and raised animals, and by failing to analyze their U.S. range. Safari Club, represented by house attorney Anna Seidman, wants the rule set aside.

Source: Courthouse News Service, Sonya Angelica Diehn, 6 September 2011

**Feds to Rethink Listing Status of Captive Chimps** - The U.S. Fish and Wildlife Service said it will launch a year-long status review to determine if captive chimpanzees (*Pan troglodytes*) should be protected as endangered. Both wild and captive chimpanzees have been protected as threatened

under the Endangered Species Act since 1976. Activism by Jane Goodall partly contributed to the agency's 1990 decision to split listing of the chimpanzee into wild and captive populations, with wild chimpanzees listed as endangered. Because there are no indigenous populations of chimpanzees in the United States, the restrictions have essentially banned importation of wild chimpanzees except for conservation activities like breeding programs. The Humane Society of the United States and several other conservation and animal welfare groups petitioned the service last year to drop its "split listing" of wild-versus-captive chimpanzees.

"The federal government does not 'split list' any other endangered species by wild and captive populations, and it should not have done so in this case," Humane Society CEO Wayne Pacelle said in a statement lauding the service's decision. "The current 'split listing' allows these highly intelligent and social creatures to be used as living props in silly commercials and stunts, as exotic pets, and as test subjects in invasive animal experimentation, even though most chimps have very little scientific value in these protocols and they cost an enormous amount to keep in laboratories."

The agency's action, a 90-day finding, means that there is substantial information to support a change in the status of the captive chimpanzee population. To actually change the listing, the agency will have to find that the "best scientific and commercial data" warrants listing the populations as endangered under the act.

The public has until Oct. 21, 2011, to comment on the agency's finding before the status review begins. *Source: Courthouse News Service, Travis Sanford, 2 September 2011*

**Stem Cells Made from Endangered Rhinos and Monkeys** - Scientists have created the first artificial embryonic stem cells from two endangered species, a breakthrough that could help save animals from extinction. Using frozen cells stored at the San Diego Zoo, Jeanne Loring, professor of developmental neurobiology at the Scripps Research Institute, and her collaborators have created stem cells from frozen skin cells of two such endangered species -- the drill monkey and the northern white rhinoceros. The northern white rhino (*Ceratotherium simum cottoni*) is one of the most endangered animals on Earth, while the drill (*Mandrillus leucophaeus*) - a West African monkey - is threatened by habitat loss and hunting. With countless endangered animals teetering on the brink of extinction throughout the world, the work of preservation has never been more important. The scientists report in *Nature Methods* that their stem cells could be made to turn into different types of body cell.



Northern white rhino at SDWAP  
(Photo by sheep81/wikipedia)

"The best way to manage extinction is to preserve species and habitats, but that is not always working," Oliver Ryder, director of genetics at the San Diego Zoo and co-leader of the study. About five years ago, Loring was contacted by Ryder, who was keen to collect stem cells from endangered animals. Obtaining stem cells by sacrificing the fertilized embryo of an endangered species was out of the question, so Loring tried to think of other sources, but came up empty. A couple of years later, in 2007, teams at the University of Kyoto in Japan and the University of Wisconsin in Madison revealed that cells called fibroblasts from human connective tissue could be coaxed into a state resembling that of an embryonic stem cell by activating a suite of reprogramming genes in the adult cells. This kind of science entails a fair amount of trial and error, and the researchers expected it would work with the drill because of previous studies on primates. But the rhino was a different matter.

Both animals, the researchers said, were chosen because they could benefit from stem cells now. For instance, the drill primate suffers from diabetes when in captivity, and stem cell-based treatments for diabetes being researched in humans suggest the same may work in these primates. The drill is closely related to the baboon (genus *Papio*) and even more closely to the mandrill (*Mandrillus sphinx*). The rhinoceros was chosen because it is one of the most highly endangered species on the planet, with only seven animals, all in captivity, in existence. They haven't reproduced in several years, and because the population is so small there is a lack of genetic diversity, which could affect their survival. If the researchers can use the stem cells to make sperm and eggs from skin cells of deceased animals in the frozen zoo, they could reintroduce some genetic diversity into the population, while also increasing its size. *Source: International Business Times, 6 September 2011*

**Fisheries Service Protects Sturgeon** - US fisheries officials say, they're close to agreeing with other federal agencies on Savannah harbor deepening. Their concerns stem from potential habitat loss for the endangered shortnose sturgeon (*Acipenser brevirostrum*). Deepening the harbor to serve big ships will disrupt the endangered fish's habitat. So officials with the US Marine Fisheries Service want the project to include a \$7 million fish ladder to help the fish go further upstream around New Savannah Bluff Dam near Augusta. Deputy administrator David Bernhart of the service's Southeastern regional office says, his agency doesn't have a firm timeline yet. "We've been working with the Army Corps on these Endangered Species Act requirements," Bernhart says. "And we need to complete a document that's required under that law." The Fisheries Service must sign off on harbor deepening before it can begin. "That document will be our evaluation of the project's impact," Bernhart says. "Then, it will be a second step for our parent agency, NOAA, to do any of the sign-offs." State officials have made the project a top priority for years, saying it can't wait much longer. Source: *Georgia Public Broadcasting, Orlando Montoya, 5 September 2011*

**Fears Grow for Asia's Endangered Anteaters** - Tiger poaching gets the press but wildlife groups in Asia are increasingly fearful for the future of a smaller, scallier and "less sexy" creature: the pangolin (genus *Manis*). So prized are the meat and supposed medicinal properties of this reclusive anteater that it is now thought to be the most heavily trafficked mammal in the region, rapidly being driven towards extinction.

"The volumes we are seeing in seizures are mind-boggling. No species can survive this level of extraction for long," said Kanitha Krishnasamy from the wildlife trade watchdog Traffic. "Unfortunately, this scaly animal does not invoke as much attention from the public, and by extension from the authorities, as pangolins are considered to be less sexy than their larger mammalian counterparts," she added.

Tigers (*Panthera tigris*) are also killed for their body parts, mostly for use in traditional Asian medicines, and major international campaigns have been launched to save them from extinction. Trading in pangolins is banned under international law, yet Traffic's Asian surveys show they are frequently poached from the wild, mainly in Indonesia and Malaysia, exacerbating the threat from rapid deforestation. They are transported through Southeast Asia, mostly ending up in China and Vietnam, where pangolin flesh is a delicacy and its scales - it is the only mammal known to have them - are ground into a powder for medicinal purposes. Historically, this ingredient was used in Chinese medicine to try to cure a range of ills, from children's hysterical crying to eyelashes curling inwards, according to researcher and pangolin expert Dan Challender.

Today, reports suggest the scales are used in an attempt to reduce swellings, cure asthma and even in some cases cancer, but a lack of solid analysis means "all uses seem unfounded to date", he said. Challender, at Britain's University of Kent, added that the supposed health benefits of eating the meat include nourishing the kidneys, but these are also probably unfounded. "Unless efforts are taken to address both the demand for, and supply of pangolins, they will go extinct in Asia in the short term future," he told AFP.

Of four species found in Asia, two are "endangered" and two "near threatened", according to the International Union for Conservation of Nature, which says it is unknown how many of the secretive, nocturnal animals are left. Two of four species found in Africa are also "near threatened", and all have decreasing populations, while Challender said seizures of scales bound for Asia from Africa suggested a developing trade. Likened in appearance to a globe artichoke, the pangolin curls up hedgehog-like into a ball when under threat, making them easy for humans to catch.



Pangolin  
(Photo by Piekfroschl/wikipedia)

Steve Galster, director of the anti-trafficking Freeland foundation, said the shy creatures were the "unknown problem" of Asia's illegal wildlife trade, sometimes fetching more than 1,000 US dollars each on the black market. "The price of pangolins is just going through the roof," he told AFP. "We're surprised there are any left." Already this year, seizures have been reported along trading routes in Thailand, Cambodia, India, Malaysia, Nepal, Myanmar, Vietnam and Indonesia - but these are probably just the tip of the iceberg, according to Traffic. In one of the biggest hauls, the group

said customs officials at a Jakarta port found 7.5 tons of pangolin meat in May, stashed in crates and covered up with frozen fish, bound for Vietnam.

“The most outrageous thing here is they even exterminate the young pangolins, the ones that when curled up are about 20 centimetres long,” port customs chief Rahmat Subagio was quoted as saying after the find. Late last year, seized logbooks showed one trafficking gang alone had killed and traded 22,200 pangolins over 14 months in the eastern Malaysian state of Sabah on Borneo, Traffic said. Often, however, pangolins are transported alive to maintain freshness and smugglers are known to inject them with water to increase their weight - although many die along the way without food or drinking water, activists say. Bundled into tightly-bound sacks, the poor-sighted pangolin finds its long sharp claws, normally used to dig out dinner from anthills, can become a danger: it is common for them to blind each other as they try to escape.

Experts warn their removal from the wild also threatens to destabilise the ecosystem of tropical forests, where the pangolin’s diet of ants and termites is a key form of pest control. Asian authorities are often unwilling to go after people of influence – “the big mafias, the big well-connected traffickers”, said Galster. He said laws against wildlife crime are weakened by loopholes and judges who don’t take the issue seriously, despite the perpetrators often making millions of dollars by exploiting endangered species. “We’ve seen too many traffickers get a slap on the wrist, if anything,” he said. *Source: AFP, 4 Sept. 2011*

**China’s Consumerism Latest Threat to Elephants** - Poaching of elephants and other species has increased in Central African countries, with products headed mainly to Asian markets. A report that was presented at a meeting of the Convention on International Trade in Endangered Species (CITES) in Geneva in mid-August said the fast-growing Chinese middle class, combined with lax policing of the Asian country’s ivory laws, is a big threat to elephant (genus *Loxodonta*) populations in Africa. The authors of the report, Esmond Martin and Lucy Vigne, visited ivory carving factories and stores in southern China in January. They compared the data with that which they had collated in previous visits going back to 1985. Despite rigorous laws controlling the sale of ivory in China, they found the industry was booming and much of it appeared to be unregulated.

The imposition of controls over ivory sales won China CITES approval to buy and sell ivory from legal stocks. In 2008 China imported 62 tons of elephant ivory from CITES-approved auctions in South Africa, Botswana and Namibia. Mr. Martin, who monitors the sale of elephant ivory and rhino horn around the world, said that of 80 outlets he visited only eight had compulsory ivory identification cards on display.

He said it is possible that two-thirds of all ivory being sold in southern China today is illegal because it doesn’t have proper identification. Fuelling the illegal trade in ivory, according to Mr. Martin, is a growing demand from China’s consumer class.

A CITES report released in Geneva last week said the highest levels of elephant poaching since 2002 were recorded in 2010, with central Africa of most concern. CITES officials announced the creation of a US\$100 million fund to enhance law enforcement and secure the long-term survival of elephant populations. Kenya reported this year that it was seeing slow growth in elephant numbers in its premier elephant game park, the Tsavo National Park. However, that rise is not echoed in other African countries or even in other parts of Kenya where poaching has reached record highs. *Source: Reuters, 2 September 2011*

**Squirrels Relocated to Build Owl Homes** - It might sound like a spoof, but San Diego Zoo officials this week are crowing about the early success of a novel ground squirrel (*Spermophilus beecheyi*) relocation project in the county. Why might 350 of the noted pests need new digs near Jamul, Otay Mesa and Sweetwater? It turns out the critters are critical to the welfare of burrowing owls (*Athene cunicularia*), which rely on squirrel holes for shelter. The zoo goes so far as to call squirrels “grasslands engineers.”

The burrowing owl population has plummeted in San Diego County and across the West, prompting zoo scientists to team with San Diego State University, the U.S. Fish and Wildlife Service and the California Department of Fish and Game on a conservation project that one scientist called the first of its kind. The first year will cost about \$240,000, paid for by grants and the zoo. Owl habitat projects are common, but they typically involve people creating and maintaining artificial burrows for the

birds in areas where they've been edged out by development. "The whole idea is to get more hands-off," said Colleen Lenihan at the zoo's Institute for Conservation Research. "We want the squirrels to do the work for us."

Burrowing owls are in trouble because they rely on grasslands with lots of flat ground and low vegetation. Development has reduced suitable spots and ground squirrel eradication programs may have limited burrowing owl nesting sites. "The re-establishment of California ground squirrels is a critical component of any long-term recovery plan for burrowing owls and the larger ecosystem because squirrels provide vital resources," Lenihan said. "Sites with ground squirrel colonies have a greater diversity of reptiles, amphibians, insects and birds than sites where they are absent."

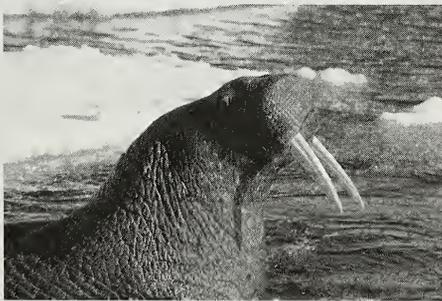


Burrowing Owls  
(Photo by USFWS)

Concern has grown about burrowing owls as their populations have shriveled. In San Diego County, roughly 600 burrowing owls were counted about 30 years ago, but the best estimate these days in the double digits at only a handful of sites. Ecologists said the owls could rebound quickly under the right circumstances because they lay lots of eggs -- up to 11 per clutch -- and they have adapted to human landscapes. The multi-agency recovery project involved trapping squirrels from Coronado and Pine Valley in hopes of determining whether coastal or inland critters fare better at the relocation sites. Drop-off spots were chosen for a variety of reasons including that owls live nearby and may recolonize if they have more hideouts. Squirrels were given "starter holes" and then left on their own to make Swiss cheese out of the terrain. "The idea is that they will go out and dig a bunch of natural holes," Lenihan said. The real test will be how the squirrels and the owls fare over the next year. As that becomes clear, Lenihan and others will decide whether the project is worth expanding. *Source: SignOn San Diego, Mike Lee, 25 August 2011*

**Imperiled Walruses, Dangerous Arctic Drilling Plan** - The Obama administration has approved a Bush-era plan to open the Chukchi Sea off Alaska to offshore oil drilling without determining how it will affect Arctic wildlife. At the same time, thousands of Pacific walruses (*Odobenus rosmarus divergens*) have congregated on Alaska's Chukchi shore as the sea ice they normally rely upon has disappeared. The migration of the walruses onshore in Alaska is reflective of the rapidly changing conditions of the Arctic caused by global warming.

"It's a painful irony that on the very day the Interior Department says no additional information is needed to understand the impacts of drilling on Arctic wildlife, distressed walruses in the Chukchi Sea were seen hauling themselves onto shore because there's no sea ice where they need it," said Rebecca Noblin, Alaska director of the Center for Biological Diversity. "The Arctic is reeling from climate change, but the Obama administration has a head-in-the-sand approach to looking at the impacts of oil drilling in the region."



Pacific Walrus  
(Photo by USFWS)

and gas development there, the Obama administration would rather risk the Arctic Ocean than risk its relationship with oil companies," said Noblin.

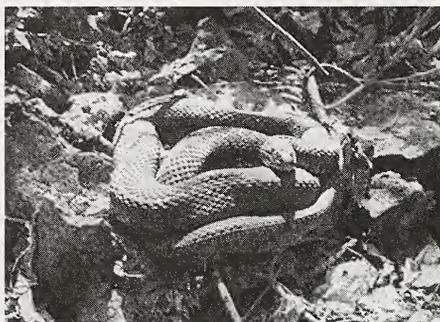
Among the most at-risk species in the Chukchi is the Pacific walrus. This week an estimated 8,000 walruses in two large herds were discovered hauled out on beaches of the Chukchi Sea near Point

Lay, Alaska, because the sea ice they need for resting is gone. Young walrus that are forced to come ashore face greater risks because they are vulnerable to being trampled to death in stampedes and attacked by predators. In 2009, 131 young walrus were crushed to death in stampedes along Alaska's shores near Icy Cape. Previously unprecedented, haul-outs are becoming a common occurrence on the Alaskan coast as sea ice disappears; a herd of 10,000 to 20,000 walrus came ashore in Alaska last summer. These walrus haul-outs coincide with recent announcements from the National Snow and Ice Data Center that July sea-ice extent reached a record low and that sea-ice extent in August is only slightly higher than record-low levels in 2007.

Due to threats from sea-ice loss, the Center petitioned to protect the Pacific walrus under the Endangered Species Act in 2008. In February, the Interior Department agreed that the walrus is threatened by global warming but that it will have to wait for the law's protections. Meanwhile, the walrus faces ever-growing threats from the Obama administration's inaction on global warming and its willingness to open Alaska's waters to dangerous drilling. "If the Obama administration had a rational energy policy that actually addressed the threat of global warming, it wouldn't be green-lighting risky oil development in the Arctic, which not only places a sensitive ecosystem at risk but will also further our addiction to fossil fuels," said Noblin. *Source: Center for Biological Diversity, 18 August 2011*

**Salazar Announces Successful Recovery of Lake Erie Watersnake** - Secretary of the Interior Ken Salazar has announced that the U.S. Fish and Wildlife Service (Service) removed the Lake Erie watersnake (*Nerodia sipedon insularum*), a harmless species found on offshore islands in western Lake Erie in Ohio and Ontario, from the Federal List of Endangered and Threatened Wildlife. The snake becomes the 23<sup>rd</sup> species to be delisted due to recovery. Under the Endangered Species Act, the Service has worked to successfully stabilize our nation's most imperiled species in part by fostering partnerships, employing scientific excellence, and developing a workforce of conservation leaders who promote conservation programs that help species recovery. The Service listed the Lake Erie watersnake as a threatened species in 1999. Threats to the species included intentional killing and loss of its shoreline habitat on Lake Erie to development. In 2003, the Service finalized a recovery plan that called for protecting habitat and providing outreach to reduce threats to the species. In cooperation with the Ohio Department of Natural Resources Division of Wildlife (ODNR) and other partners, biologists worked to minimize and reduce the threats to the snake by sustaining and protecting summer and hibernation habitat and ensuring the permanent protection of shoreline habitat.

Critical research, including an annual intensive Lake Erie watersnake census begun in 2001, provided data that identified when the species had achieved its population goal and threats to its survival had been reduced. In addition, public outreach programs provide awareness of the snake, its plight and its role in the ecosystem. Recovery criteria include a combined population of at least 5,555 snakes on the U.S. islands, sustained for six years, and protection of key habitat. Through continued habitat protection and public education, the Lake Erie watersnake population grew to about 11,980 in 2009, and has exceeded the minimum recovery level since 2002. About 300 acres of inland habitat and 11 miles of shoreline have been protected for the snake since it was listed.



Lake Erie Watersnake  
(Photo by USFWS)

Partners in the efforts to recover the Lake Erie watersnake include the ODNR, Northern Illinois University, Lake Erie Islands Chapter of the Black Swamp Conservancy, Western Reserve Land Conservancy, Put-in-Bay Township Park District, the Cleveland Museum of Natural History, and The Ohio State University Stone Laboratory. The Act requires that a species be monitored for a minimum of 5 years after delisting to ensure that the species remains stable after its protections are removed. The Service and the ODNR have developed a post-delisting monitoring plan to verify that the species remains secure from risk of extinction after the protections of the Act no longer apply. Lake Erie watersnakes remain listed as endangered by the state of Ohio so killing them is still illegal under state law. *Source: US FWS, 15 August 2011*

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