CREW Review

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

Cincinnati **Fall 2007** esta primeir ria ocorreu ontem, em Junno Brasil. diai, interior de São Paulo, Ameaçad Zoo aids eprodução com a assinatura de um conlo excesso aumentar sórcio entre a Associação desmatamen Comeback Americana de Zõos e Aquáe felinos ca não é um rios (AZA), o Ibama, a Assopor exigir of plant iveiro ciação Mata Ciliar (AMC) e o Departamento de Reproespecificas c trição. A rei ankahood plante. CHN dução Animal e Zoológicos da Universidades de São da é, porta distante da distante da distante dis A transferens embriões Paulo. Por melo do consórcio, para uma mentar o fit pla dez zoológicos norte-amerim de sema-Cincinnati researchers un Cincinnati researchers un Cincinisk plant for Akron park leiras, para Cincinisk plant for Akron park leiras, para do da popu-terenet terenet tormultação da parce terenet tormultação da parce ricas em Carn m canos investirão cerca de rando o que mar de popul US\$ 90 mil, nos próximos 5 anos, em programas de trei-IF EAR geneticamente inam led by namento e capacitação de Pela reprodeero técnicos brasileiros na tran espera-se cheg. ferência de embriões e in 125 jaguatirici man minação artificial de brasileira nos "O projeto com a jar ndian Rhino by artificial inseminatio SEARCH rica cria precedentes ! tantes para parcerias opservação de pequent American-born Sumatran rhino to save spec rilleral Insign POSTED: 10:48 p.m. EST, February 20, 2007 About Indian rhinos

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Dr. Terri L. Roth VP of Conservation, Science, Living **Collections and Director of CREW**

The role of modern day zoos is always evolving, and in today's world of impoverished wildlife populations and habitats, there is more pressure and need than ever before for zoos to step up their involvement in research and conservation. The goal of every CREW scientist is to conduct research that ultimately helps save endangered species. However, progress

Roth's Remarks – CREW in the News

often is slow in science, and many

researchers wait a lifetime to realize major breakthroughs. Through their hard work, dedication, intelligence and relentless perseverance, CREW scientists have achieved an admirable list of notable accomplishments over the past decade. We rejoice over each and every one of these triumphs for the beneficial impact they will have on the plants and animals about which we care so passionately, but there is another byproduct of CREW's success that greatly benefits the entire greater Cincinnati region. CREW's scientific advances often make headlines locally, nationally and internationally. This kind of recognition for CREW's substantive work conserving wildlife is exactly what draws attention to the Queen City and keeps the Cincinnati Zoo & Botanical Garden at the top of the list as a world leader among zoos. Afterall, new exhibits will eventually age, plants and animals will move in and out of the collection and events become memories, the species we save will become the lasting legacy of the Cincinnati Zoo & Botanical Garden.



WAY KAMBAS NATIONAL PARK, Indonesia (AP) by plane, ferry and truck, a Sumatran mino born at a I crate into a sanctuary on his native island Wednesday groomed for his next task - breeding and helping save nom extinction

NATURE

CREW ReView

The "Y's" and "Y-Not's" of Rhino Babies

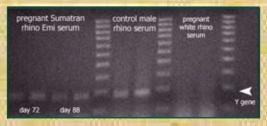


Photo of a gel of separated DNA fragments from an assay of pregnant female rhinos. Genomic DNA isolated from the serum of the rhinos was run in duplicate to detect a Y chromosome specific gene. Note the banding pattern for pregnant Sumatran rhino Emi serum and the male serum control. Emi was 72 and 88 days pregnant with Harry when the serum samples were taken. Note no bands were produced from the serum of a pregnant white rhino that subsequently gave birth to a healthy female calf. Just as in humans, the X and Y sex chromosomes of a rhino determines gender. Two X chromosomes make a female rhino, while an X and a Y chromosome make a male rhino. CREW scientists have developed a molecular technique that allows gender determination of a rhino calf while in utero simply by analyzing the blood of the mother rhino. Using serum collected from the pregnant rhino and exquisitely sensitive detection techniques, CREW scientists are able to determine whether the fetal DNA in the mother's serum is derived from a gene on the Y chromosome - a DNA region that is only present in males. If this DNA is detected in the mother's serum, then she must be carrying a male calf.

If there is no male DNA present, the calf must be female. To date, this rhino baby gender test has been 100% accurate and in fact, was used to determine the gender of our own Sumatran rhino, Harry, during gestation by analyzing the serum of his mother,

Emi. While CREW scientists are still collecting data for this study, it appears this test will provide a powerful management tool for institutions propagating rhinos. The ability to determine gender of rhino offspring will benefit zoos and each rhino Species Survival Plan by allowing more lead time for housing requirements and subsequent breeding recommendations. Besides, how else will zoo personnel find out whether they need to paint the rhino barn pink or blue!



"Harapan" the male Sumatran rhino calf born to Emi after a 479 day gestation.

Emi and the Rhino Scientist Debuts

Emi and the Rhino Scientist is a new 64-page book for young people that tells the amazing story of how CREW Director, Terri Roth, helped Emi become the world's most famous Sumatran rhino mom. The book features more than 80 full-color photographs of Emi and her family as well as CREW and Cincinnati Zoo staff at work. Although the book's focus is Emi's story, it also incorporates photos and valuable information about the other four rhino species. Houghton Mifflin is publishing the book as part of their award-winning Scientists in the Field series. The book was launched in Cincinnati in October and is available at many local bookstores and on Amazon.com. Check out the author's website (www.marykaycarson.com) for more information. If you love rhinos, wonder how zoos are helping to save endangered species, know a budding scientist , or just enjoy good wildlife photography, you won't want to miss this book!

