



CREW Puts its *Signature* on Wildlife Conservation



Rhinos



Exceptional Plants



Small Cats



Polar Bears

Roth's Remarks



Dr. Terri L. Roth
VP of Conservation & Science and Director of CREW

A dozen years ago, CREW's senior staff worked with the Zoo's Conservation Committee on developing a strategic plan. From that process emerged the idea of focusing the majority of CREW's resources on a few carefully selected *Signature* Conservation Projects in an effort to make a meaningful difference for a few of the world's imperiled wildlife species. This strategy is in contrast to that used by some other conservation organizations and zoos that seek to maximize the number of different species and countries with which they work. There is no right or wrong conservation strategy as long as zoos commit to one that contributes to saving the world's biodiversity, but our decision to take a more focused approach has been extremely productive. For many years, CREW has worked primarily on three *Signature* Conservation Projects: 1) rhinos; 2) exceptional plants; and 3) small cats. This year, polar bears were added as our fourth *Signature* project. Over time, each program has experienced highs and lows and our scientists, in turn, have reveled in glorious successes and endured heart wrenching disappointments, but one aspect has remained constant - we continue to march forward, and the results speak for themselves: 1) three Sumatran rhino calves born at the Cincinnati Zoo and a grandson recently born in Indonesia, three term Indian rhino pregnancies produced by artificial insemination (AI) with cryopreserved sperm and a fourth on its way; 2) hundreds of Avon Park harebells, Autumn buttercups and Cumberland sandworts propagated in test tubes at CREW and outplanted into the wilds of Florida, Utah and Kentucky, respectively; 3) ten litters of ocelots, Pallas' cats and sand cats produced by AI or embryo transfer at four zoos in three countries; and 4) the first ever sperm banking and AI in polar bears. Although we continually feel the pressure to accomplish more and move faster, by staying focused and persevering, we are achieving our mission of making a significant impact on conserving a few of the world's most endangered species.



Rhino Signature Projects

The Peaks and Valleys of Rhino Conservation Research

CREW staff often comments on the brief peaks and unavoidable valleys inherent to careers in wildlife conservation. As scientists, we are accustomed to “going back to the drawing board” when results of a study are not what we anticipated. We learn from those results, adjust our hypotheses and methodologies and conduct another study, a pattern we repeat until we achieve the desired goal. However, in the field of conservation, there are so many confounding factors that are beyond our control that even when the science works, we sometimes find ourselves in a valley. The most recent updates about CREW’s *Signature* Rhino Conservation Project provide excellent examples of both scenarios. The Indian rhino project is at a peak following a change in methodology that resulted in a tremendous scientific breakthrough. In contrast, wild Sumatran rhinos are in sharp decline and the species is teetering on the edge of extinction despite steady progress with the captive breeding program.

Special Baby Rhino at Montgomery Zoo Produced by Science Pioneered at CREW



Ethan

On June 5th, the Montgomery Zoo in Alabama announced the birth of a special rhino calf that had strong ties to Cincinnati. Sixteen months earlier, the Montgomery Zoo’s twelve year old female Indian rhinoceros ‘Jeta’ had been artificially inseminated (AI) using techniques pioneered by CREW. For Reproductive Physiologist, Dr. Monica Stoops, who leads CREW’s Indian rhino effort, it was a culmination of years of research, teamwork and perseverance. This exciting birth represents the first surviving calf of any rhino species produced by AI in a U.S. Zoo.

Although the female Indian rhino ‘Jeta’ had previously reproduced following natural breeding, AI was requested in 2011 due to behavioral incompatibility with her current mate, ‘Himal’. The ability to integrate AI into the situation eliminated the risks of injuries that may have resulted from aggressive interactions between the pair. The AI technique developed for Indian rhinos at the Cincinnati Zoo was achieved with the help of keeper staff, who conditioned the rhinos to allow the procedure to be performed without the use of anesthetics. Their efforts were rewarded with two term pregnancies at the Cincinnati Zoo in 2007 and 2010, but sadly, neither calf survived. A new approach was needed in order to expand CREW’s AI research to Indian rhinos at facilities that do not have the capacity/facilities to condition rhinos to voluntarily allow hands-on procedures. Working in partnership with Dr. Jack Kottwitz from the Montgomery Zoo, a standing sedation protocol for Indian rhino AI was established. Although logistically difficult, the strategy worked because the Montgomery Zoo’s keeper and veterinary staff were committed to collecting samples and monitoring their rhino closely for signs of behavioral estrus. After the third AI attempt on Jeta using sperm that had been collected at the Wilds and stored in CREW’s CryoBioBank for eight years, the first Indian rhino AI pregnancy outside of Cincinnati was produced. The Montgomery Zoo staff carefully monitored Jeta’s pregnancy over the 480 day gestation period and she successfully gave birth to a male calf named ‘Ethan’.

Ethan’s birth is a significant scientific achievement for CREW, the Montgomery Zoo and the Indian rhino Species Survival Plan since the Indian rhino is an endangered species. This calf demonstrates that sperm banks and AI are valuable tools that can now be integrated into the management strategy for the captive Indian rhino population. With only 60 Indian rhinos in North America zoos and approximately 3,300 remaining in the wild, successful breeding is important for maintaining the genetic diversity necessary to keep a population healthy and self-sustaining. Unfortunately, natural breeding attempts in captive Indian rhinos sometimes result in severe aggression between the male and female. Thus, behavioral incompatibility can hinder the genetic management of the population. AI now offers a method for overcoming this hurdle and infusing genes from non- or under-represented rhinos into the population. Future AI attempts will build upon this novel approach to help not only the Cincinnati Zoo, but other zoos produce Indian rhino calves. (CREW’s Indian rhino program has been supported by several generous private donors, grants from the Morris Animal Foundation and International Rhino Foundation, and most recently, by a National Leadership Grant from the Institute of Museum and Library Services.)

Can Washington D.C. Help Save The Sumatran Rhino?

Despite the successful science that made breeding Sumatran rhinos in captivity achievable, repeatable and transferable and resulted in four Sumatran rhino calves produced at the Cincinnati Zoo and in Sumatra, the species is teetering on the edge of extinction. At a recent Sumatran Rhino Crisis Summit, participants were stunned to learn that there may be fewer than 100 Sumatran rhinos left on the planet. The species is recognized as one of, if not the most endangered large mammal on Earth, and the recent surge in illegal poaching and deforestation due to palm oil are decimating them faster than scientists and conservationists can make incremental progress towards saving them. Since that dire announcement, CREW has engaged in several initiatives that may help change the trajectory for the Sumatran rhino. One that has gained momentum this summer is a collaborative effort with other NGOs (International Rhino Foundation, World Wildlife Fund and SOS Rhino) working in Washington D.C. to recruit help and support from political leaders and the State Department. Ohio Senators Sherrod Brown and Rob Portman as well as Congressman Steve Chabot have all written letters in support of the effort to save this species and a strategy has been drafted and agreed upon by the U.S. and Indonesia regarding necessary next steps to save the last stronghold of Sumatran rhinos on Sumatra. All of these actions (and a little luck) are going to be needed to keep this species from slipping away, but working together, passionate people can and do achieve amazing things.



Ohio’s U.S. Congressman, Steve Chabot, visits Sumatran rhino Harapan