

# FELID TAG TIMES

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

## IN THIS ISSUE

Felid TAG News	1
- Conference Registration	1
- Lion Cons. Campaign	1
- AI in Amur Tigers	2
- Mahlia, Denver's Fishing Cat	2
- Snow Leop. Eyelid Colomba	3-4
- Bahati, Serval Management	4
- San Fran Sumatran Tiger Cub	5
Steering Committee Members	5
Conservation Program Coordinators	5



Credit: Kathy Crabbe Art

## Felid TAG News

### Felid TAG Conference Registration

If you haven't already made plans to attend the Felid TAG conference in Jacksonville on June 27 to 29, get on it! Registration fees increase after May 15. Registration information is now available on the website at [www.felidtag.org](http://www.felidtag.org). The Seventh Annual Felid TAG Husbandry Course will be held prior to the conference on June 23 to 26. For specific questions, please email [felidtag2013@jacksonvillezoo.org](mailto:felidtag2013@jacksonvillezoo.org).

2012 conference attendees enjoy a meal at Utah's Hogle Zoo. (Photo: Kimberly Davidson)



### Lion SSP Conservation Campaign

The AZA Lion Species Survival Plan (SSP) is committed to the management and welfare of lions in captivity, but we also believe we have an obligation to lions in the wild. In 2013, the Lion SSP, with support from the Houston Zoo and Denver Zoo, partnered to launch the Lion SSP Conservation Campaign. Our goal is to raise awareness among the zoo community about the threats lions face in the wild and offer a simple but impactful way to help. This program will not only act as an outlet for zoos and aquariums to support lion focused field conservation efforts, but can also be used as a site to message our collective audiences about the threats facing lions in the wild.



For more information on how to support this effort, please contact Hollie Colahan at [hcolahan@denverzoo.org](mailto:hcolahan@denverzoo.org) or Peter Riger at [priger@houstonzoo.org](mailto:priger@houstonzoo.org). Go to [www.houstonzoo.org/lionssp](http://www.houstonzoo.org/lionssp).

Photo by Henri Bergius

May 2013

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### Black-footed Cat SSP Vacancy

The Felid TAG is currently seeking a Program Manager for the Black-footed cat SSP. If interested, contact Don Goff at [dgoff@beardsleyzoo.org](mailto:dgoff@beardsleyzoo.org).

### Successful Artificial Insemination in Amur Tigers at the Sedgwick County Zoo

The first Amur tiger conceived using a new laparoscopic oviductal artificial insemination (LO-AI) technique was born at the Sedgwick County Zoo on February 24<sup>th</sup>, 2013. This birth also was the first Amur tiger to be born at the Sedgwick County Zoo and the first cub for the mother, Talali. The cub appeared vigorous at birth and was being cared for by the dam, but passed away 36 hours after birth, likely due in part to the mother's inexperience. Records show that single cub litters have lower survival rates than average-sized tiger litters of two to four cubs - approximately 40 percent of single cub litters do not survive to 30 days.

The Tiger SSP recommended breeding the tigers at the Sedgwick County Zoo, and suggested that the Zoo collaborate on the artificial insemination project. Scientists from the Cincinnati Zoo's Center for Conservation and Research of Endangered Wildlife (CREW), working with the Sedgwick County Zoo's vet and animal care staff, performed the minimally invasive laparoscopic oviductal insemination procedure on both of the Zoo's female Amur tigers, Talali and Zeya. The females were treated with hormones to stimulate ovarian follicle growth and multiple ovulations prior to AI. Talali was inseminated in both oviducts with spermatozoa collected from the Zoo's resident male Ivan, but because of very low sperm numbers, the sample was combined with frozen semen from another male, Kavacha, at the Blank Park Zoo in Des Moines, IA. The second female, Zeya, was inseminated with frozen semen only. Fecal progesterone analysis conducted at CREW 60 days after AI suggested that Talali was pregnant, and she subsequently gave birth to a single cub at 103 days after AI. Paternity testing of the cub by geneticists at the University of California - Davis will determine if the fresh or frozen semen was responsible for its conception. Pending the paternity results, this cub may represent the first tiger ever produced using frozen semen. This tiger AI study was funded, in part, by grants from the Riverbanks Zoo & Garden and the Minnesota Zoological Garden.



Photo: Sedgwick County Zoo

Historically, AI success in tigers has been very low, with only three known pregnancies in the past 20 years (from more than 60 AI procedures) with the last reported AI birth occurring in 2003. The new oviductal AI method, developed by CREW scientists in domestic cats, has been used to produce multiple pregnancies in ocelots and Pallas' cats, and now in tigers. By depositing the semen directly into the oviduct, this AI approach can improve pregnancy success while allowing insemination using fewer sperm or sperm compromised by freezing. This AI technique, especially using frozen semen, holds promise for improving propagation of captive tigers and allowing genetic exchange between zoos or countries without requiring the transport of living tigers. This latter application may be of particular importance to ongoing efforts to establish a Global Species Management Plan (GMSP) for Amur tigers, creating gene flow among regional tiger populations in North America, Europe, Russia and Japan. Follow-up studies to further improve the efficiency of tiger AI are currently being planned, and, pending endorsement by the Tiger SSP, the participation of additional tiger-holding facilities will be solicited for this project.

### Meet Maliha, Denver Zoo's Star Fishing Cat



Photo: Laura Morrell

When Denver Zoo opened its new 10-acre Toyota Elephant Passage exhibit last June, the hype was all about elephants. However, it was the exhibit's 20-pound feline resident who proved to be one of the true stars, inspiring a new passion for conservation and education at Denver Zoo.

A fishing cat named Maliha moved to Denver for the exhibit's opening. She represented one of the 15 species housed in the new Asian exhibit. From the beginning, keepers knew that there was something special about her. When the exhibit opened, she amazed guests with her stealth-like hunting skills, effortlessly grabbing live fish from her pool.

As the first fishing cat to call Denver Zoo home, Maliha has played an important role in connecting staff and visitors with real world conservation issues. The zoo's local AAZK chapter donated conservation money to the Fishing Cat Research & Conservation Project following Maliha's arrival. As a result, the project's leader, Namfon Cutter, traveled to the zoo to talk with staff and volunteers about the work she is doing to help these felines in the wild. This provided staff with a way to connect to real world conservation and laid the foundation for future partnerships.

Maliha is also teaching guests about this often misunderstood cat. Keepers can engage with visitors via public feedings, leading to conversations about endangered species and the complex relationship fishing cats share with their human neighbors in Asia. With so few of these cats in zoos across North America, Maliha truly symbolizes the need for the continued support of these amazing felines.

At seven years old, Maliha continues to thrive in her new home. She readily engages in training sessions with staff and has mastered a variety of new behaviors. In her short time at Denver Zoo, Maliha has proven to be an exciting addition to the Denver Zoo family.



Photo: Molly Kainuma



## Care of 1.0 Snow Leopard *Uncia uncia* With Eyelid Coloboma at Utah's Hogle Zoo

By Stephanie Jochum-Natt, Utah's Hogle Zoo Senior Keeper

In April 2012, our 13-year old snow leopard female, Nema, gave birth to a single male cub we named Chimeegui (*chim-ā-gwee*), which is Mongolian for "quiet". We monitored the birth and development of the cub in the den box via an infrared camera system. A short time after the cub's eyes had opened we began to notice he was blinking his eyes a lot. We believed his blinking was just irritation caused by the den box bedding.

At five weeks of age, the cub peeked out of the den door and we were able to get a much better look at his eyes. We immediately noticed that his eyelids did not look normal. We separated the mother so the cub could be examined by Hogle Zoo's Senior Veterinarian, Dr. Nancy Carpenter. Her initial exam found that the right eyelid had a prominent defect and was introverted, causing irritation to the cornea. The left eye also had eyelashes growing abnormally down into his eye. We cleaned his eyes well and administered ophthalmic ointment. We also discovered during the exam that his hind legs were splayed. He could maneuver around quite well, but he tended to drag his hind legs and would not put his full weight on them. We decided that we would begin separating the cub from his mother briefly every day to administer eye ointment and to do some physical therapy with his legs.

A week after our initial exam, we removed the den box so the mother and cub would have a larger area to explore in hopes that he would use his hind legs more. We had filled the shifts and indoor exhibit with grass hay, but soon discovered that the hay did not give the cub enough traction to help with his walking. Sod was then placed on top of the concrete floor in the shifts and indoor exhibit. This substrate helped Chimeegui get traction. We soon observed him doing a hop-like walk more often than scooting along and regularly putting weight on his back legs. Logs, lounges and spools were placed in the exhibit to offer him more climbing opportunities to stretch his hind legs. One enrichment device that made him stretch for longer periods was a tall water trough filled with bobbing toys (coconuts, boomers, etc.). It would keep him occupied for long periods. He had to stand on his rear legs to get to the toys, thus providing a strength building opportunity.

Dr. Carpenter and Associate Veterinarian, Dr. Erika Crook, examined Chimeegui several times a week and consulted with veterinary ophthalmologist, Dr. Nicole MacLaren DVM, DACVO. Every morning and afternoon, keepers separated Nema from the cub and held him for the administration of eye ointment. He did not struggle and was easily held for the procedure. We found that if we tried to scruff him or use more restraint he would become anxious, cry out and struggle more. We wanted to make his interactions with the keepers a positive experience so he would be easier to handle as he grew and required more treatments. So, immediately after the ointment treatment was given, a keeper would stay in the shift with Chimeegui and offer him enrichment to interact with. We chose items that he could have only while a keeper was with him, so the items were always novel. He was offered items to climb on and was often



Chimeegui before treatment (Photo: Jill Vanmilligen)

encouraged to stand up to stretch his legs and put more weight on them. His legs would often splay out to the sides when he sat or laid down, so we would adjust his legs in a correct position underneath him. Our interactions with him were not very long, approximately 15 to 20 minutes after the ointment treatment. We never interacted with him, unless he wanted to. He was given a choice to ignore us or engage in the enrichment play.

When the cub approached five months of age, he became difficult to hold for ointment treatments. He was beginning to wean, which was our age criteria for surgery in case he was rejected post-operatively. He underwent surgery at Hogle Zoo's L.S. Skaggs Animal Health Center to repair his eyelids. Dr. MacLaren performed the surgery. Both eyelids were repaired by removing the abnormal eyelid and then closing the gap. In addition to the surgery, full examinations of both eyes were conducted. Other abnormalities noted at that time included persistent pupillary membranes, which are the result of a cleavage defect as an embryo where the iris and the cornea do not fully detach from each other. This leaves strands that can be seen on exam. Also noted was persistent primary vitreous, which is the hyaloid artery being retained leaving a connection from the optic disc to the back of the lens. Although the other eye issues do interfere somewhat with his vision, he still seems to see well. Radiographs were taken of his pelvis and hind legs during this exam but he was too young for the bones to be fully visible. A few weeks after the surgery, Chimeegui debuted to the public with his mother in an outdoor exhibit. All ointment treatments and in-exhibit interactions with keepers were stopped. By this time, he was showing great improvement with his walking and climbing. The new yard offered him new challenges, such as large logs, and a six-foot high ledge.

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Six months later, when Chimeegui was nine months old, we began to notice that his eyes had discharge almost daily and he was blinking and squinting more often. During training sessions, we discovered that eyelashes were once again abnormally growing downward into his eyes. He underwent a second surgery, again performed by Dr. MacLaren, to freeze the lashes with liquid Nitrogen. The goal was to freeze the follicles that produce the lashes such that they would cease to grow. Radiographs were taken of his pelvis and hind legs once more. No bony abnormalities were visible, so it is thought that he has tendon laxities that are responsible for his abnormal gait. He recovered quickly from the procedure and as of this writing the eyelashes have not regrown. He was moved with his mother to a much larger and even more challenging outdoor exhibit where he is housed today. This exhibit has steeper ledges, a water feature and tall rock work. Despite his slight abnormal gait and possible vision problems, he maneuvers around the obstacles in the yard with ease. Although the coloboma condition has been seen in snow leopards in zoos around the world, the cause is not fully understood nor is it known how this condition could impact the population of these endangered cats. Our experience with this condition has made us more prepared to deal with issues our future snow leopard cubs may have. We believe that our decision to make the treatments and the interactions we had with Chimeegui as positive as possible from the very beginning made caring for him easier for us and for him.



Chimeegui after treatment  
(Photo: Stephanie Jochum-Natt)

#### Meet Bahati, A Pioneer in Serval Management

The star of the summer show at Tautphaus Park Zoo in Idaho Falls is Bahati, a two-year-old African serval. She was one of three kittens born to our experienced mother serval in March 2011. Bahati was discovered outside of the nest box causing the dam to focus on raising the other two kittens and neglect Bahati. The decision was made to hand raise her. After such an inauspicious start, she was a very healthy kitten and grew quickly. Bahati is of 100% known genetic heritage (her mother is a founder to the SSP imported from Africa and her father has 100% known pedigree). Now that the Serval SSP is managing program servals as part of the pedigreed breeding population, we are excited to be the first zoo to incorporate a fully pedigreed serval into our education programs and shows.



We started training Bahati while she was still drinking milk, bridging her with a clicker when she got her bottle, feeding her on her station, and teaching her to use the litter box. When she was eating meat, we started a formal training program. She picked up new behaviors so quickly that we struggled to think of new ideas fast enough! She now lives on exhibit, right next to her mother and father. Her trainers do training sessions on exhibit with her three times a day at feeding times and she comes out of her exhibit on leash for show performances. Bahati is not contracepted and shows signs of cycling, especially when she is in close proximity to her father, but it interferes very little with her training. She is a wonderful ambassador for her species and all exotic cats.

- Emily Lutz, Keeper, Tautphaus Park Zoo and Serval SSP Vice Program Leader

Bahati is a very important serval to the Serval SSP. She represents the new direction the SSP is taking to managing the serval population for maximum sustainability. She is the first 100% known pedigree serval to be incorporated as an animal ambassador in education programs since the incorporation of the new management system. Not only will Bahati inaugurate changes in the management of the serval population, but she will serve as an important case study in testing the limits of managing program animals within the breeding population. There are many anecdotal beliefs as far as how demographic or reproductive status affects an animal's ability to be a program animal, and the Serval SSP aims to accumulate scientific data that will validate or disprove these beliefs. Bahati's status as an effective program animal will continue to be monitored, but thus far she is showing that with appropriate preparation and training a non-contracepted female serval may indeed make an effective program animal. Thank you to the Tautphaus Park Zoo for their continued cooperation with the Serval SSP and congratulations to them for their success managing Bahati as an animal ambassador putting them on the cutting edge of incorporating program animals into sustainable population management.

- Dan Dembiec, Serval SSP Program Leader



(Photos: Tautphaus Park Zoo)



## San Francisco Zoo Announces the Birth of a Sumatran Tiger Cub

On February 10, 2013, a single female Sumatran tiger cub was born to experienced mother Leanne. Leanne successfully raised the three boys she gave birth to in 2008. In 2012, Leanne was paired with an inexperienced male, Larry, who joined us from Jackson Zoo. The matching of our experienced female with an inexperienced male was successful during Leanne's second estrous and introductions. Prior to breeding, ultrasound training started with a specially designed bench. Confirmation of pregnancy was made via voluntary ultrasound in December of 2012. Weekly ultrasound exams were performed until a week before the birth. Each week, it was reassuring to see the cub's beating heart and strong movements. Cameras in the nest box allowed us to observe Leanne prior to the birth and during the birth. Post-birth, the cameras have enabled us to monitor mother and cub 24 hours a day. What we have seen thus far is a perfect mother once again and a thriving cub.

- Debbie Marrin-Towey



Photo: Corinne MacDonald



Photo: San Francisco Zoo

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Vacant	

Jaguarundi Phase-in  
Caracal Yellow SSP  
Serval Yellow SSP  
Fishing cat Red Program  
Amur leopard Yellow SSP  
Canada lynx Yellow SSP  
Lion Green SSP  
Cheetah Yellow SSP  
Snow leopard Yellow SSP  
Sand cat Red Program  
Ocelot Yellow SSP  
Pallas' cat Red Program  
Puma Yellow SSP  
Clouded leopard Yellow SSP  
Bobcat Yellow SSP  
Tiger Green SSP  
Jaguar Yellow SSP  
Black-footed cat Yellow SSP

## **Submissions**

Felid TAG Times is edited by Shasta Bray, Felid TAG Education Co-Liaison. Please send comments, suggestions, and submissions to [Shasta.bray@cincinnati-zoo.org](mailto:Shasta.bray@cincinnati-zoo.org). Submission deadline for the August issue is July 1.