Felid TAG Times

A quarterly publication of the Felid Taxon Advisory Group of the Association of Zoos & Aquariums

In This Issue

Photo: Ashley Bristowe

If the claws didn't retract, cats would be like Vecro.
- Bruce Fogle

May 2011

Calendar

May 1, 2011
- Ocelot Conservation Festival, Brownsville, Texas

May 2-4, 2011
- Felid Husbandry Course, Omaha's Henry Doorly Zoo, Nebraska

May 3-4, 2011
- Felid TAG SSP/PMP meetings, Omaha's Henry Doorly Zoo, Nebraska

May 5-7, 2011
- Felid TAG Annual Conference, Omaha's Henry Doorly Zoo, Nebraska

June 12, 2011
- Celebration of the Life and Career of JoGayle Howard, Smithsonian Conservation Biology Institute, Front Royal, VA

July 26-29 2011
- Snow Leopard & Tiger SSP Meetings, Potter Park Zoo, Lansing, Michigan

Felid TAG News

Annual Conference

Hopefully, you've all registered for the annual conference taking place at Omaha's Henry Doorly Zoo in early May. If not, get on it! Go to the Felid TAG website at www.felidtag.org for details, including registration forms and meeting schedule.

Remember Your Silent Auction Items

Don't forget to bring items to include in the silent auction, which helps raise money and awareness for conservation efforts of the Felid TAG. Remember to bring your checkbook to the auction, too! Contact Kimberly Davidson at kdavidson@hoglezoo.org or 801-584-1703 with questions or comments.

Tiger SSP Coordinator Needed

The Tiger SSP Coordinator position has become vacant. This position is responsible for oversight of all three Tiger SSP programs but concentrates primarily on the Amur Tiger SSP program with Gerry Brady serving as SSP Coordinator for Sumatran Tiger and Mike Dulaney serving as SSP Coordinator for Malayan Tiger. This SSP Coordinator position requires a significant amount of time and resource commitment. If you are interested in applying for this position please complete the SSP Coordinator application available at the AZA website under:
www.aza.org/uploadedFiles/Animal_Care_and_Management/Animal_Programs/Conservation_Programs_Database/PLH_SSPs.pdf

Application materials should be submitted to Norah Fletchall at nfletchall@indyzoo.com by April 30, 2011.

Felid TAG News (cont.)

Clouded Leopards Born at Nashville Zoo

Nashville Zoo recently welcomed two litters of clouded leopards born over a one week period in March. On Saturday, March 19, Jing Jai, one of the Zoo's two breeding female clouded leopards, gave birth to three cubs. One cub died shortly after birth. On Tuesday, March 22, Lom Choy, the other breeding female, gave birth to a single male cub. Weighing about a half pound each, the cubs are healthy and being hand-raised together by zoo keepers.

Photo: Christian Sperka

Just over five years old, this is Jing Jai's third litter. Both she and her mate Arun came from the Khao Kheow Open Zoo in Chonburi, Thailand in 2008 as part of the Consortium's effort to save the species from extinction. This is the first birth for 2 -year old Lom Choy and her mate Luk. Lom Choy was imported from Thailand in spring 2010, and introduced to Luk, one of three cubs born to Jing Jai and Arun at Nashville Zoo in 2009.

The three new cubs are feeding on a special feline milk diet and will add about a half of a pound in weight each week for the next few months. At about six months of age, each will be paired up with potential mates.

Photo: Christian Sperka

Snow Leopard Cub Born at Tautphaus Park Zoo

Tautphaus Park Zoo is thrilled to announce the birth of a snow leopard cub. Sarani (Sanskrit for Path) was born to mom Sundarii and dad Panja on October 4th, 2011. Sundarii has proven to be an excellent mother and Sarani is doing very well. She has had a great deal of social interaction from the keepers and VIP visitors.

- Submitted by Beth Rich

Photo: Kitti Hesselbacher

Black-footed Cats Born at Audubon Nature Institute

Congratulations to the Audubon Nature Institute on the births of two male black-footed cats on February 13, 2011. Born to a surrogate mother, the kittens are the first of their kind to be born from a frozen embryo via in-vitro fertilization. Embryos were created using frozen semen from a male at Omaha's Henry Doorly Zoo and eggs from a female at Audubon back in 2005. Frozen for nearly six years, the embryos were thawed and transferred to Bijou, the surrogate mother, on December 7, 2010.

Jaguar Conservation Fund Grants Available

Woodland Park Zoo awards $10,000 annually to jaguar conservation projects, thanks to a generous bequest from a friend of the zoo. Projects must meet the following guidelines:

- Relates directly to habitat protection and/or conservation of jaguars.
- Includes a strong educational component.
- Involves participation of, and/or benefits for local communities.
- Collaborates with other partners, including other conservation organizations.

Applications for this year will be accepted through Monday, June 6, 2011 with awards being announced in August. Please use the links below (as PDFs) for the application and timeline/process document, and send your completed materials to bobbi.miller@zoo.org.
Instructions: www.zoo.org/document.doc?id=300
Application form: www.zoo.org/document.doc?id=301

In Memory of JoGayle Howard, 1951 - 2011

Colleagues,

With great sadness, we write to tell you that our esteemed colleague, JoGayle Howard, passed away early this morning (March 5). She was a warrior in her battle against cancer surprising her doctors with the tenacity and strong will that are familiar to us, her Zoo family.

JoGayle arrived at the Smithsonian's National Zoo in 1980 as a research intern, later earning her Ph.D. from the University of Maryland. Her intense focus on animal reproduction and her success at pioneering new techniques earned her the title of "Sperm Queen," a nickname she relished. In 1993, the National Institutes of Health awarded her a prestigious Fellowship Special Emphasis Research Career Award (SERCA), which helped support her research. It was but one of many notable awards she received, along with international acclaim for her innovative research.

During her three-decade career, this remarkable scientist and woman achieved countless breakthroughs in the field of reproductive physiology, trained hundreds of students and foreign colleagues, and played an instrumental role in saving species. In collaboration with many of you and others around the country, she rescued the black footed ferret from the brink of extinction. Clouded leopards in Thailand and in zoos around the world have JoGayle to thank for their survival. And yes, she was a member of the NZP team to unravel the giant panda reproduction puzzle for us and our Chinese colleagues.

JoGayle has been surrounded and cared for by numerous friends and colleagues for the past several months. She will be buried in Texas, her family home, and later this spring there will be a celebratory memorial service, details to follow.

For individuals interested in honoring her memory, donations may be made to the
SCBI/JoGayle Howard Cat Conservation Fund c/o Strategic Development Office Smithsonian Conservation Biology Institute National Zoological Park 1500 Remount Road Front Royal, VA 22630

Sincerely,
Dave Wildt & Steve Monfort

> "Giant pandas are easy compared to clouded leopards." - JoGayle Howard

Nature's Matchmaker

JoGayle Howard is the subject of a current Smithsonian Channel program, "Nature's Matchmaker". Upcoming airings are on May 2 at 4:00pm and May 3 at 5:00am. View a sneak peek at www.smithsonianchannel.com.

"The business of the birds and the bees gets more complicated when it comes to the endangered species of the world. Female giant pandas are only fertile once a year, for 48 hours. Male Clouded Leopards often try to kill their mates. But when nature fails, science steps in. Join us as we follow Dr. JoGayle Howard, matchmaker, surgeon and reproductive sleuth on her mission to stave off extinction one litter at a time."

Ghost Cat: Saving the Clouded Leopard

JoGayle was also featured in the Smithsonian's Women in Science series. Read the illustrated story (comic strip) and watch the full episode at:
www.smithsonianchannel.com/site/sn/women-in-science.do.

"Deep in the jungles of Southeast Asia is an elusive and endangered member of the panther family that is threatened by poachers, development, and natural habitat changes. The fate of this exotic, python-patterned, clouded leopard may rest in the hands of a small cadre of scientists, activists, and veterinarians determined to help it stave off extinction. Three daring women comb the forests of Thailand for evidence of the elusive "ghost cat." They infiltrate a notorious smuggler's paradise and black market of exotic animals, determined to save the stunning creature. "

Celebrate JoGayle Howard's Life and Career

A celebration of the life and career of JoGayle Howard will take place at Smithsonian Conservation Biology Institute in Front Royal, VA on June 12 from 3 - 6 pm.

Please RSVP by June 1, if you plan to come. View the invitation at: http://new.evite.com/services/links/VTTOMSMD5K. Click on "YES". It will bring up a box where you can enter comments, and also asks "replying as loxodonta6" and then "Not you?". Please click on "Not you?" and enter your name and email address. Also indicate how many in your party will attend.

Contact Janine L. Brown with questions at 540-635-6586.

Endangered Brazilian Ocelot Born at Connecticut's Beardsley Zoo through Novel Artificial Insemination Method

First Successful Oviductal AI in Any Wild Cat Species

The Cincinnati Zoo & Botanical Garden's Lindner Center for Conservation & Research of Endangered Wildlife (CREW) and Connecticut's Beardsley Zoo are excited to announce the birth of the world's first endangered cat produced by Oviductal Artificial Insemination (AI)! Connecticut's Beardsley Zoo's veterinarian and a handful of other Zoo animal care specialists conducted their first physical examination of the Brazilian ocelot kitten today, six weeks after its January 22 birth, and determined it's a girl, weighing in at three pounds. (Video is available upon request and can be viewed here - http://www.youtube.com/watch?v=ZCbdf_4TTMI.)

This is the first time that the oviductal AI technique has been used to produce offspring in any exotic cat species. With traditional AI methods, the semen is deposited in the uterus, whereas in oviductal AI, the semen is injected directly into the oviducts. As a result, scientists are able to produce pregnancies using fewer spermatozoa or semen of poorer quality, which is always a potential concern in small wild cats.

This AI kitten is the second born to the mother, Kuma, who previously gave birth in 2008 to a healthy kitten conceived using the traditional AI method. Kuma is the first ocelot to have multiple pregnancies and kittens produced by AI.

"This recent AI birth in Kuma is significant on several different levels. Obviously, Kuma having another kitten is enriching for her and this birth also contributes to the genetic diversity of the Brazilian ocelot population," said Bill Swanson, director of Animal Research at the Cincinnati Zoo's CREW. "But, one of the most exciting aspects of being able to produce a pregnancy using this new AI method is that it may be a game-changer in improving the success of AI in ocelots and other endangered cat species throughout the world."

"Because the technology was so new, we didn't know if using AI to produce Kuma's first kitten would impede her ability to conceive again and we've now shown that the science can be replicated," stated Gregg Dancho, director, Connecticut's Beardsley Zoo. "Given how rare these births are, it's incredible that two have occurred here at Connecticut's only zoo. Animal conservation is an important part of our mission and we are thrilled to have the opportunity to work with one of the world's leading experts on cat reproduction, Dr. Bill Swanson of the Cincinnati Zoo & Botanical Garden."

Kuma, age 6, and Ozzie, the father, age 11, underwent artificial reproductive procedures at Connecticut's Beardsley Zoo on November 2, 2010. Ozzie underwent electroejaculation for semen collection and Kuma underwent artificial insemination. Ozzie was transported from Salisbury Zoo in Maryland to Connecticut's Beardsley Zoo for the procedure and was returned shortly thereafter. Both the kitten and Kuma have been in seclusion bonding for the last several weeks and are expected to remain in seclusion for another month. Mother and kitten are expected to be introduced to the public sometime in April.

Kuma's first kitten, Milagre, was born on Oct. 31, 2008. Because Kuma had been injured as a kitten and lost one of her rear legs as a consequence, she is incapable of natural breeding with a male and could only become pregnant by AI. Because of Ozzie's age, diminished sperm count presented a challenge to his ability to reproduce.

As one of only 30 Brazilian ocelots maintained in North American zoos, Kuma is very important genetically to the captive population. The Ocelot Species Survival Plan (SSP), which manages the ocelot population in North American zoos, requested that CREW scientists attempt the AI procedures with Kuma to allow her to pass her valuable genes onto the next generation. Her ability to become pregnant after AI on two separate occasions is a testament to the scientific knowledge gained from nearly 20 years of reproductive research with domestic cats and ocelots.

- Submitted by Cincinnati Zoo & Botanical Garden

Jaguar Blood & Tissue Samples Needed for the Jaguar Landscape Genetics Project: Building a Sequence Reference Library for In-Situ Conservation

Anthony J. Giordano, M.Sc., Doctoral Research Fellow, is requesting jaguar blood and tissue samples for the Jaguar Landscape Genetics Project: Building a Sequence Reference Library for In-Situ Conservation.

Project Abstract:
As jaguar (*Panthera onca*) conservation efforts confront the challenges throughout the species' range, it has become clear that cooperation among biological professionals from all arenas will ultimately be integral to their success. Moreover, seamless cooperation whenever possible has the potential to expedite these successes, particularly information-sharing in real time, or the development of a standardized database made accessible to all. As fragmentation and habitat conversion continue to advance in the tropics, the need to incorporate ecological genetic components into management plans for key species, including jaguars, becomes more critical. However, while advances in our understanding of jaguar ecology have mounted in recent years and promise to continue, the independence with which many labs, departments, and institutions conduct their efforts can make the standardization of data challenging. Here we propose to develop such a standardized reference database for jaguars. At this time, we have two primary short-term goals: (1) to develop region-specific nucleotide sequence libraries for jaguar mitochondrial DNA (Mcb, cytb, ATP-6), sex chromosomal DNA, and numerous microsatellite markers which have proven useful for many felid species (TBD based on differential polymorphism) in order to begin high-resolution landscape genetic analysis of jaguars in the southern Cone of South America; (2) to test, modify, and perfect a technique which will allow biologists to noninvasively collect information on jaguar demographics, including relative age or age classification. Longer-term, our goals are to develop (1) jaguar-specific primers, potentially with regional specificity, for high-resolution population and landscape genetic analysis, and (2) to create a map of jaguar conservation genetics across South America, particularly with respect to critical dispersal and/or population connectivity corridors. In addition, the construction of such a database will undoubtedly prove highly practical to both ongoing and future jaguar genetic research, as well as general conservation efforts, wherever they may occur.

Integrating Zoo Assistance & Cooperation:
In order to proceed in a timely and cost-effective manner, the cooperation of AZA institutions, perhaps as facilitated by the Felid TAG, the Jaguar SSP, and all willing and able curators, zookeepers, and zoo veterinarians, would not only be most appreciated, but will be crucial. We are specifically looking to obtain samples of blood (preferred) and/or tissue from jaguars, whatever can be spared, from all possible zoological institutions and other captive facilities. Refrigerated samples from prior check-ups, routine examinations, or medical procedures would be most appreciated should they be available. Otherwise, we ask that all personnel potentially involved in future procedures of this kind to please be aware of this request and help us secure these samples.

Samples should be packed in ice with the following information as pertaining to the individual: (1) sex, (2) birthdate, (3) geographic ancestry if known/ suspected, and (4) date sample was taken, and shipped to:
Anthony J. Giordano
c/o Dr. Melanie Culver
Assistant Professor, Wildlife Conservation and Management Program
School of Natural Resources and the Environment
University of Arizona
213 Biosciences East
Tucson, AZ 85721

To build an effective reference library and calibrate sufficiently robust models, it is imperative that we obtain representative samples from a diversity of ages (including kittens/cubs getting their first work-up) and geographically-disparate ancestral lineages (if and when known). This means the more participation, the better! Thanks again for supporting our jaguar conservation efforts!

Please direct all questions regarding this project to either myself at: species1@hotmail.com, or to Dr. Melanie Culver at: culver@ag.arizona.edu. In addition, please let us know if any individual and/or institutional expenses incurred during the collection, storage, and/or shipping of these samples need to be reimbursed by providing receipts or copies.

- Submitted by Anthony J. Giordano

Felid TAG News (cont.)

Pittsburgh Zoo's Hospitalized Tiger Cub Rejoins Family

On September 12 at the Pittsburgh Zoo & PPG Aquarium, three Amur tiger cubs (1.2) were born to "Toma," an experienced mother who had borne two previous litters. Throughout the first month, the cubs grew and acted normally and Toma took excellent care of them, all of which we monitored through low-light cameras. However, in the beginning of the second month staff noticed that one cub was displaying unusual behavior, and Toma's behavior toward it changed as well. We pulled it for evaluation and found a female cub which appeared underweight and weak. Initially, she was treated with antibiotics and pain medication and returned to her mother the same day. But when her condition worsened the following day, she was taken to the Zoo's animal hospital for intensive care. At this point she couldn't crawl or focus on objects in her visual field. With the assistance of a voluntary outside veterinary imaging clinic, our veterinarians determined that she had an internal abscess at the base of her skull which was affecting her motor and visual skills.

Fortunately she had a good appetite, although in the beginning, in addition to being tube-fed, staff fed her small amounts of meat by prying open her mouth, inserting a meat ball, then closing her mouth so that she would consume it. Gradually she began to respond to antibiotics, anti-inflammatories, and steroids. Although she became accustomed to being around humans, vets and keepers were careful not to overexpose her to human visitors. As she became more mobile they purposely "played rough" with her to simulate what her mother, brother, and sister would do.

After six weeks of intensive and devoted care, we determined that she was well enough to be reintroduced to her family. We started the reintroductions with her siblings. After a brief introductory period during which her siblings huddled in the back of their den, we opened the door to her crate. She immediately bounded out and jumped on her brother, who seemed frightened, and her sister, who seemed to be trying to ignore her. We kept the first introduction brief, but before we took her back to the hospital that night we let Toma see her through the cage mesh. On seeing her cub, she chuffed. By the second day with her brother and sister, they realized that she might not be going away, and her brother began playing with her. This continued for a few more days, always ending with her face to face with her mother through the mesh, all of which appeared positive.

Finally the day came to introduce her to her mother. While staff watched nervously on the monitors, the entire family was reunited. The cub exuberantly jumped on Toma's face.

However after she did that a second time, Toma put a paw on her and pinned her to the ground, as if to say: "It's time to learn tiger manners again, missy." With Zoo staff holding their breath, she released her and welcomed her cub back as only a mother tiger could.

Today, the 7-month old cub is completely healthy and the most rambunctious member of the litter. She enjoys interacting with visitors at the viewing window and continues to play with her mother and siblings out in their habitat.

- Submitted by Ken Kaemmerer

Tanzania Carnivore Program

A hotspot for African carnivores, Tanzania has key populations of threatened species, including wild dogs, cheetahs, and lions. Despite this global significance, Tanzania lacks information on the status and distribution of its carnivore species.

The Tanzania Carnivore Program gathers information on carnivores across the country through field surveys and a network of volunteer contributors that send in locations of carnivore sightings. Photographs are used to identify individual cheetahs and wild dogs and allow us to monitor individual animals across the country. All information goes into a national GIS database, which is used to assess the impact of human activity on carnivore distribution.

The Program has worked with wildlife authorities of Tanzania to develop a Carnivore Conservation Action Plan, which was sent to the Wildlife Division for endorsement on March 7, 2010. This provides a framework for action across the country, prioritising species and identifying data-deficient areas. Such frameworks are key to guiding conservation activities in the future, and for leveraging new initiatives. Over the coming years, the Program will oversee the implementation of this plan, ensuring that conservation and research priorities are met.

Overseen by the Tanzania Wildlife Research Institute, the program is supported by the Zoological Society of London, St. Louis Zoo, and Wildlife Conservation Society.

Learn more at www.tanzaniacarnivores.org.

- Submitted by Steve Bircher

Other Felid News

Latest News Regarding Macho B Capture in Arizona
A federal judge ruled that the Arizona Game and Fish Department had a valid endangered species permit when the only known jaguar in the United States, called Macho B, was captured. The 15-year old cat was trapped south of Tucson on Feb. 18, 2009, fitted with a radio collar, and then released. He was later recaptured and euthanized due to failing health. Game and Fish initially called it an "inadvertent capture".

In June 2010, a Fish and Wildlife Service official said the criminal investigation of the Macho B capture was inconclusive regarding whether it was covered by a valid permit or not, which allows for intentional or accidental capture. The service then granted Game and Fish a new permit that was more detailed and authorized future jaguar captures under certain conditions.

The federal ruling is part of the case against Janay Brun, who has been charged with violating the Endangered Species Act for her alleged involvement in Macho B's capture. Brun admitted putting the scat at the site where Macho B was captured, saying she did so on orders from her supervisor, biologist and jaguar expert Emil McCain.

In May, McCain pleaded guilty in U.S. District Court for unlawfully taking a jaguar in violation of the Endangered Species Act, by admitting he directed jaguar scat to be placed at three snare sites in an attempt to capture the jaguar. He was sentenced to five years of probation and was barred from being involved in any project involving large wild cats.

- Submitted by Tammy Sunquist

Smithsonian's Camera Trap Photos Web Site
The Smithsonian has a new web site dedicated to camera trap photography produced by field studies of wildlife all around the world. Search for your favorite species among the more than 200,000 photos displayed at: http://siwild.si.edu/index.cfm.

Leopard cat; Photo: Smithsonian WILD

International Tiger Advisory Group
A newly formed International Tiger Advisory Group (iTAG) will be led by international tiger scientists and conservationists to provide guidance and objective oversight for tiger conservation practices and policies throughout the tiger's 13 country range. Panthera's Dr. George Schaller was selected as the iTAG Chairman, and Dr. Alan Rabinowitz and Dr. Joe Smith will serve as the group's International Coordinators. India will be iTAG's first priority. Dr. Rabinowitz stated that "India is the last bastion where we have the best minds, best landscapes, best habitats – it is the best place to demonstrate a turnaround of the tiger's sinking fortunes."

Big Cat Country Complex Groundbreaking
The Turtle Back Zoo (New Jersey) broke ground this April for a new, $3 million Big Cat Country Complex set to open in September. The exhibit will feature cougars and jaguars in mesh netting and glass enclosures on display.

Great Cats Exhibit Re-opens at Blank Park Zoo
As of April, Iowa's Blank Park Zoo has officially re-opened the Tom and Jo Ghrist Great Cats Exhibit. The exhibit kiosks have been re-themed to take the look of a safari outpost. Examples of the additions include a photo opportunity where children can climb into a converted Toyota Land Cruiser to have their picture taken with a tiger. Rock-like steps have also been added near the exhibit view window to allow children to have an up-close face to face view with the Amur Tiger and the African Lion.

Eastern Cougar Declared Extinct
In early March, the U.S. Fish and Wildlife Service officially declared the eastern cougar extinct. It was placed on the endangered species list in 1973 and the department's announcement means that it could now be removed from the list. However, the decision does not affect the status of the Florida panther, which is a cougar subspecies located in the southeastern United States.

Researchers believe the subspecies has more than likely been extinct since the 1930s. Mark McCollough, an endangered species biologist who led the agency's study, said the last wild eastern cougar was believed to have been killed in Maine in 1938. However, some people are still convinced that the cats continue to exist in their historic range east of the Mississippi. The federal agency looked into confirmed cat sightings, but these animals had either escaped or were released from captivity, or migrated from the west.

The wildlife service considered the eastern cougar a distinct subspecies, even though some biologists now contend that it is genetically the same as its western counterpart. In addition, they said that they have no authority under the Endangered Species Act to reintroduce them to the eastern region.

- Submitted by Tammy Sunquist

Why the leopard got its spots: relating pattern development to ecology in felids
William L. Allen, Innes C. Cuthill, Nicholas E. Scott-Samuel, and Roland Baddeley
Proc. R. Soc. B May 7, 2011 278:1373-1380

Abstract: "A complete explanation of the diversity of animal colour patterns requires an understanding of both the developmental mechanisms generating them and their adaptive value. However, only two previous studies, which involved computer-generated evolving prey, have attempted to make this link. This study examines variation in the camouflage patterns displayed on the flanks of many felids. After controlling for the effects of shared ancestry using a fully resolved molecular phylogeny, this study shows how phenotypes from plausible felid coat pattern generation mechanisms relate to ecology. We found that likelihood of patterning and pattern attributes, such as complexity and irregularity, were related to felids' habitats, arboreality and nocturnality. Our analysis also indicates that disruptive selection is a likely explanation for the prevalence of melanistic forms in Felidae. Furthermore, we show that there is little phylogenetic signal in the visual appearance of felid patterning, indicating that camouflage adapts to ecology over relatively short time scales. Our method could be applied to any taxon with colour patterns that can reasonably be matched to reaction–diffusion and similar models, where the kinetics of the reaction between two or more initially randomly dispersed morphogens determines the outcome of pattern development. "

Photo: Vearl Brown

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Submissions

Felid TAG Times is edited by Shasta Bray, Felid TAG Education Co-Liaison. Please send comments, suggestions, and submissions to Shasta.bray@cincinnatizoo.org. Submission deadline for the August 2011 issue is July 1.