

BIG CATS



THE LION SSP: MEETING REPRODUCTIVE CHALLENGES

TARREN K. WAGENER, DIRECTOR OF CONSERVATION & SCIENCE
AT THE FORT WORTH ZOO.

The king of beasts is unfortunately a rarity in AZA zoos these days. In 1998 at the time of the first formal breeding recommendations by the Lion SSP, only 10 percent of the Felid TAG's lion holding spaces were occupied by pedigreed lions, those that are traceable and part of the breeding program. Since that time, Lion SSP institutions have been working hard to increase that statistic, and now nearly 30 percent of those spaces are filled with known pedigree cats.

However, 23 institutions are seeking lions over the next two years and the SSP is challenged to fill that need. In recent history, the SSP has found itself in a "triage" situation of pairing singletons, filling empty exhibits and trying to breed as many pedigreed cats as possible. Add to the mounting institutional needs a lower than expected reproductive rate, complicated by reproductive anomalies at multiple institutions, and the SSP finds itself in a challenging position. An aggressive strategy has been adopted – placing "proven breeding success" above the traditional mean kinship. As a result, all proven breeders, regardless of time last bred or mean kinship of its mate at the institution, are currently recommended for breeding. And, as cubs are produced and placed, that institution receives another breeding recommendation.

From 2001 to 2003, only eight pedigreed lions were produced. Last year the situation changed dramatically, and the SSP was able to place 19 cats and brought an additional six institutions on-line with pedigreed cats. The SSP Reproductive Advisor, Dr. Buddha Pukazhenthhi (Smithsonian's National Zoo), is aggressively working with several institutions to identify reproductive issues as they emerge (e.g. cycling and repeated breedings with no conception, uterine pathologies related to infection and an aging female population). These pro-active strategies are resulting in a win-win situation, the population remains genetically healthy (97 percent gene diversity) and institutional needs are slowly being filled. As a result of the 2005 recommendations, the SSP has produced 12 cubs to date; however, animals will not be available for transfer until a year of age. Given the ongoing needs, there may be a wait of several years for animals.

The bottom-line? Let the SSP know your needs now, and understand that we are working hard to fill them.

The work doesn't stop there, though. Recent assessments by the IUCN now list the West African lion as Endangered, and remaining African populations as Vulnerable. The 2004 IUCN Red List assessment for these remaining lions indicates a population reduction of 30 to 50 percent over the past two decades alone. These alarming statistics underscore the importance of all lions in AZA zoos and the teamwork needed now and in the future to meet the conservation challenges for this species.

The Felid TAG began its work in the early 1990s. Over the last fifteen years this dynamic group has worked together for the benefit of all felids through encouraging good science, capacity building, continuous improvement in animal management and an emphasis on in-situ conservation. Some large cat SSP programs like those for the Cheetah have a long history. Others, including the African lion and Jaguar are just beginning to emerge from their formative stages. All continue to strive to achieve their goals through hard work and cooperation. All of us involved in the Felid TAG could not do our jobs if it wasn't for the support of our home institutions, our visitors, and our fellow AZA colleagues like you. As you read through the large cat SSP updates, give yourself a pat on the back – you have helped make these stories happen. So, on behalf of all of us, thanks and keep up the good work!!

NORAH B. FLETCHALL
FELID TAG CO-CHAIR



BIG ISSUES

CHEETAH SSP BREEDING CENTERS

JACK GRISHAM, SPECIES COORDINATOR – CHEETAH SSP,
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The cheetah is a well recognized, flagship species with charismatic adaptations such as its sleek, muscular body and its blazing speed. As such, cheetahs capture the attention of the public, the research community, and policy makers, all of whom can raise awareness of conservation issues.

While it is difficult to breed cheetahs *ex-situ*, there is adequate genetic diversity in captive cheetah population to prevent inbreeding depression. In addition, this genetic diversity means that the current captive cheetah population is a strong representation of the current wild cheetah population – the captive population can serve as a gene reservoir for the entire species.

Managers of captive cheetah populations from North America, Europe and South Africa met at an April 2003 workshop at Fossil Rim to discuss the development of a worldwide cheetah *ex-situ* management plan, which would include a set of best practices.



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EVIDENCE THAT LARGE BREEDING FACILITIES ENHANCE CHEETAH BREEDING SUCCESS

The most successful cheetah breeding facilities (DeWildt, Wasnaar, White Oak Conservation Center) house large groups of individuals, are managed by experienced staff, and base their management on:

- Cheetahs need options for mates, and need compatible temperaments. Male and female cheetahs make choices among sexual partners – often based on an individual animal's temperament. This makes breeding based solely on genetic compatibility impossible, so successful breeders will have a sufficient number of genetically compatible individuals to provide the animals with choice.
- Experienced males are more likely to mate with inexperienced females, so facilities should have both.
- There should be off-exhibit areas in cheetah enclosures for private breeding and the birth and rearing of young.
- Consistent disease monitoring and control programs help eliminate the transmission of pathogens and reduce stress concerns that accompany zoo-to-zoo animal shipment.

REGIONAL CHEETAH BREEDING CENTERS

Regional breeding centers would share resources to ensure a genetically and demographically viable, self-sustaining cheetah population. Each center would need to meet the following criteria:

- Large breeding and holding spaces – 20 to 30 cheetahs with an appropriate sex ratio – with large, naturalistic compounds, and separate holding areas for feeding, medical care, denning and research.

- Experienced staff with authority to make management decisions on breeding.
- Long-term institutional commitment – both fiscal and philosophical.

HOW A REGIONAL CHEETAH BREEDING CENTER WOULD WORK

The Cheetah SSP Master Plan includes specific recommendations for placing breeding animals in each regional center. The Centers and their partner zoos would make specific arrangements based on those recommendations based on two options:

- The Center manages all reproduction for a specific female – breeding through cub development.
- The Center briefly houses a female during breeding, then returning the pregnant individual to its home institution or returning the female and cubs at an appropriate time. Partner zoos would be assured of exhibit animals to replace the breeder animals sent on loan to the Center.

SUCCESS

Zoos in Ohio (Cincinnati, Columbus and Toledo) served as the first real test of the Regional Center concept. A male from Cincinnati and a female from Toledo bred at the Cincinnati Zoo breeding facility. In 2004, their first successful litter was born in Cincinnati. Once the cubs were old enough, they were moved with the dam back to Toledo Zoo. A second litter, born October 2005 in Cincinnati – using a male from Cincinnati and a female from Columbus – is proof that this concept can work, and can enhance the long-term management of cheetahs in North America.

JAGUAR SSP: A HISTORY OF SUCCESS

STACEY JOHNSON, JAGUAR SSP EDUCATION LIAISON, FORT WORTH ZOO.

The Jaguar Species Survival Plan got a late start in comparison to the other great cat SSPs and two challenges stood before it when organized in the mid-1990s: One was to successfully manage the North American zoo population; the second was how to become an effective force in *in-situ* conservation. These are the two startup tasks for every SSP, and they were intensified for the Jaguar SSP because it began with a large, aging, mostly-contracepted and inbred North American captive population at a time when exhibits of the New World tropics were being created in many AZA institutions.

With only one animal having a pedigree traceable back to the wild, demand was high and supply was low. So, the goal of importing animals of known wild pedigrees became a top priority. In 2005, after six successful imports of 14 jaguars and ten litters of cubs, the traceable population available for breeding stands at 21.17.3 animals. None of those cats was collected from the wild for the sole purpose of exhibition. In every case, they have been confiscated or nuisance animals or their zoo-born offspring. There is still a long way to go, but with the support of member institu-

tions, like-minded colleagues in range country zoos and the U.S. Fish and Wildlife Service Division of Management Authority, we have made significant strides in building a sustainable program.

Although rare or nonexistent in certain parts of its historical range, the jaguar is not truly in danger of extinction today. Generally, the species is disappearing only where its habitat has become unsuitable. Therefore, reintroducing jaguars to the wild is impractical because land where they have disappeared cannot support them and where they thrive there is no need.

Education, then, becomes the best focus for the Jaguar SSP. Zoo visitor education is key to informing people in the U.S. about the American big cat, and that its conservation has implications at home and abroad. Likewise, building basic biological and ecological understanding of jaguars is important because it remains the least known of the big cats. The Jaguar SSP recently completed a thorough set of guidelines for zoo management, and it maintains a Web site dedicated to providing reliable information in both English and Spanish. The SSP encourages new field research projects and works to facilitate collaboration among participants and colleagues in range countries. Finally, it endorses projects that develop partnerships to conserve jaguar habitat and promote sustainable coexistence with other human activities.

In ten years the Jaguar SSP has moved from being an idea on paper to achieving its goals alongside the other big cat SSPs. With each milestone and attainment, new ones are revealed. The next decade promises to be no less challenging, but no less rewarding either.
