



CREW ReView



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

Fall 2011

30 Years!



Roth's Remarks Celebrating 30 Years of Saving Species with Science®



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

One of the longest standing zoo research programs, CREW celebrated its 30th anniversary in October 2011. The Cincinnati Zoo & Botanical Garden's research program was first established in 1981 as a founding member of the Cincinnati Wildlife Research Federation together with King's Island and the University of Cincinnati. A decade later, the state-of-the-art Lindner Center for Reproduction of Endangered Wildlife (CREW) proudly opened its doors on the grounds of the Cincinnati Zoo as the first facility of its kind dedicated to both animal and plant conservation research. As it evolved, CREW's emphasis broadened from strictly reproduction to more diverse biological sciences with direct application to species conservation. To reflect this growth and philosophical shift, its name was changed in 2001 to the Center for Conservation and Research of Endangered Wildlife. Although the challenges of conserving endangered plants and animals have increased since CREW's genesis 30 years ago, it is heartening to reflect on the considerable progress CREW has achieved within its three Signature Conservation Projects (Rhinos, Small cats, Endangered plants). Its first Sumatran rhino calf, transported to Sumatra in 2007, is now producing the first pregnancies in the history of Indonesia's captive breeding program. The successful births of multiple ocelots, sand cats and Pallas' cats following artificial insemination, in vitro fertilization and/or embryo transfer at zoos in several countries are living proof that such technologies can facilitate global genetic management and long-term sustainability of small populations. Additionally, several endangered plants originating from CREW's plant tissue culture efforts are now repopulating wild habitats in Ohio, Kentucky, Florida and Utah. Step-by-step, we truly are achieving our mission using the latest in cutting edge technology guided by a heavy dose of common sense and driven by heartfelt passion. We are attaining our goals by collaborating with over 100 zoos, botanical gardens, universities and conservation organizations across the globe. We are succeeding because the alternative simply is unthinkable.

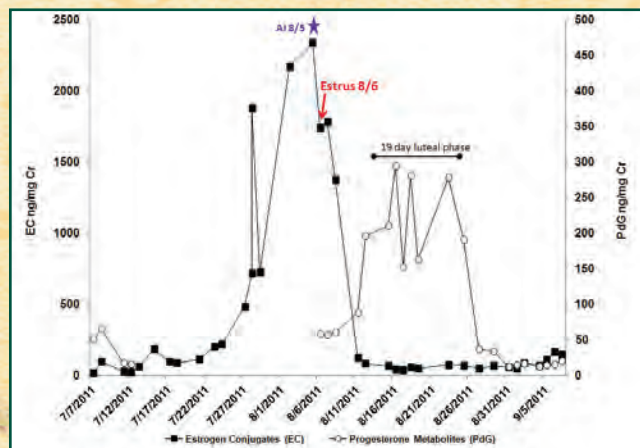
Rhino Signature Project Updates

Indian Rhino AI Project Expands to other Zoos

CREW scientists have demonstrated that genome resource banking and assisted reproduction can be used to produce genetically valuable Indian rhino calves. This groundbreaking artificial insemination (AI) research represents an important and new step in managing captive Indian rhinos. By producing offspring from non- or under-represented individuals, CREW is helping to ensure that a genetically healthy captive population of Indian rhinos exists in the future. CREW has recently expanded this effort to include Indian rhinos at other facilities. Although logistically difficult, this strategy could work for zoos committed to collecting urine samples for hormone analysis and/or monitoring their rhinos closely for signs of behavioral estrus. Two institutions that are collaborating with

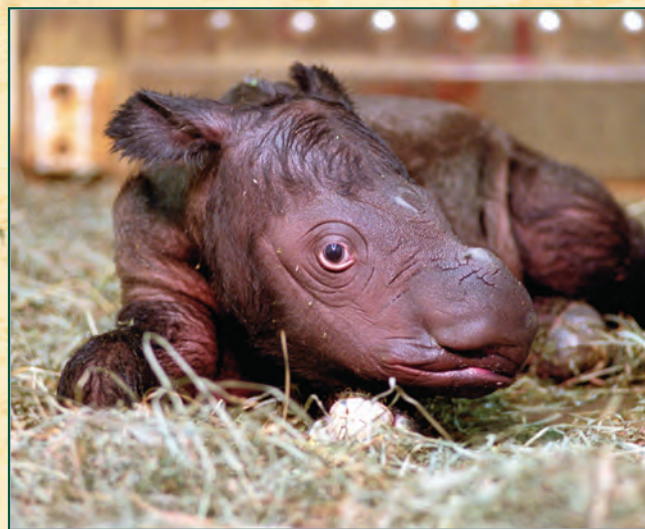


CREW on Indian rhino AI are the Wilds and the Montgomery Zoo. The female rhinos at these institutions are proven breeders, but AI has been requested to overcome challenges due to age and/or behavior of the current bulls. Female Indian rhinos at the Cincinnati Zoo have been conditioned for AI without the use of anesthetics, but a new approach was needed to expand our research to other facilities. CREW scientists and the veterinary and keeper staff of the collaborating institutions are developing protocols for performing AI with rhinos in standing sedation. An AI procedure was recently conducted in the female at the Montgomery Zoo approximately 72 hours prior to ovulation. Although the female did not conceive, much was learned from this initial attempt. CREW scientists will continue to refine the protocol, and as a result, hope to help other facilities produce Indian rhino calves.



Urine hormone profile in female Indian rhino at Montgomery Zoo during an August 2011 AI attempt.

From a Spark to a Flame –Andalas’s Legacy Grows



Andalas (at birth) may soon become a father.

Following his birth on September 13, 2001, the Cincinnati Zoo’s first Sumatran rhino calf, Andalas, was dubbed “The Spark of Hope” for his species since he represented an extraordinary breakthrough in the beleaguered effort to breed this species in captivity. Today, that spark is becoming a flame. Sent to Sumatra in 2007 to serve as a breeding male at the Sumatran Rhino Sanctuary (SRS), Andalas is now the only male rhino in Indonesia’s breeding program after an older male died without siring offspring. In February 2010, Andalas and his mate Ratu produced their first pregnancy, but that pregnancy was lost by the second month of gestation. Early embryo loss in Sumatran rhinos appears to be common. CREW scientists also documented five embryo losses in the Cincinnati Zoo’s female rhino Emi before she was prescribed a hormone supplement and finally carried Andalas to term. When Ratu conceived again following a mating with Andalas in March 2011, the SRS staff initiated the same hormone therapy that Emi had received and, as of this writing, Ratu is still pregnant. If all goes well, in the summer of 2012, Indonesia will be celebrating the birth of their first Sumatran rhino calf since the captive breeding effort began in the mid 1980’s. Rest assured, no one will rejoice with them more than those of us in Cincinnati who have never forgotten that endearing, awkward face that first greeted us on September 13th a decade ago.