Animal Keepers’ Forum is published monthly by AAZK, Inc. Ten dollars of each membership fee goes toward the annual publication costs of Animal Keepers’ Forum. Postage paid at Topeka, KS.

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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.
ABOUT THE COVER

This month's photo was taken in the Galapagos islands by Dave Johnson of the Denver Zoo. It shows a young sea lion pup who stopped playing in the surf to strike a pose right as a wave was breaking over his back. Ecuador is facing new challenges with the throngs of eco-tourists coming to visit the archipelago made famous by Charles Darwin. They will need to strike a balance in the future between the economic upswing that these visitors provide, and the environmental degradation that could ensue as they love the islands to death.

It is only appropriate that this month's cover features a scenic photo from the islands that inspired Charles Darwin's theories of evolution. Many of you have probably mentioned evolution during your keeper talks: how polar bears evolved from brown bears, different species of birds evolved to fill different niches, and giraffes evolved to have longer necks. But if you have done enough keeper talks in your day, the word evolution has probably insulted a guest or two along the way. If you ever said something like "The platypus evolved over 100 million years ago...", well, some folks just don't think our duck-billed mammal, or any creature for that matter, has been around that long. How do you speak to those guests without offending? Author Melissa Pritchett takes a break from our usual husbandry fare and gives us some advice in *The Separation of Church and Zoo*. Whenever we depart from our traditional subject matter, it generates the most feedback from our readers, so I'll be looking forward to your Letters to the Editor.

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 e-mail contributions of late-breaking news or last-minute insertions are accepted as space allows. Phone (330) 483-1104; FAX (330) 483-1444; e-mail is shane.good@aazk.org. If you have questions about submission guidelines, please contact the Editor. Submission guidelines are also found at: aazk.org/akf-submission-guidelines/.

**Deadline for each regular issue is the 3rd 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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FROM THE PRESIDENT

The achievements of an organization are the results of the combined effort of each individual.
—Vincent Lombardi

In a recent conversation with Susie Ellis, Executive Director of the International Rhino Foundation (IRF), I was informed that IRF will be bringing back the IRF sponsored Indonesia trips for the third and fourth place fundraising winners of the 2012 Bowling For Rhinos (BFR) events. These trip winners will fly to Indonesia and visit with the Rhino Protection Units (RPUs). There, they will visit with the dedicated group of RPUs at the Rhino camps, their home base in the field. It’s an inspiring experience to be able to trek through the jungles where the world’s rarest rhinos roam! I had the pleasure of accompanying the last group of winners in 2009 and walked away with an incredible amount of memories as well as a better understanding of the challenges that are faced by the RPUs.

Many thanks to IRF for reinstating this program but actually, I would like to thank you all; your hard work this year raised the funds that allowed IRF to make this possible!

Goals set equals goals met

Last year, BFR Program Manager, Patty Pearthree set two very important goals for BFR: increase the number of events and total funds raised by 10 percent. Your response to these goals resulted in an 11 percent increase in events and an impressive 20 percent increase in total funds raised. An increase from 67 to 75 events and a total increase from $280,014.87 to $336,328.83 depict a team effort of unparalleled proportions!

AAZK Chapters are already gearing up for BFR 2013. If your Chapter has not organized an event yet, we invite you to become a part of this great effort. We stand alone as an organization of animal professionals in our abilities to make such contributions! My wife and I have already formed our team and look forward to joining the rest of you as we approximate towards our ultimate goal of $500,000!

Our organization does great things through the combined efforts of many individuals. In all that we do, we continue to work towards our vision of becoming leaders in the zoo and aquarium industry fostering professional development and personal connections that advance animal care, animal welfare and conservation. We are a work in progress, with great results within our reach.

As always, I welcome your thoughts and input. E-mail me at bob.cisneros@aazk.org; I would love to hear from you.

Proudly saving rhinos,

Bob Cisneros

"Some men see things as they are and say why - I dream things that never were and say why not."
—George Bernard Shaw

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For anyone who would like to make additional money for Bowling For Rhinos, we have an idea for you!

Hold an online auction for a “behind the scenes tour with a rhino keeper”. You could have this be the only item in the auction OR if you have artwork, ostrich eggs, rhino paintings, etc. you could add those on the auction site.

We have done the research & have found the best program for online auctions is called: “Bidding for Good”:

biddingforgood.com/auction/BiddingForGood.action

The main benefit over eBay is that you don’t get the fraudulent bid issue as much (if at all). The National Zoo’s clouded leopard project has used this site with great success.

For an online auction video demo, visit:

biddingforgood.com/online-auction-services/tools/online-auction-demo.html

**IRF: 5 Things in Rhino Conservation We’ve Never Seen Before**

Last year was a tough year for rhinos. The International Rhino Foundation reports five things that have never before been seen in rhino conservation:

5. Today, despite unspeakable losses to poaching, there are more black rhinos in Zimbabwe's Lowveld today than ever before. (But we can't let our guard down if we hope to save this critically endangered species!)

4. The first rhino born in Manas National Park (India) in this Century!

3. 618 rhinos poached in South Africa alone, as of today. The problem is expected to get worse.

2. 35 Javan rhinos remain on the planet. They are on the edge of extinction.

1. Andatu: The first rhino born at the Sumatran Rhino Sanctuary.

Number six was AAZK members setting the all-time Bowling for Rhinos fundraising record! Let's keep the momentum going. To learn more about these conservation stories from IRF, go to rhinos.org/donate/5-things-you-ve-never-seen-before.
The American Association of Zoo Keepers, Inc. (AAZK) is pleased to announce the call for proposals for the Bowling for Rhinos Conservation Resource Grant. This competitive grant is designed to fund projects focused on rhino conservation and research. The total amount of funds available in 2013 is $3,426.22. Successful proposals will reflect AAZK values and meet award criteria in one of four categories:

**Category 1 - In-situ Rhino Conservation and Research**
Short-term (less than one year), specific, field research projects on African or Asian rhino species conducted by an individual or organized group of individuals working under the auspices of a zoological facility, educational entity or AAZK Conservation Partner.

**Category 2 - In-situ Community, Educational or Medical Programs (Africa or Asia)**
Community education, school support or medical programs developed or administrated by an individual working under the auspices of a zoological facility, educational entity or AAZK Conservation Partner restricted to the continents of Africa or Asia. Preference may be given to local programs established and/or administrated by LWC (Lewa Wildlife Conservancy), IRF (International Rhino Foundation) or ACK (Action for Cheetahs in Kenya) endorsed partners.

**Category 3 - In-situ Species Conservation**
Short-term (less than one year), specific, field research projects on any species that shares the exact same ecosystem as: Asian, Javan, Sumatran, and African black or white rhino.

**Category 4 - Ex-situ Rhino Conservation and Research**
Short-term (less than one year), specific, zoological research projects on African or Asian rhino species conducted by an individual or organized group of individuals working under the auspices of a zoological facility, educational entity or AAZK Conservation Partner. Researcher(s) must be able to demonstrate evidence of partnership with a rhino conservation entity operating in Asia or Africa combined with a tangible benefit to an in-situ conservation project.

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

Applications are due no later than June 1st, 2013. Award announcements will be made on July 1, 2013.

Please visit [aazk.org](http://aazk.org) or contact Amanda Kamradt, Conservation Committee Co-Chair at amanda.kamradt@aazk.org for application or more information.
IRF Announces More Bowling For Rhinos Trips!

The International Rhino Foundation has announced that the award for top money raisers to win a free trip to Indonesia are back! Last year’s third and fourth place money raisers will be traveling to Indonesia with IRF this summer! The winners are Gil Myers of the National Capital Chapter of AAZK with $10,817 and Logan Agan of Oklahoma City AAZK with $9,589. Congrats Gil and Logan!

**Trip Rules:** The top two money raisers each year in “Bowling For Rhinos” will win their choice of a two-week trip to Lewa Wildlife Conservancy in Kenya or a two-week trip to visit the Indonesian Parks in Java & Sumatra. Third and fourth place winners will be offered the two remaining trips.

The two individuals visiting Lewa will travel together and arrange their trip with the assistance of the BFR Program Manager and the Administration office of AAZK, Inc. Travel will be February-March for Lewa and February-May of the following year for Indonesia. The Indonesia trips will be arranged through the IRF.

The two winners may choose to each bring a guest (Lewa & Indonesia) but the guest must pay their own expenses (flights) and other costs.

The winners’ trips to Lewa are paid for by Lewa Wildlife Conservancy (LWC) through AAZK, Inc. The allowance per winner for each trip shall not exceed $2,250. This includes round trip air fare from winner’s location to Nairobi and round trip air fare from Nairobi to LWC and one night hotel in Nairobi.

The International Rhino Foundation will cover the costs of the two trip winners to Indonesia.

The winners must be paid, National AAZK members in good standing at the time of their bowling event.

It is requested that trip winners submit an article to the *AKF* within a year of travel. This will aid others in knowing what to expect and to promote BFR.

The same person can only win each trip once. This is to encourage more people to try to win and give an opportunity for more people to visit the sanctuary and see the benefit of their hard work. Winners of the Lewa trip, ARE eligible to win the trip to Indonesia once.

Canadian participants count their total in Canadian money. Only money which is turned in to the BFR National Program Manager by September 1 of the same year can be included in the contest.
CALL FOR PAPERS!

The 40th National AAZK Conference will be hosted by the North Carolina Chapter from September 22-26. This is the first call for papers! The theme is “Connecting Zookeepers to Wildlife”.

Abstracts will be accepted for papers and posters relating to the theme and/or showing advances in animal care and the profession of zoo keeping.

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

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

Expanded Paper Sessions
The expanded paper session turns an exceptional paper presentation into an hour-long workshop including presentation, problem-solving, and group discussion. You will be notified by the Professional Development Committee if your paper is being considered for an expanded paper session.

Guidelines for Abstracts:
Abstracts should be no longer than 300 words and should be submitted in Microsoft Word via e-mail to aazk.pdc@gmail.com.

Be sure to include the following information:
• Title of paper or poster (specify which type of presentation)
• Full name of presenter and authors
• Institution/Affiliation
• Position/Title
• Short bio of yourself for introduction
• A/V needs
• Contact information, including e-mail address

Presenters will be notified regarding acceptance by June 1st, 2013.
All final and complete papers must be received by August 1st in order to be included in the program.
Pfaff Memorial Felid Husbandry Course Scholarship

Denver Zoo is proud to announce the availability of a $1,500.00 scholarship to attend the 2013 Felid Husbandry course being presented by the AZA Felid TAG on June 23-26, 2013. This course will be hosted by Jacksonville Zoo and Gardens, Jacksonville, FL. The scholarship is in memory of Ashlee Pfaff, Denver Zoo Carnivore Keeper who died in a tragic accident while working at the zoo in 2007.

We invite felid keepers who are interested in applying for this scholarship to submit:

1. A letter outlining:
   • how you feel attending this training course will benefit you
   • the animals you care for
   • the facility where you work
   • felid conservation projects in which you or your facility is involved
   • your experience working with felids
   • your career goals as they relate to felid management and conservation

Please limit your response to no more than 500 words.

2. A letter of support from your supervisor or facility Director.

Applications must be received via e-mail no later than 15 March 2013 and should be sent to:

Ashleigh Lutz-Nelson
AZA FTAG Secretary
Ashleigh.Lutz@BuschGardens.com

Please submit your application via e-mail if at all possible either in Microsoft Word or PDF format by 15 March 2013. The scholarship recipient and all applicants will be notified of the award by 15 April 2013.
Conservation Opportunity Database

Have you always wanted to see the animals that you work with in the wild? Do you want to help save endangered species and their habitats in the field? The AAZK Conservation Committee can help you find the perfect place abroad or right in your local community. Find the Conservation Opportunity Database on the web at aazk.org, “Members section.” If you have an organization that you feel would be a good fit for the Conservation Opportunity Database please send their contact information to conservationdatabase@aazk.org.

AAZK Awards Committee Accepting Nominations

The American Association of Zoo Keepers' Awards Committee is accepting nominations for the Lifetime Achievement Award, Jean M. Hromadka AAZK Excellence in Animal Care Award, The Lutz Ruhe Meritorious Achievement - AAZK Professional of the Year Award, the Lee Houts Enrichment Excellence Award, the Certificate of Merit for Zoo Keeper Education, the Certificate of Excellence in Exhibit Renovation, the Certificate of Merit in Conservation, the Mazuri Animal Nutrition Award, and The AAZK Chapter of the Year Award which will be presented at the 2013 AAZK Conference in Greensboro, North Carolina. The deadline for nominations is 1 May 2013. Information concerning the qualifications, nomination procedure, selection procedure and an explanation of the awards may be obtained at aazk.org, under committees/awards.

Behavioral Husbandry Committee Announces New Members

The AAZK Behavioral Husbandry Committee would like thank everyone for the overwhelming interest in our recent committee openings. From a very competitive field of candidates we are happy to announce the following new members: Megan Wright (Blank Park Zoo), Casey Plummer (Caldwell Zoo), Amanda Ista (Milwaukee County Zoo) & Pattie Beaven (Woodland Park Zoo). We would like to officially welcome them to the team and let the AAZK community know the BHC is continuing to work hard to serve your behavioral husbandry interests and needs.
An Update from our Conservation Partners at Seafood Watch

Monterey Bay Aquarium
Seafood Watch

The Monterey Bay Aquarium Seafood Watch® program helps consumers and businesses make choices for healthy oceans by recommending which seafood items are "Best Choices," "Good Alternatives," and which ones to "Avoid." Seafood Watch recommendations are based in sound and rigorous science undertaken by an in-house team of marine biologists.

Seafood Watch raises consumer awareness through outreach efforts, including its consumer seafood guides. Since 1999, we've distributed over 40 million pocket guides (shown below), and our free app for iPhone and Android has been downloaded a million times.

Seafood Watch works with 100 conservation outreach partners – zoos, aquariums, science centers and other institutions focused on public education and outreach – across North America, including the AAZK. Through these partners, Seafood Watch is able to spread the word about ocean-friendly seafood and why consumer choices really make a difference in protecting our oceans.

Seafood Watch would love to hear and promote your stories as you engage your audiences in these issues. Contact partnership manager Karin at KStratton@mbayaq.org

Photos courtesy of the Monterey Bay Aquarium
COMING EVENTS

Post Your Upcoming Events here — e-mail shane.good@aazk.org

April 14-19, 2013
ABMA Annual Conference
Toronto, Canada
For more information, visit theabma.org.

April/May 2013
Chimpanzee Meeting and Husbandry Workshop, Houston, TX
The Chimpanzee SSP and the Houston Zoo are hosting the next Chimpanzee Husbandry Workshop to take place April 30 – May 2, 2013. The Chimpanzee SSP meeting will precede the workshop on April 29, 2013. Please visit houstonzoo.doubleknot.com/event/chimp-husbandry-workshop-registration/1250219 for more information.

May 5-10, 2013
Eighth Biannual Rhino Keepers’ Workshop
Hosted by San Diego Zoo Global. For Call for Papers and more information contact laubery@sandiegozoo.org

June 5-6, 2013
2nd International Symposium on Zoo Animal Welfare, Brookfield Zoo
For more information: czs.org/symposium

June 9-13, 2013
Shape of Enrichment Workshop
Omaha’s Henry Doorly Zoo and Aquarium
Omaha, Nebraska
Hosted by the Omaha AAZK Chapter
For more information contact: robinfreise@hotmail.com or visit enrichment.org and click under “New Events”

June 13-16, 2013
3rd Seminar on Venomous Animal Safety and Husbandry, Hosted by Catoctin Wildlife Preserve and Zoo, Thurmont, MD
For more information visit CWPZoo.com
Registration deadline is May 25, 2013.

June 23-26, 2013
Felid Tag Husbandry Course, plus...

June 27-29, 2013
AZA Felid TAG Mid-Year Meeting
Hosted by Jacksonville Zoo and Gardens, Jacksonville, FL.
For more information go to: felidtag.org or contact felidtag2013@jacksonvillezoo.org.

July 8-12, 2013
Zoos and Aquariums Committing to Conservation (ZACC)
Hosted by BlankParkZoo, Des Moines, Iowa.
Registration is available at blankparkzoo.com/index.cfm?nodeID=48429&audienceID=1.
Contact Jessie Lowry with questions at jlowry@blankparkzoo.org.

August 7-10, 2013
11th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles
Co-hosted by the Turtle Survival Alliance and the IUCN-TFTSG in St. Louis, Missouri.
Please visit turtlesurvival.org for more information, or contact Heather Lowe at Hlowe@turtlesurvival.org.

September 22-26, 2013
AAZK NATIONAL CONFERENCE
Hosted by North Carolina Zoo and North Carolina AAZK Chapter, Asheboro, NC
For more information go to: ncaazk.com/2013nationalconference.htm

October 13-17, 2013
WAZA Annual Conference
Hosted by Disney’s Animal Kingdom. For more information go to: waza.org

October 3-6, 2013
Advancing Bear Care 2013
Woodlands Wildlife Refuge, Clinton, NJ
For more information visit bearcaregroup.org

November 10-14, 2013
Zoological Association of America (ZAA) Annual Conference, Phoenix, AZ
For more information go to zaa.org. Deadline for abstracts is April 1, 2013.
Big Cat Internships Available
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- Zoo & Aquarium Science
- Animal Training & Enrichment
- Wildlife Rehabilitation

Our programs offer a rich, multidisciplinary curriculum integrating animal behavior, training, enrichment, husbandry, and education. Other benefits include:

- Professional faculty
- Small class size, ensuring personal attention
- Flexibility to work at your own pace
- Low cost tuition assistance
- Accredited as an Authorized Provider by the International Association for Continuing Education and Training

Visit our website at www.animaledu.com, contact us at support@animaledu.com, or call toll free (866) 755-0448.
AAZK Announces New Members

New Contributing Members
Geoffrey Hall, Kansas City (MO)

New Institutions
Bergen County Zoo, Paramus (NJ)
Roger Sweeney, Virginia Zoo, Norfolk (VA)

New Professional Members
Katelyn Deaton, Franklin Park Zoo, Boston (MA)
Trisha Cheever, The W.i.l.d.
Lawrie Arends, Turtle Back Zoo, NJ
Brian Sheets, Seneca Park Zoo, Rochester (NY)
Kaitlyn Olsen, Elmwood Park Zoo, Norristown (PA)
James Miller, Elmwood Park Zoo, Norristown (PA)
Megan O Donnell, Elmwood Park Zoo, Norristown (PA)
Laura Laudenslager, Elmwood Park Zoo, Norristown (PA)
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April Snider, Zoo Atlanta, Atlanta (GA)
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Lion Country Safari Inc., Loxahatchee (FL)
Detroit Zoological Society, Royal Oak (MI)
Milwaukee County Zoo, Milwaukee (WI)
Wildwood Wildlife Park, Minocqua (WI)
The Wildcat Sanctuary, Sandstone (MN)
Great Bend Zoo, Great Bend (KS)
Frank Buck Zoo, Gainesville (TX)
El Paso Zoo, El Paso (TX)
Tautphaus Park Zoo, Idaho Falls (ID)
Safe Haven Rescue Zoo, Imlay (NV)
Wild Wonders, Inc., Bonsall (CA)
The Limping Horse, the Sunday Mail, and the Old Testament

Brett Bannor

To the majority of the people caught up in the post-Christmas bustle in New York City; those last couple of days of December 1974 heralded a major milestone, the imminent ending of the old year and the start of a bright new one. Mabel was a horse, however, so she wasn’t aware of the marking of time recognized by Gotham’s two-legged mammals. What she did know—speaking of legs—was that her limbs hurt, and working her normal equine job of pulling a hansom cab was only aggravating her pain. And being an animal, she couldn’t tell her owner or her driver about her aches. They should have known anyway; Mabel’s limp was obvious. Was it the opportunity to make as much money as possible during the holiday season, with all the tourists visiting New York, which led Mabel’s caretakers to ignore the lameness?

One person did not ignore Mabel’s limp: an inspector for a local animal welfare organization. He looked at the horse on December 30th and warned the driver that Mabel was not fit to do any more work that day. Back to the stables she went.

In a logical world, when an animal welfare inspector has advised a driver to take his limping horse out of service for the day, the driver would not hitch up that very same horse and take it out for work the following day, especially if the animal is still limping. But that is exactly what Mabel’s driver did, apparently under the command of his superior, and the same inspector saw Mabel back at work. We may assume the inspector was perturbed; we know from the legal record that he issued a summons charging Mabel’s owner with violating a New York State anti-cruelty law.

Being charged with violation of a law doesn’t by itself operate as a cease and desist preventing the accused from continuing to do business. And so less than two weeks later, on January 10th, 1975, Mabel was once again pulling that hansom cab. A different inspector from the one in December looked at Mabel and saw that the horse was still limping. Another summons was issued.

The same day, apparently as a consequence of the second inspector’s observation, a veterinarian gave Mabel a thorough checkup. He concluded that the lameness had developed over an extended period of time. The doctor was sufficiently confident in this diagnosis to testify in court that the horse must have been in pain the day of the earlier citation, December 31st, and that furthermore Mabel should be permanently retired from service.
In court, Mabel’s owner argued in his defense that the anti-cruelty law he was charged with breaking did not apply to his or his employees’ actions. That statute read:

“...A person who overdrives, overloads, tortures or cruelly beats or unjustifiably injures, maims, mutilates or kills any animal, whether wild or tame, and whether belonging to himself or to another, or deprives any animal of necessary sustenance, food or drink, or neglects or refuses to furnish it such sustenance or drink, or causes, procures or permits any animal to be overdriven, overloaded, tortured, cruelly beaten, or unjustifiably injured, maimed, mutilated or killed, or to be deprived of necessary food or drink, or who willfully sets on foot, instigates, engages in, or in any way furthers any act of cruelty to any animal, or any act tending to produce such cruelty, is guilty of a misdemeanor, punishable by imprisonment for not more than one year, or by a fine of not more than five hundred dollars, or by both.”

In his published opinion, Judge Max H. Galfunt of the New York City Criminal Court framed the case against Mabel’s owner, thereby also describing the standard the state would have to meet for conviction. Galfunt reasoned that a conviction was sustainable only if two questions could be answered in the affirmative. First, did the failure to provide Mabel with timely veterinary care constitute negligence? (Notice the statute does not specifically say anything about veterinary care.) And second, did the defendants have a culpable state of mind? In other words, were they aware of the harm they were doing to Mabel?

The judge ruled yes to both questions: lack of adequate veterinary care does constitute negligence and Mabel’s people worked her even when it was clear she was suffering. Guilty!

As is common in legal reports, the Judge in People v. O’Rourke cited several earlier cases. But he also cited a source much older than any common law proceedings. Wrote Galfunt:

History prior to the middle of the 19th century is devoid of any laws as to cruelty to animals. Only recently has there been codification in our legal system forbidding cruelty to animals. But, the moral obligation of man toward the domestic animal is well documented in the Bible. “A righteous man regardeth the life of his beast” (Proverbs 12:10). He has consideration for its feelings and needs.

The Bible also states that if you see an animal hurt or overburdened, one should not look away but help it. (Deuteronomy 22:4.)

It is truly a humanitarian sentiment that domestic animals are in fact considered part of the human community. Thus, they should be treated with respect and given proper care.

Even those animal lovers who do not look to Scripture for guidance might salute the Old Testament for such sentiments as Galfunt quoted from Proverbs and Deuteronomy. But the Judge missed another, better known part of the Old Testament that also can be seen as an early anti-cruelty message—or as Galfunt would put it, a “moral obligation of man toward the domestic animal.” Paradoxically, it comes in a part of the Bible that is quite well-known, but its significance for animals like Mabel can easily be missed by people living in the industrial and post-industrial world. It is the Fourth of the Ten Commandments.

As stated in Deuteronomy 5:14, the Fourth Commandment reads:

But the seventh day is the Sabbath of the Lord thy God: in it thou shalt not do any work, thou, nor thy son, nor thy daughter, nor thy manservant, nor thy maidservant, nor thine ox, nor thine ass, nor any of thy cattle, nor thy stranger that is within thy gates; that thy manservant and thy maidservant may rest as well as thou.

Emphasis added. Little more than a century ago in America—and still today in portions of the developing world—if there was heavy work to be done, draft animals were a part of it. For most of human history since livestock domestication, a horse like Mabel didn’t cart around tourists for fun; there were plows to be pulled so crops could be planted and people could eat. Rest for humans one
day per week meant the ox and the ass also had a break; no doubt to their benefit.

Today when we drive swiftly down an interstate highway and see a large sign proclaiming that a lot of 10.3 acres is for sale, how easy it is to forget that in this advertisement there is a remnant of our pre-industrial past—the acre came into prominence as a unit of measure because it originally meant the size of a wheat field that could be plowed in one day by a man with a yoke of oxen (Grillo, 1960:147). This was a world that persisted well into the history of the United States. In 1818, shortly after leaving office, America’s fourth president, James Madison, spoke to a Virginia agricultural society; his address included an endorsement of oxen as being significantly superior to horses for plowing (Madison, 2007: 89). Thanks to modern engine-powered tractors, it is unlikely that when President Obama leaves office his speeches will reference such matters.

Just two years before Madison pontificated on plowing, while he was President, a debate took place in Congress in which one representative voiced the Fourth Commandment idea of Sunday rest for beast as well as man. On Saturday the second of March, 1816, the gavel fell and the House of Representatives began its proceedings for the day. The assembly got out of the way some housekeeping measures, such as reading a letter from the Secretary of the Treasury on recent additions to the “funded and floating debts of the United States.” A message was read from the Senate announcing that they had passed a bill to reduce taxes on Americans for the year 1816; the House was formally asked to concur. Some other small matters were attended to, and then Representative James Tallmadge took the floor to propose an amendment to the Post Office Bill the House was considering. Tallmadge, like Mabel the horse, hailed from New York City.

Tallmadge’s amendment was brief and to the point: “And be it further enacted that no mail be transported on the Sabbath; nor shall any Post Office be opened for the receipt of letters, packages, or newspapers, on the Lord’s Day; any law or usage to the contrary notwithstanding.”

As would be expected from a Congressman who places words such as “the Sabbath” and the “Lord’s Day” in proposed legislation, Representative Tallmadge argued his point with rhetoric that might seem more at home in the pulpit. “It would be needless if not indecorous,” he declared, “to prove the Divine institution of the Sabbath day.” And further: “I venture to say that there is not a nation on earth, where the great Jehovah is not respected by a due observance of the Sabbath, that the people can be said to be either prosperous or happy.”

But amid Tallmadge’s highly sectarian speech, he also raised a secular, humane point for ending Sunday mails. Said the Congressman to his colleagues: “The cessation of labor through one day out of seven, serves greatly to relieve and refresh both man and beast, and thus to fit them more effectually to perform the duties of the ensuing week.” (Emphasis added.) Here Tallmadge was buttressing his position with the Fourth Commandment stand on working animals; for all his religious rhetoric he saw this Biblical mandate not just as a means of keeping the Sabbath holy for man, but also of giving God’s creatures a much needed break.

In spite of the passion by which Tallmadge made his case, his amendment was resoundingly voted down 100 to 35. The United States Postal Service would continue delivering mail on Sundays until 1912 (Myerson, 2012: 233).

It bears reminding that Tallmadge made his plea at a time when all overland transport of mail relied on horses. Trains did not appear until 1830, fourteen years after the Sunday mail debate (Barzun, 2000: 539). And speaking of trains, it is notable that precisely because of locomotives, the America of the late nineteenth century—about halfway in time between Tallmadge’s 1816 speech and Mabel’s 1974 limp—was a world where horses had a significance far surpassing their early carrying of mail or later carting of Central Park tourists.

To be sure, trains made it possible to swiftly and efficiently move goods from one part of the country
to another. But once a freight train pulled into a city in the years before petroleum-powered trucks, the only way those goods could then be transported to final destinations several miles away from the station was by horse-drawn vehicles. At the end of the nineteenth century there were about sixty thousand steam locomotives in the United States; as a consequence there were also about thirty million horses—one horse for every four people. About a third of all cultivated farm land in America was devoted to providing food for those equines—some 88 million acres of land. It has been suggested that if cars and trucks had not been developed to replace horses as internal transport within cities, the progress of industrialism might have ground to a halt. (Weightman, 2007: 299-301).

Perhaps it is no surprise that it was in an America of thirty million working horses that animal welfare legislation came to the forefront. How often back then must someone have noticed a horse pressed into service in spite of a limp like Mabel’s? This is not the place to discuss the nineteenth century humane movement; it is ably summarized in Favre & Tsang (1993), a paper which may be read online.

So the strands of the story connect across the years, from a few words in the Old Testament, through a Madisonian era congressional debate on mail delivery, through the burdens placed on horses in the heyday of the railroads, to a lame horse in the space age and a judge who cited the Old Testament on that horse’s behalf, bringing the tale full circle. Today those entrusted with animal care—like Zoo Keepers—believing in the beauty and worth of all living things, have amended and expanded the story by wanting the best for all animals, not just for oxen dragging a plow or horses pulling a cart. And the concern animal caretakers have for the creatures they care for is expressed not just on Sunday, but all seven days a week.

References

The information on Mabel the horse is drawn from the case report of People v. O’Rourke; its legal citation is 83 Misc. 2d 175, 369 N.Y.S. 2d 335 (Crim. Ct. of the City of New York, 1975). Details of Representative Tallmadge’s Sunday Mail Speech are from Volume 29 of the Annals of Congress, pp. 1122-25. Biblical quotations are from the King James Version. Other sources consulted were:


The Separation of Church and Zoo?

By
Melissa Pritchett, Antelope Keeper
Saint Louis Zoo
Saint Louis, Missouri

Several months ago, I was giving a behind-the-scenes giraffe chat when I was asked, “What is the evolutionary history of the giraffe?” What initially went through my mind was, “How am I supposed to answer that? Will I get in trouble if I tell him I think God is the Creator of all life? Does he mean macro-evolution or micro-evolution, Lamarck’s view or Darwin’s?” The encounter got me to wondering what I am to say during situations like these. Of course, I believe in micro-evolution, species changing over time due to environmental pressures and genetics. However, I do not agree with macro-evolution, the concept that every living organism has a common ancestor and one “kind” of animal changes into another “kind”. Therefore, in the zoo setting, I sometimes find myself in the midst of a group of people who hold a different view on how the animals we care for came to be.

Robert Buchanan recently gave a talk at our zoo on the plight of the polar bear. As he was describing these amazing creatures and their adaptations, he said, “Isn’t it great what Mother Nature has done?” I was sitting in the audience thinking, “Don’t you mean isn’t it great what our Creator has done?” I’m curious to know how many people thought the same thing and if there is a platform where such an opinion could be expressed?

Some zoos have tried to present alternative views to their visitors. In 2005, the Tulsa Zoo responded to a public desire to have a creation exhibit. The city board agreed as long as other views on origins, including evolution, were displayed as well (AP, 2005). However, one month later, the board reversed its decision to build this exhibit (Schafer, 2005) (USA Today, 2005). I believe this approach of presenting people with all the facts and letting them make up their own minds would have been the best thing to do. However, others feel that any presentation of anything other than Darwin’s evolution is a threat to society. The Cincinnati Zoo met with an angry outcry when it tried to offer a promotional deal with the nearby Creation Museum. Protests included a statement signed by scientists saying that, “Students who accept this material as scientifically valid are unlikely to succeed in science courses at the college level. These students will need remedial instruction in the nature of science, as well as in the specific areas of science misrepresented by Answers in Genesis” (NCSE, 2008). Isn’t the point of science to look at all the facts and work toward the truth instead of excluding a theory just because you do not like it?

**Whether someone is a creationist or evolutionist, a free expression of ideas should be welcomed.**

Our own St. Louis Zoo has housed Darwin himself, in robotic form, telling visitors that all animals are related to each other through evolution. It has also presented ‘Lucy’, (*Australopithecus afarensis*) as an ancestor to humans. This display drew its own bit of controversy over whether the hands and feet were accurately depicted (Niednagel, 2003).

As educational institutions, zoos have a responsibility to present all the facts, without bias, not looking down on those who hold a different opinion, but striving to find the answers together. Whether someone is a creationist or evolutionist, a free expression of ideas should be welcomed. Now, let’s go back to my visitor’s question. What I said was, “I don’t personally believe that they did evolve. I believe that they were designed that way.” He smiled and nodded. I don’t think he was offended
YA’LL COME JOIN US AT THE 40TH ANNUAL AAZK NATIONAL CONFERENCE!

THE 2013 NATIONAL AAZK CONFERENCE WILL BE HELD IN GREENSBORO, NC FROM SEPTEMBER 22-26, 2013

The NC Chapter AAZK is excited to invite you to our little area of the country and show you some real southern hospitality, where you can get your tea sweetened and your little heart blessed. We have beaches and mountains and God liked us so much, he made the sky Carolina blue!

REGISTRATION
This year, registration will be offered online only. To register, please visit our website: www.ncaazk.com and click on “2013 National Conference”. All conference events, such as Pre & Post conference trips, full week or single day registration for members and non-members, workshops, icebreaker, luncheon, banquet and zoo day are offered online for signup at the time of registration.

PRICES

Full week registration:
- Members: $230 (includes all paper sessions, icebreaker, zoo day, awards luncheon, banquet, t-shirt and $5 carbon offset fee). Late registration rate = $280 (Late registration deadline is August 15, 2015)
- Non-members: $280 (includes all paper sessions, icebreaker, zoo day, awards luncheon, banquet, t-shirt and $5 carbon offset fee). Late registration rate = $330 (Late registration deadline is August 15, 2015)

Other rates:
- Daily registration: $90 /Late registration rate = $100 (Late registration deadline is August 15, 2015)
- Icebreaker only: $40
- Banquet only: $75
- Conference t-shirt: $15

For registration questions, contact Mindi Avery at registration@ncaazk.com.
ACCOMMODATIONS
Conference delegates will be staying at the Sheraton Greensboro at Four Seasons and Joseph S. Koury Convention Center (3121 High Point Rd at I-40, Greensboro, NC, 27407). The conference center is located about 30 miles from Asheboro, NC and the NC Zoo. To view the hotel website, go to www.sherastongreensboro.com. The conference room rate is $130/night for single/double/triple/quad rooms. These rates will be guaranteed until August 23, 2013. When booking, please enter the group attendee code “zoo13” (not case sensitive) to ensure your discounted rate. Also make sure to make your reservations for airport to hotel shuttle service.

TRAVEL
Delegates can fly into the Piedmont Triad International Airport (GSO), which is 10 miles from the convention center. Airport shuttles are provided complimentary by the Koury Convention Center to guest booked at the Sheraton Greensboro. When making your hotel reservations, provide the desk with your flight information and they will have a shuttle there to pick you up when you arrive. To schedule a pickup, call 336-292-9161. Delegates can also travel by train (Amtrak-6 miles) or bus (GSO Bus Terminal-5 miles) to arrive in our fair city. For driving directions from PTI (Greensboro), RDU (Raleigh-Durham) or CLT (Charlotte) airports, you can go to the hotel’s website.

ICEBREAKER
The 2013 Icebreaker will be held at the Natural Science Center of Greensboro, which is the only facility in the state to offer an accredited science museum and zoological park, OmniSphere, and aquarium all in one destination. You will be able to see everything from dinosaurs and weather to copperheads and tigers. They will be debuting their brand new Carolina Sciquarium, which is the brand new 23,000 square foot LEED designed aquarium, that focuses on science education. This new exhibit will feature various sharks, otters, fishing cats, moray eels and many more. To learn more about the Natural Science Center of Greensboro visit www.natsci.org.

ZOODAY
Make sure you get plenty of sleep the night before, because we are getting up bright and early on Wednesday, September 25, 2013 for ZooDay!!! The NC Zoo, located at the foot of the Uwharrie Mountains has more than 1600 animals, 52,000 plants and 5 miles of shaded pathways. Connect with wildlife from 2 different continents as you explore 500 acres of exhibits carefully constructed to resemble natural habitats. Walk from Africa’s grasslands to North America’s Arctic Coast. Come visit the NC Zoo... and connect your life to wildlife! To learn more about the NC Zoo, visit www.nczoo.org.
PROGRAM
We welcome Vanessa Woods, author of *Bonobo Handshake*, writer, researcher, journalist, who spends her time at Duke University and Lola ya Bonobo in Congo, and Dr. Mike Loomis, Chief Veterinarian at the North Carolina Zoological Park and coordinator of elephant conservation program in Cameroon, Africa, as our keynote speakers.
We strived to offer diversity in our workshops this year. From invertebrates to primates, fish to hoof stock, and we threw in a few birds. We also wanted to add some things we think we excel at, fun things, like telemetry, grant writing, browse identification and photography. And let’s not forget those things that help you grow in your career and keep you safe while working. Check out our website, [www.ncaazk.com](http://www.ncaazk.com) to register for our workshops.

EXHIBITOR INFORMATION
The exhibitor hall at this year’s conference will also be the place where our breaks are being held. This allows the most exposure for our exhibitors. Exhibitors can be an AAZK chapter, conservation partner, conservation organization or company that could use exposure in the zoo world. Please contact Brigitte Thompson at [Brigitte.thompson@nczoo.org](mailto:Brigitte.thompson@nczoo.org) for more information on becoming an exhibitor.

AUCTION EVENTS
The 2013 Conference committee is looking for items to be donated for both the Silent and Live Auctions. Items to be donated for the Silent Auction can be anything from animal art, collectable artwork, gift certificates, jewelry, zoo memorabilia, and so much more. Unique and creative items are preferred. Items to be donated for the Live Auction should be valued at $200 or above.
There are several ways of donating items. Items brought to the conference by delegates will be able to hand their items in when they register. Items can also be sent to the following address: Brigitte Thompson, 3755 Zoo Parkway, Asheboro, NC 27205. Please contact the chapter at [Brigitte.thompson@nczoo.org](mailto:Brigitte.thompson@nczoo.org) if you plan to send your item via mail. All donations must be accompanied by a donation form which can be found on the conference website.
For any information on the auctions, please contact Brigitte Thompson at the email address above.

Sponsors
Sponsors are always needed at various levels. Please contact Brigitte Thompson at [Brigitte.thompson@nczoo.org](mailto:Brigitte.thompson@nczoo.org) for more information on becoming a sponsor.

What is the “Carbon Offset” Fee?
For each conference registration, $5 is going to be used to offset your carbon cost of attending the conference. The money will go to the NC Chapter of Acres for the Atmosphere, who will plant trees to help absorb that extra carbon dioxide.
PRE- & POST-CONFERENCE TRIPS

Duke Lemur Center and Durham Museum of Life and Science; September 22, 2013

Participants will leave from Koury Convention Center in Greensboro for a 10:30 am tour at the Duke Lemur Center (www.lemur.duke.edu). DLC is a leader in conservation, education and research and houses over 22 species of lemur. The tour will include an extensive behind the scenes tour of the facilities and information on the animal care program. After the tour we will be getting lunch in Durham (included in fee) and heading to the Durham Museum of Life and Science (www.lifeandscience.org). This facility includes a museum and an 84-acre interactive science park. Participants will return in time for the icebreaker at the Natural Science Center of Greensboro. Cost per participant is $55 per person. This trip is limited to 30 participants.

Sylvan Heights Bird Park, North Carolina Aquarium on Roanoke Island and the Nags Head, NC Coastal Area; September 19-20 or 19-21, 2013

Participants will have a choice of a two day or three day trip to the coastal region of North Carolina. Our first stop will be a tour of Sylvan Heights Bird Park (www.shwpark.com), where you will visit one of the world’s largest bird collections. Then we will travel to Nags Head on the Outer Banks of NC, where we will explore coastal, ecological and historical landmarks, along with the North Carolina Aquarium on Roanoke Island (www.ncaquariums.com/roanoke-island) for a tour of the facilities and lunch. Following the aquarium, depending on the two day or three day option, we will return to Greensboro, NC or remain in Nags Head, NC for the night. The day 3 option will be spent exploring the area or spending time on the beach, it’s your day.

Cost per person: (This trip is limited to 25 participants)
Option 1 (one night): double occupancy - $80; single occupancy - $130. (Cost of two breakfasts / two lunches is included).
Option 2 (two nights): double occupancy - $135; single occupancy - $235. (Cost of two breakfasts / two lunches is included).
For more detailed information on this trip, please visit the registration website.

Asheville, NC Post-conference trip; September 27 & 28, 2013

Participants will depart from Koury Convention Center the morning of September 27 and head to the beautiful mountains of NC. The first stop will be the Biltmore Estate and Vineyards (www.biltmore.com). Biltmore is the Vanderbilt family’s 8,000-acre estate, the largest privately owned home in the United States. The evening will include exploring beautiful Asheville and overnight accommodations (single and double occupancy available). The morning of the 28th participants will head to the Western Carolina Nature Center (www.wildwnc.org) one of the AZA accredited facilities in NC. WCN CC features one of the largest collections of Southern Appalachian animal species in the world. After touring the center participants will return to Greensboro. Cost per person: double occupancy $100, single occupancy $125. Cost of food not included. This trip is limited to 25 participants.
or shocked, but he didn’t say he agreed with me either. But, that’s okay. We can still marvel at the giraffes together.

Questions for your considerations:

1. What extent, if any, do you think evolution has played in the development of animal species and the human race?
2. What extent, if any, do you think creation has played in the development of animal species and the human race?
3. What encounters have you had with someone who holds a differing opinion? Were these encounters positive or negative?
4. Do you feel these issues should be addressed by zoos? Why or why not? If not, where should they be addressed?

Speaking tips for front line employees:

1. Communicate in a calm, respectful manner. This subject can evoke strong reactions. Watch your tone. It is okay to disagree, just do it with gentleness and respect.
2. Define your terms clearly. The term “evolution” can encompass many things. All creationists do not believe in the same creator.
3. Ask, “What do you mean by _______________?”
4. Make sure you look the person in the eye and listen. Do not be thinking of your response while they are talking.
5. Be informed about both sides of the topic. Know why you believe what you believe.

References


Courtship, Nesting, and Aggression in Gentoo Penguins at the Milwaukee County Zoo

Jacqueline Hulina, Morgan Lauf, and Susan Lewis, Ph.D.
Department of Life Sciences, Carroll University
Waukesha, Wisconsin

Introduction:

Understanding courtship and breeding behaviors is critical to the management of wild and captive species facing population declines. Gentoo penguins (Pygoscelies papua) are listed as declining and approaching threatened status by the IUCN (Birdlife International, 2010). Establishing a captive environment that promotes breeding while minimizing intraspecific conflict is critical in zoos.

Gentoo penguins form monogamous pairs that breed only once per year (Roscoe, 2008), producing an average of two eggs per nest. Extensive parental care, including incubation, food provisioning, and nest defense, allows for chicks to survive in a harsh environment. Parental care may even extend past fledging, as adult Gentoo penguins have been observed to offer food to chicks that have dispersed and then returned to their original colony (Polito & Trivelpiece, 2008).

There is disagreement among researchers about the relative amount of time and energy invested by male and female Gentoo penguins in courtship/nesting behaviors. Polito and Trivelpiece (2008) noted a higher level of female parental investment in post-copulation behavior. Further, females have been shown to lose more biomass during chick rearing compared to males, suggesting that post-copulation parental investment is not equal between the sexes (Lescroël, 2009). On the other hand, some studies show that males and females invest equal proportions of time incubating eggs (Croxall, 1982; Davis, 1989), leading other researchers to suggest that parental investment between males and females is nearly equivalent (Bingham, 2008).

The Milwaukee County Zoo successfully bred Gentoo penguins for the first time in 2010-11, with
two pairs producing chicks in the 2010-11 breeding season. The objectives of this study were to: a) monitor courtship and breeding behaviors of males and females during the second breeding season, b) compare the behavior of birds that were successful breeders in 2010-11 to those that were unsuccessful, and c) investigate factors influencing aggression during courtship and breeding. We predicted that the amount of time invested in courtship/nesting behaviors would differ between genders. We expected an increase in the amount of time invested in courtship/nesting behavior as they entered the breeding period and a correlation between increased courtship/nesting behaviors with breeding success. We also predicted that the frequency of aggressive behaviors would increase throughout the courtship/nesting period, with a higher amount of aggressive behaviors shown by females.

Methods:

We investigated the behavior of captive Gentoo penguins at the Milwaukee County Zoo. The exhibit contains eight Gentoo penguins (Pygoscelies papua) and twelve rockhopper penguins (Eudyptes chrysocome). Three male/female adult pairs were observed (Table 1). In the 2010-11 season, two pairs produced chicks (Oscar & Daphne, Felix & Olive). Due to a medical situation, the remaining male (Marvin) was kept at the Animal Health Center and thus was not present in the exhibit during the 2010-11 courtship period. The remaining female (Fiona) did not appear to assist in chick rearing in 2010-11. Marvin was returned to the enclosure after the chicks were hatched. The other two Gentoo penguins in the enclosure were chicks from the previous year that had not yet reached sexual maturity, and thus were not considered in the study. All penguins were marked with individually-recognizable combinations of colored bands.

<table>
<thead>
<tr>
<th>Name</th>
<th>Age (years)</th>
<th>Gender (M/F)</th>
<th>Reproductive Success 2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oscar</td>
<td>5</td>
<td>M</td>
<td>+</td>
</tr>
<tr>
<td>Daphne</td>
<td>11</td>
<td>F</td>
<td>+</td>
</tr>
<tr>
<td>Felix</td>
<td>9</td>
<td>M</td>
<td>+</td>
</tr>
<tr>
<td>Olive</td>
<td>11</td>
<td>F</td>
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</tr>
<tr>
<td>Marvin</td>
<td>5</td>
<td>M</td>
<td>-</td>
</tr>
<tr>
<td>Fiona</td>
<td>10</td>
<td>F</td>
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</tbody>
</table>

Table 1. Gentoo Penguin Reproductive History

The exhibit was well suited for penguin nesting with multiple flat rock surfaces at varying heights around the perimeter. The rock surfaces surround a pool with a rock column in the center that forms a bridge to the perimeter rocks (Figure 1). The center rock blocked a portion of the underwater section of the enclosure from observation, but rarely affected data collection. The enclosure was kept at 7.2°C - 10°C. Observations were made from the public viewing area and observers moved to follow the focal animal during each observation session. In October, zoo keepers placed small inner tubes at sites that had been used for nesting in the 2010-2011 breeding season and brought small rocks into the enclosure for nesting materials. Enrichment items (ex. sprinkler, rubber ball, stuffed octopus, and partially deflated inner tubes) were placed in the enclosure at various times. Interactions with enrichment items were taken into account in the ethogram.

The Gentoo were observed prior to data collection using an ethogram from a study of captive Humboldt penguins (Merritt & King, 1987). After the initial observation period, the Humboldt ethogram was adapted for the captive Gentoo penguins by grouping individual behaviors based on the needs of this study and revising definitions as needed. For example, seven aggressive behaviors
from the Humboldt ethogram were grouped into four categories based on whether the behavior involved physical contact and if the behavior was directed toward a member of the same or different species. The final ethogram (*Appendix A*) was designed to include a broad variety of behaviors to account for changes in behavior from the norm as Gentoos entered the courtship period.

To compare the relative time invested in courtship/nesting behaviors, a combination of all-occurrences sampling and focal animal sampling was used (Martin & Bateson, 2007). One individual was observed at a time over a 30-minute period, recording all behaviors from the ethogram except for aggression.
Figure 3: Nest guarding behaviors stayed relatively constant throughout the study, but nest preparation behaviors increased in frequency throughout the courtship/nesting period.

At 15-second intervals. Because aggressive behavior occurred in discrete and conspicuous bouts, all occurrences of aggressive behaviors were recorded during the full observation period. Each penguin was observed for two 20-minute sessions and nine 30-minute sessions. Some observation sessions were disturbed by the entrance of a zoo keeper to clean the enclosure or to feed the penguins. In the majority of cases, this altered observed behavior. Since feeding time was scheduled around the same time of day, observation sessions were rotated so that each observation session was subject to the same potential disruption.

Observations were conducted from October 1st to November 19th, 2011 between 1:00 - 4:00 pm on Mondays and between 8:00 am - 12:00 pm on Saturdays. This reduced potential bias from behavioral changes at scheduled feeding times. One observer collected data on the male while the other collected data on the female at the same time so that any introduced situational bias (ex. the entrance of a zoo keeper to the enclosure) would be the same for each sex. Data collection was standardized on two occasions to ensure 85% or better inter-observer reliability.

The average frequency of each non-aggressive behavior was calculated for individuals and aggregated for all females versus all males. The average occurrence of aggressive behaviors was calculated for each day and graphed to assess any change in frequency over time. Means are presented +/- one standard deviation.

**Results:**

Two pairs formed during the courtship/nesting period (Oscar & Daphne; Olive & Felix). The other
male (Marvin) and female (Fiona) displayed courtship/nesting behaviors, but did not appear to preferentially direct such behaviors toward any particular individual. On average, males had a slightly higher percent of time invested in courtship/nesting behaviors (pairing: 0.7 +/- 5.8%; nesting: 25.5 +/- 32.5%) compared to females (pairing: 0.2 +/- 0.8%; nesting: 21.0 +/- 32.8%; Figure 2), although the time budgets were highly variable between days. Nest guarding behaviors stayed relatively constant.

Figure 4: Penguins who successfully bred in 2011 and in 2012 spent more time engaged in nesting behaviors than those that did not breed successfully.

Figure 5: Both sexes exhibited an increase in the number of aggressive bouts per observation session at the beginning of the study and a decrease in the number of aggressive bouts after the addition of a second inner tube to nest site 2.
Figure 6: There were no substantial differences between genders in the frequency of aggressive behaviors.

constant throughout the study, but nest preparation behaviors increased in frequency throughout the courtship/nesting period (Figure 3).

Successfully paired individuals spent, on average, a larger portion of their time engaging in nesting behaviors (pairing: 0.7 +/- 5.0%; nesting: 23.2 +/- 32.6%; other behaviors 12.1 +/- 19.0%) than unsuccessful individuals (pairing: 0.1 +/- 0.3%; nesting: 11.8 +/- 25.0%; other behaviors: 24.1 +/- 24.7%; Figure 4). The mean number of occurrences of aggressive behavior was higher for successful individuals (2.8 +/- 8.2 events/minute) compared to unsuccessful individuals (0.5 +/- 1.3 events/minute).

Aggression was most frequent early in the study and occurred most often near nest site 2 (Figure 1). Before the observation session on October 29th, zoo keepers introduced a second inner-tube to nest site 2. The frequency of aggressive behaviors increased at the beginning of the study, but decreased at the introduction of the second inner tube (Figure 5). Males on average exhibited 7.9 +/- 12.7 aggressive behaviors per observation session, while females averaged 8.3 +/- 12.8 aggressive behaviors per observation session (Figure 6).

Discussion:

Four of the six penguins in this study paired. The pairs formed were the same as the previous breeding season. Marvin established a nesting site, but did not appear to pair with Fiona. After the observation period, Felix and Olive produced one chick (Gretel, hatched 2/2/12). Though Oscar and Daphne were reproductively successful in the first season, they did not produce any eggs in second season. Felix and Olive established a nest at the site where Oscar and Daphne had previously been successful, suggesting that nesting site may play a significant role in reproductive success.

Males spent a slightly higher percent of total observation time invested in courtship/nesting
behaviors than females, while females spent more time resting than males. This could be a result of females’ preparation for the nesting period as a way to store energy needed for producing and laying eggs (Lescroël, et.al., 2009). Due to the high variation in daily behavior, as reflected in the large standard deviations, these results were considered inconclusive. Nest guarding appeared to take up a large percentage of the time budget of nesting pairs throughout the breeding season, whereas nest preparation increased as the birds moved closer to egg-laying. Unpaired individuals exhibited courtship and nesting behaviors such as nest preparation, nest guarding, bowing, and social wing vibrations at various sites and with various individuals. However, successfully paired penguins spent a greater portion of total observation time involved in such behaviors with a particular individual compared to the unpaired individuals.

There was no considerable difference between genders in the frequency of aggressive behaviors. However, aggression did appear to be influenced by nest site. As nest sites have been shown to be one of the most important factors of fledgling success, aggression is an expected form of nest guarding (Stokes & Boersma, 1998; Paredes & Zavalaga, 2001; Seddon & van Heezik, 1991). The two previously successful pairs were observed primarily at nest site 2, which had been a successful nesting site for Oscar and Daphne in the first season. This interest led to a high number of occurrences of aggression. Zoo keepers introduced a second inner tube to reduce aggression that might negatively influence breeding success or harm the egg. The second inner tube was introduced before the 10/29/11 observation period at nest site 2, splitting the site into nest site 2A and nest site 2B. Before 10/29/11, aggressive behaviors increased over time, and after 10/29/11 they decreased over time, regardless of gender. The addition of the second inner tube to nest site #2 was likely the cause of this change in behavior as no other environmental factors changed.

Zoo keepers determined nest site 2B to be the primary nest site because of the high level of observed aggression associated with nest guarding at that site. Oscar and Daphne attempted to establish a nest at the primary site, as seen by the high number of occurrences of aggression, but were not successful. Oscar and Daphne were primarily observed at nest site 2A while Olive and Felix were observed at
nest site 2B, the primary nest site. Olive and Felix were the only reproductively successful pair in the enclosure in the 2011-12 season. This supports previous hypotheses that nesting site is indicative of breeding success (Stokes & Boersma, 1998; Paredes & Zavala, 2001; Seddon & van Heezik, 1991). Marvin and Fiona showed no attachment to a particular nest site, but exhibited nest preparation and nest guarding behaviors to a lesser degree than the previously successful pairs at all sites at varying times.

The next step following this study would be to investigate the factors that characterize primary nesting sites, such that exhibits could be designed or modified to increase captive breeding success. Possible factors could include the effects of substrate type, proximity to other individuals, height above water level, or access to areas separate from public viewing throughout the courtship/nesting season.

Acknowledgements:

We thank the staff at the Herb and Nada Mahler Family Aviary of the Milwaukee County Zoo. Special thanks to Carol Kagy, Caty Poggenburg, and Alex Waier for all of their help and support.

References:


Appendix A: Gentoo Penguin Ethogram (Modified from Merritt & King, 1987)

<table>
<thead>
<tr>
<th>Common Behaviors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resting (R) – The focal bird is stationary on land or in the water, exhibits no interactions with objects in the enclosure or other individuals, and all movements are less than one body-length distance from the focal individual.</td>
</tr>
<tr>
<td>Self-maintenance (M) – On land, self-maintenance behaviors include preening, body-shakes, rapid wing movement, and stretching (wings and head extended). In water, self-maintenance behaviors include hip-rotating and rubbing/scratching of limbs. Excretory functions are also included.</td>
</tr>
<tr>
<td>Locomoting (L) – The focal bird swims or walks more than one body-length distance.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>General Pairing Behaviors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecstatic Display (ED) – The focal bird raises its head, opens beak, flaps wings, and emits a loud call (sounds like a donkey bray).</td>
</tr>
<tr>
<td>Mutual Ecstatic Display (MED) – The focal bird raises its head, opens beak, flaps wings, and emits a loud call (sounds like a donkey bray) within one body-length of another individual that is also exhibiting the behavior.</td>
</tr>
<tr>
<td>Allo-preening (AP) – Two individuals preening each other at the same time.</td>
</tr>
<tr>
<td>Social Wing Vibrations (SWV) – The focal bird flaps its wings against the body of another individual.</td>
</tr>
<tr>
<td>Mounting (MT) – The focal bird either lays on another individual’s back or lays on chest while another bird lays on its back.</td>
</tr>
<tr>
<td>Bowing (BW) – The focal bird lowers and shakes its head within one body-length of another individual.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Nesting Behaviors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nest Preparation (NP) – The focal bird gathers or arranges nesting materials.</td>
</tr>
<tr>
<td>Nest Sitting/Guarding (NG) – The focal bird remains stationary on the nest or within one body-length of the nest.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aggressive Behaviors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Aggressive Same Species (CAS) – The focal bird exhibits aggressive behavior towards another individual of the same species, including pecking (using closed beak to make sharp contact with another individual), beaking (birds interlock beaks and twist heads), beak vibrating (within one wing-length proximity, bird rapidly clap beaks against one another’s beaks).</td>
</tr>
<tr>
<td>Contact Aggressive Different Species (CAD) – The focal bird exhibits aggressive behavior towards another individual of a different species, including pecking (using closed beak to make sharp contact with another individual), beaking (birds interlock beaks and twist heads), beak vibrating (within one wing-length proximity, bird rapidly clap beaks against one another’s beaks).</td>
</tr>
<tr>
<td>Non-contact Aggressive Same Species (NAS) – The focal bird exhibits aggressive behavior towards another individual of the same species, including charging (running quickly towards another bird), pointing/gaping (focal bird stretches neck towards another individual within two feet with beak closed or open/making sound), and staring (focal bird looks at individual with one eye, then rotates head to use other eye, and repeats).</td>
</tr>
<tr>
<td>Non-contact Aggressive Different Species (NAD) – The focal bird exhibits aggressive behavior towards another individual of a different species, including charging (running quickly towards another bird), pointing/gaping (focal bird stretches neck towards another individual within two feet with beak closed or open/making sound), and staring (focal bird looks at individual with one eye, then rotates head to use other eye, and repeats).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional Behaviors:</th>
</tr>
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<tbody>
<tr>
<td>Other (OT) – The focal bird exhibits behavior not listed in the ethogram.</td>
</tr>
<tr>
<td>Not visible (NV) – The focal bird is not observed due to view obstruction (often occurs when swimming around the center rock in the pool).</td>
</tr>
</tbody>
</table>
Forging Ahead with the AAZK Travel Grant
Jennifer Ziegelmeyer Archibeque, Zoo Keeper
Happy Hollow Park and Zoo
San Jose, California

Professional development is an important part of my zoo keeping life and the careers of many others. It gives all of us the opportunity to learn new things, gain important skills and network with other professionals in our field. Unfortunately all that is involved in attending conferences and classes can be quite expensive. On the flip side there are some great resources out there to help with the expenses including the American Association of Zoo Keepers’ Professional Travel Grant.

Receiving a Professional Travel Grant from the American Association of Zoo Keepers in 2012 enabled me to travel to the National AAZK conference in Syracuse, New York. Without this funding for travel expenses I would not have been able to participate in the wonderful workshops that were offered or to present a poster for the first time. The workshops gave me skills and perspective that I took back to my facility and shared with co-workers. In addition to workshops, the paper sessions gave me insight into the experiences of other keepers and opened the door to many conversations. Learning from all of these interactions has enabled me to be a better keeper and care for the animals at my facility better.

Conferences and professional classes are not just about the material, but about the network of professionals you meet and the relationships that grow from the first meeting. All of us use texting and e-mail as our first line of communication, but nothing can substitute for face to face interaction. At the 2012 National AAZK Conference I made many contacts and discussed a few similar challenges with other conference attendees. These beginnings of professional relationships have already proved to be helpful and I am sure they will continue to be for years to come.

As our profession continues to forge ahead into the future we need to continue to grow with it. Scholarships such as the Travel Grant from AAZK are an integral part of the puzzle. Without this piece many animal care professionals would not have the means to seek out professional development. I encourage all keepers who are considering a trip to a conference or other professional development experience to go. The financial challenge that one may face can be answered thanks to programs like the Travel Grant. All it takes is a little time and paperwork.
Visual Enrichment at Zoo Atlanta

Nichole Bouwens, Senior Keeper
Zoo Atlanta
Atlanta, Georgia

When developing an enrichment strategy for the animals in your care, do you ever consider the value of visual enrichment? Visual enrichment can be a very easy, low cost, and highly effective way to enrich virtually any species. At Zoo Atlanta we have used countless items to visually stimulate our animals. A few of these items are listed in Figure A. In general, the animals do not have physical contact with these items for various safety reasons.

<table>
<thead>
<tr>
<th>Chalk Drawings</th>
<th>Christmas Lights</th>
<th>Remote-Controlled Cars</th>
<th>Window Clings</th>
<th>Large Removable Stickers</th>
<th>Paper Cut-Outs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posters/Photos</td>
<td>Windsocks</td>
<td>Garland/Streamers</td>
<td>Lava/Glitter Lamps</td>
<td>Fish Tanks</td>
<td>Colored Drawings</td>
</tr>
<tr>
<td>Battery-Powered Paper Lanterns</td>
<td>Projected Lights</td>
<td>Color Changing Night Lights</td>
<td>Animated Talking Dolls</td>
<td>Multi-Colored Objects</td>
<td>Television</td>
</tr>
<tr>
<td>Photo Slide Shows</td>
<td>Computers</td>
<td>Pinwheels and Spinners</td>
<td>Disco Balls</td>
<td>Laser Pointers</td>
<td>Mirrors</td>
</tr>
</tbody>
</table>

Most of the items listed in Figure A have been used as enrichment for our primate collection and many have enriched some of our birds and carnivores. We’ve found that visual enrichment works particularly well for our Asian small-clawed otters (*Aonyx cinerea*), an inquisitive, high energy group. Shining a laser pointer on the floor will usually lead the group into a game of chase. Running after the small speck of light as it goes up and down, over and under obstacles never seems to get old for this group. The laser pointer is not only a great item for getting the otters active and exercising, it also provides unending entertainment for the otter keepers!

We also change things up a bit in the otter holding area whenever possible by hanging up large paper toucan and flamingo cutouts, flower garlands, stickers, and Christmas lights. These items do not usually increase activity, but they give the otters some new and different things to look at and are rotated out frequently.

Colorful chalk drawings can be fun for both keepers and the animals. One of our cat keepers drew all over the floors and walls in the Sumatran tiger (*Panthera tigris sumatrae*) dens. When the tigers came in, they explored each drawing and even hissed at some of the sketches.
Even keepers themselves can be enriching. Over the years, I have heard stories from keepers who have dressed up in masks, big silly hats or costume jewelry, and some even dance to music for the animals.

One of the most successful items that we have used is the Liquid Light Projector. Although this particular item is no longer sold, there are many others like it still on the market. The Liquid Light Projector is especially interesting because it projects moving colored lights onto walls and it has a great range. When shown to the gorillas (Gorilla gorilla) through their mesh enclosure, they tried to pick the colors off with their nails and they licked the walls where the lights were projected. Some of the gorillas just sat and watched the lights, while others tried to groom the lights off of their cage mates. When the projected lights were shown in the room with some of our show birds, the Pied crow (Corvus albus) vocalized with soft “oohs” and “ahhs,” while the Abyssinian Ground hornbill (Bucorvus abyssinicus) perched and watched intently as the lights moved around. The lions (Panthera Leo) reacted to the lights by rubbing on the wall where the lights were projected and they pawed at the wall. One of our lion cubs sat in the center of the light beam and stared at his shadow which was surrounded by moving colored lights.

Whenever possible our keepers provide the animals with the ability to remove themselves from the location of the visual enrichment in case these items cause the animal stress. Timers are used with the lights and projectors so that the animals are not exposed to lights and movement for an extended period of time and because some of these items may overheat if left on for too long.

Visual enrichment can be stimulating for the animals, is not time consuming, and is usually mess-free. Visual enrichment is great for animals on strict diets because it can be engaging without involving food. The next time you walk into a holding area or animal exhibit, look around and see if there is anything you can do to change things up a bit. It doesn’t have to be anything big or scary, especially at first. Some animals need to be exposed to something new gradually, but with patience and creativity you can really spice things up with a picture, mirror, poster, stickers, or even colorful lights.
Grants for Leadership Development and Advances in Aviculture
AAZK Travel Grant

Avian Scientific Advisory Group

Guidelines and application process

**Purpose:** The Avian Scientific Advisory Group (ASAG) believes that recruiting and building capacity in the next generation of zoo bird managers is vital to the continuity and survival of zoo avian programs. To this end, ASAG offers small grants to bird keepers and working bird husbandry supervisors. This grant supports travel to the annual National AAZK conference for the purpose of presenting a paper on advancements in the care, welfare, or reproduction of avian species in zoos and/or field conservation projects in which the applicant has been involved in a lead role. It is envisioned that grant recipients will become more familiar with ASAG purposes and goals, begin to establish a network of colleagues and mentors, and become active participating members of AZA avian programs.

**Criteria for Funding:** Grant applicants must be a paid employee of an AZA-accredited institution, a member of either AZA or AAZK, and have worked in a position that involves the care and management of captive birds for at least two years. Persons holding the title of Curator or Assistant Curator (or their equivalent) are not eligible. Applicants will make a presentation on either original research or a case study relevant to zoo aviculture or programs at the annual AAZK conference. All work must be original and not have been presented or published elsewhere. Preferred topics are those which involve taxa of current or future priority in the appropriate TAG regional collection plans; taxa for which innovation in breeding or captive management are needed; taxa of conservation priority in the wild; significant advancements in the welfare of captive zoo birds; and significant avian conservation programs. Applicants will also be judged on their leadership potential, initiative, and problem solving skills as recommended by their direct supervisor and resume.

**Proposal Submission Deadline:** 15 April of the grant cycle year

**Process for Application and Review:**
Applicants should submit:
1) application form
2) supervisor’s letter of recommendation,
3) letter of institutional support,
4) resume,
5) title and abstract of the presentation.
The abstract must be between 100 and 250 words and indicate the outcome of the study. The application will include current job title, a summary of personal avicultural experience, rationale for how the presentation will advance zoo aviculture and the applicant’s professional career, and a travel budget. The letter of recommendation must come from the applicant’s direct supervisor or manager. A letter of support must be signed by the institution’s director and verify the zoo will provide the support necessary to ensure the applicant can attend the AAZK conference if the applicant is awarded a grant. Abstracts will be reviewed based on the criteria stated above. All materials must be submitted electronically as either a WORD document or as a pdf file. Applicants will be notified of the final award by 30 June of the grant cycle year.

**Expectations of Grant Recipients:** Grant recipients are expected to travel to the next scheduled National AAZK conference for their presentation. The presentation must be in a Power Point format and a copy of the presentation must be submitted for posting on the ASAG website. Copies of expense receipts specifically related to transportation to and from the AAZK conference and for housing and meals while attending the workshop are to be provided to the ASAG Grants Program Chair within 30 days of the end of the conference.

**Grant Funds Management:** Maximum grant awards will be $750 but may be less based on actual travel costs. Grant funds will pay the AAZK registration fees for the entire conference, three days lodging at one-half the conference hotel rate (recipients are expected to share a room or cover the additional cost of a single room), transportation, and meals which are not included with registration. Only those expenses in line with ASAG travel guidelines will be reimbursed; specific guidelines will be included at the time of the grant award. If a cash advance is needed, such checks will be made payable to the applicant’s institution. Brookfield Zoo is unable to provide cash advances without a detailed invoice provided at the time of the request – the invoice must come from the zoo (not the individual and be invoiced to ASAG). The institutional director will be responsible for reimbursing any expenses for which receipts are not provided or are not permitted by the guidelines. Expenses cannot exceed $750. Checks for reimbursement (not advances) will be made directly to the party that incurred the expenses.

**Send Requests for Application, Proposals or Address Grant Process Questions To:**
Diane Olsen
ASAG/AAZK Liaison
Assistant Curator/Behavioral Management Coordinator
Moody Gardens
dolsen@moodygardens.com

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Special Call for Papers:
Dedicated Issue on Gorillas

All papers on gorilla husbandry and conservation welcome. Deadline for submissions has been extended to April 1, 2013.

Please reference the complete set of AKF submission guidelines at aazk.org/akf-submission-guidelines/.
Visitor Attitudes Regarding 
Live Prey for Zoo Animals

One of the most difficult situations to mimic in captivity is the predator/prey relationship, and many zoo keepers spend a lot of time and energy trying to re-create the excitement of the hunt for the carnivorous species. Over the years, many facilities have experimented with using live prey as part of the diet for their predator species. This kind of complete meal can increase a carnivore’s overall welfare and health. However, many facilities have been reluctant to do live feeds as they are unsure of the attitude of our visitors towards using live prey in exhibits.

(left) A golden-headed lion tamarin enjoying some live crickets. 
Photo courtesy of Becky Richendollar.

(right) Meerkat foraging for mealworms. Photo courtesy of Linda Oakleaf
This article examines visitor attitudes about using live prey. A survey was conducted over two days in July of 1995 at the Edinburgh Zoo. Two hundred people responded to the survey, and the interviewer made note of the participants’ sex and approximate age. Each respondent was asked the following questions:

1. Do you agree with live insects being fed to lizards in (on-exhibit) or out of public view (off-exhibit)?
2. Would you agree to live fish being fed to penguins in (on-exhibit) or out of public view (off-exhibit)?
3. Would you agree to a live rabbit being fed to a cheetah in (on-exhibit) or out of public view (off-exhibit)?
4. Have you ever owned or do you now own a pet?

Upon analysis, researchers found that the majority of zoo visitors were in favor of live prey being fed to carnivores (see table 1). Multiple respondents said they supported the practice of feeding live prey because “it is natural”. Of those that said they were not in favor of feeding live prey, they felt that it would be possibly upsetting to them or their children. In addition, more females than males objected to feeding live prey.

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>On Exhibit</th>
<th>Off Exhibit</th>
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<tr>
<td>live insects to lizards</td>
<td>96%</td>
<td>100%</td>
</tr>
<tr>
<td>live fish to penguins</td>
<td>72%</td>
<td>84.5%</td>
</tr>
<tr>
<td>live rabbit to cheetah</td>
<td>32%</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

The authors in this study point out that it needs to be replicated in other countries, because at the time of the study there were animal welfare laws in the UK that prohibited the feeding of live prey. In addition, this study took place 18 years ago and attitudes and opinions about captive animal welfare have evolved since that time.

**Practical Applications for Zoo Keepers:**

If your facility allows the use of live prey feedings for your animals, make sure that you take the time to connect with visitors and educate them about why it is important for the welfare of the animals at the zoo to engage in natural behaviors.

With the support of management, conduct a similar survey among visitors at your zoo to see how visitor attitudes towards the use of live prey are similar or different to this study. You could possibly use the results to encourage the beginning of a live prey feeding program if it is not already being done at your zoo.

Continue to strive for creative ways to re-create the predator/prey relationship in your enrichment for your carnivores.

**To View the Complete Article:**

Developing a New World Primate Operant Conditioning Program

This article is a wonderful example of how to effectively build a training program for any species of animals. Specifically, the article discusses the formation of an operant conditioning program for the New World Primates housed at the Bronx Zoo. However, the information about overcoming challenges and logistics could be transferred to any species.

During this article, the Bronx Zoo housed 86 callitrichids and small-bodied cebids housed in 26 social groups. Because of the large number of New World Primates in the collection, the keepers decided to begin a comprehensive operant conditioning program for the animals. The authors point out that, perhaps due to their small stature, relatively few operant conditioning programs have been created for the callitrichids (tamarins, marmosets, and Goeldi’s monkeys).

As with any training program, the goal of this project was to mitigate the stress of regular husbandry behaviors on these primates. Because of their small size, historically most callitrichids and small-bodied cebids have been netted for medical exams. The introduction of crate training would obviously be a benefit to these species at any institution.

The team began by setting up the logistics of the training program. They identified the most important behaviors and set up criteria for what those completed behaviors would look like. In this paper, the behaviors chosen were hand feed, syringe feed, target, scale, crate, station, and transponder read. Each of the keepers in the section became the primary trainers for two or three of the primate groups, passing on the behaviors to secondary keepers only once the behaviors were complete. The keepers kept careful records and held bi-monthly meetings so that every trainer was knowledgeable about how the animals were progressing.

Throughout the creation of the program, the trainers learned many things. One of the most important was that often times each species, and even each individual would learn at a different pace. For example, the tamarin species were more quick to approach the trainer and learn new behaviors than the marmosets or cebids. However, the tamarins also lost interest in training sessions more quickly than marmosets or cebids. This taught the keepers that multiple, short sessions throughout the day would be more beneficial to the tamarin species.

In addition, marmosets took longer than tamarins or cebids to accept interactions with the trainers. However, once that bond was formed, the marmosets learned new behaviors quickly, and have since moved on to more advanced behaviors.

This article tracks the progress of the operant conditioning program for New World Primates at the Bronx Zoo during its first year. After that short amount of time, multiple behaviors have been learned by the animals and the keepers report that the animals no longer alarm call and run away when keepers enter the enclosure. This results in a more positive experience for the animals, the keepers, and the visiting public who are able to witness the training sessions.
Practical Applications for Zoo Keepers:

Starting a new operant conditioning program can often seem daunting. This example of keepers starting a program for 86 primates in 26 social groups is encouraging for anyone starting out.

Don’t be afraid to change your mind about rules you set in place. In the beginning, these trainers used two longer sessions a day but quickly found out that some animals benefit from fewer short sessions so they changed the protocol based on the animals’ needs and abilities.

Always keep in good contact with your team members, especially when beginning a large project such as this. Bi-monthly meetings and written records are so important when multiple trainers are keeping track of an animal’s training progress.

To View the Complete Article:


ATTENTION ALL PHOTOGRAPHERS!

AKF Needs Your Photos

Attention all photographers, the AKF needs your photos as potential cover photos and special feature photos throughout the issue. All photos need to be high resolution, 2625 x 3375 pixels or greater, 300 dpi or greater in resolution, 1MB or greater. All photographers will need to submit a photo release form that can be found at aazk.org/animal-keepers-forum/aazk-photo-model-release-form/. Photos that clearly depict facility logos and behind-the-scenes shots will need permission of the facility to be used.

Subjects for the photos should revolve around animal husbandry, conservation, education/interpretation, professional development, significant achievements in the industry (births, exhibits, staff, etc.), and can also include some of the more humorous or unique situations that we all come across each day in our occupations. Captions for each photo should also be submitted.
COMING in APRIL / MAY!

The April/May issue of the *Animal Keepers’ Forum* will be a special double issue dedicated to Bird and Hoofstock Mixed-Species Exhibits. Your April issue may arrive a little later than usual because of the special two-month expanded edition that we hope you will all enjoy. *The Editors.*
AAZK Membership Application  (Please Print)  □ Check here if renewal

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Country________________________

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<tr>
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<td>□ $50 Professional  <em>Full-time Keeper</em></td>
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<td>□ $40 Affiliate Other staff &amp; volunteers</td>
<td>□ $50 Affiliate Other staff &amp; volunteers</td>
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<td>□ $150 Commercial Member i.e. animal-related food &amp; supplies</td>
<td>□ $60 International Members All members outside U.S. &amp; Canada regardless of category</td>
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<td>□ $45 Library Only Available ONLY to public &amp; university libraries (in U.S.)</td>
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Zoo Affiliation (if any) ____________________________________________

Zoo Address _______________________________________________________

Title ____________________________________________________________

Payment must be in U.S. FUNDS ONLY

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Name on Card ____________________________________________________ Expiration Date ___________

Signature _______________________________________________________

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