



# CREW ReView



Lindner Center for Conservation and Research of Endangered Wildlife • Cincinnati Zoo & Botanical Garden

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## Roth's Remarks CREW - Serving the Nation's Zoos and Gardens



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

CREW is world-renowned for its scientific breakthroughs in endangered species research, but it is also becoming well known and appreciated for assisting the nation's zoos and gardens with their collections. In addition to being critical for the groundbreaking research CREW scientists conduct, the tools and expertise at CREW often are unique and are called upon to help zoos and gardens with needs related to the propagation, management and well-being of their living collections. Whether

it is a fertility exam on a male rhino, artificial insemination of a physically challenged ocelot, tissue culture with the last plant of its species, or pregnancy detection in an otter, CREW scientists readily try to assist all who call upon them. However, no place benefits more from CREW than the Cincinnati Zoo & Botanical Garden itself. In just the past year, CREW has provided assistance to the Cincinnati Zoo's collections by: detecting/monitoring pregnancy in an okapi, diagnosing pregnancy in multiple Pallas' cats, evaluating semen in a bull elephant, monitoring estrus and pregnancy status in a polar bear, producing the first Indian rhino calf by AI, assisting elephant breed-

ing through hormone monitoring and ultrasound exams, diagnosing ovulation and pregnancy in multiple cheetahs, coordinating an AI procedure in a clouded leopard, providing endangered plants for display, and the list goes on. After all, CREW's mission – **Saving Species With Science®** – encompasses both the research necessary to learn about endangered species and the application of what is learned to enhance species survival. Achieving that mission often begins in our own backyard, expands to our nation's zoos and gardens and eventually benefits other continents altogether.





## Making A SCaRCe Commitment to Small Cat Conservation

The Cincinnati Zoo & Botanical Garden has a worldwide reputation for the diversity of its small cat population and its success in breeding many of these endangered species in captivity. The Zoo currently maintains 13 small cat species - far more than any other zoo in North America - and, over the past 25 years, has successfully bred 16 different species. Our reputation with small cats has been further enhanced over the past ten years by our leadership role in managing small cats within the Association of Zoos and Aquariums, our reproductive and disease research studies based at CREW, our support for in situ conservation of small cats in range countries such as Mongolia, Thailand, South Africa and Brazil, and our education and awareness initiatives conducted through the Zoo's Education Department.

Despite our numerous successes, one challenge associated with our small cat program has been trying to exhibit and breed cats in the Cat House while simultaneously striving to educate the public and conduct our vital research. Although some individual cats do reproduce while on public exhibit with thousands of zoo visitors looking on, many other cats are reluctant to breed in this environment and likely would benefit from a quieter, more isolated setting. Frequently, the cats that are most valuable genetically are those that are most resistant to reproducing while on public display.

We believe that the solution to this challenge lies with the Small Cat Reproduction Center (SCaRCe), the first dedicated small cat breeding facility built by any zoo in North America. The State of Ohio, through its 2009 capital appropriations bill, recently gave our conservation efforts a major boost by allocating \$1.5 million dollars to support construction of this facility. Beginning in late 2009, SCaRCe will be built on a portion of a 528 acre offsite property owned by the Zoo in nearby Warren County. When completed, SCaRCe will have the capacity to maintain up to 16 breeding pairs of small cats, focusing primarily on the five species (ocelot, black-footed cat, fishing cat, sand cat, Pallas' cat) managed in Species Survival Plans (SSP) but also including other small-sized felids in need of conservation attention. The emphasis of SCaRCe will be on natural breeding of SSP-recommended pairings for improved genetic and demographic management of these threatened populations. SCaRCe also will house a veterinary clinic for medical procedures as well as endocrinology and gamete biology laboratories for use by CREW scientists. This breeding facility reinforces the Zoo's commitment to small cat conservation through its Small Cat Signature Project and represents one component of the Zoo's innovative Cat Canyon capital project.



Pallas' cats are one of many small cat species that will benefit from SCaRCe

## CREW Awarded Prestigious National Leadership Grant

CREW recently received a highly regarded federal grant from the Institute of Museum and Library Services (IMLS). This prestigious award of \$835,000 over three years will support two of the Zoo's four Signature Projects: rhinos and small cats. Specifically, this IMLS funding will support CREW's efforts to demonstrate the feasibility and value of incorporating

genome resource banks and assisted reproduction into the management and breeding of endangered rhinoceroses and imperiled small cats. The project will involve collaborative work in five international countries including Indonesia, Brazil, Mongolia, India and South Africa. Results could benefit zoos nationally and internationally while revolutionizing the way endangered animals are managed to enhance genetic diversity. This award also provides further recognition of CREW as one of the nation's visionary leaders in the conservation of endangered animal populations.



## Andalas Adapts to Sumatra (and Thrives)



Dr. Terri Roth visits Cincinnati Zoo's first-born Sumatran rhino calf, Andalas, in his current home.

A recent visit to the Cincinnati Zoo's first-born Sumatran rhino calf, Andalas, in his current home at the Sumatran Rhino Sanctuary (SRS) on Sumatra revealed many encouraging changes both with Andalas and with the program itself. Andalas appears to be mature weighing in at 770 kg (1700 lbs) and is now the largest rhino at the reserve. His neck has thickened making him look much more like his father, Ipuh, and his interest in the female rhinos has become apparent, suggesting he will soon be breeding them. Despite all of these changes, Andalas has maintained his childhood love of people and the attention they give him. He is the most well behaved rhino in the reserve for blood collection, foot exams, ultrasound exams and many other hands-on procedures that help the staff maintain his excellent health. Andalas has never been sick nor seriously injured and he has adapted to the new forest environment, the change in diet and exposure to many new insects that he hadn't encountered in the US, without a hitch. As heartening are some of the facility and programmatic changes at the SRS that have evolved in recent years: extensive shade is provided over all stall areas to protect the rhinos from too much sun; soft mats are provided; and footbaths for the staff are now placed in front of every rhino

enclosure to reduce the risks of transferring disease if one of the rhinos happens to get sick. Perhaps the most notable and encouraging change in the system is the regular ultrasound exams conducted quite competently by the SRS veterinary staff to help critically time introductions between female and male rhinos. This improvement in the management routine was made possible by the donation of a portable ultrasound unit from Sonosite that was generously provided to the Cincinnati Zoo for donation to the SRS. All are anxiously awaiting the first time Andalas successfully breeds a female rhino, meanwhile, Andalas is clearly benefiting from the outstanding care and wonderful home the SRS provides.

## CREW Endangered Species Garden Revitalized

Endangered plants at the Cincinnati Zoo & Botanical Garden are getting a new face, thanks to a combination of the redesign of the area between the new Zoo Hospital and the CREW Building and to a grant from the Association of Zoological Horticulture (AZH). Established as the Gertrude MacRae McIlwain Endangered Species Garden at CREW in 1991, it graced the front of CREW for 18 years, with common and endangered species that represented four habitats of our region. With the redesign of the road leading up to CREW, it was decided to redo the garden and give it a fresh look. The new garden design will focus on individual endangered species, rather than habitats and will include species that CREW's Plant Division has worked on, in addition to other species that are endangered regionally, nationally, and internationally. Some examples are the Alabama leatherflower, the Roan Mountain bluet, and the Heartleaf plantain, all of which have been propagated and cryopreserved by the CREW's Plant Division. The Wollemi pine is a critically endangered species that was first discovered in the Wollemi National Park in Australia in 1994 and had been known previously only from fossils. The Lakeside daisy and the Running buffalo clover are Federally endangered species that are found regionally—the daisy near the shores of Lake Erie and the clover right here in Hamilton County. (Project supported by a grant from the Association of Zoological Horticulture.)



CREW Center with Endangered Species Garden.