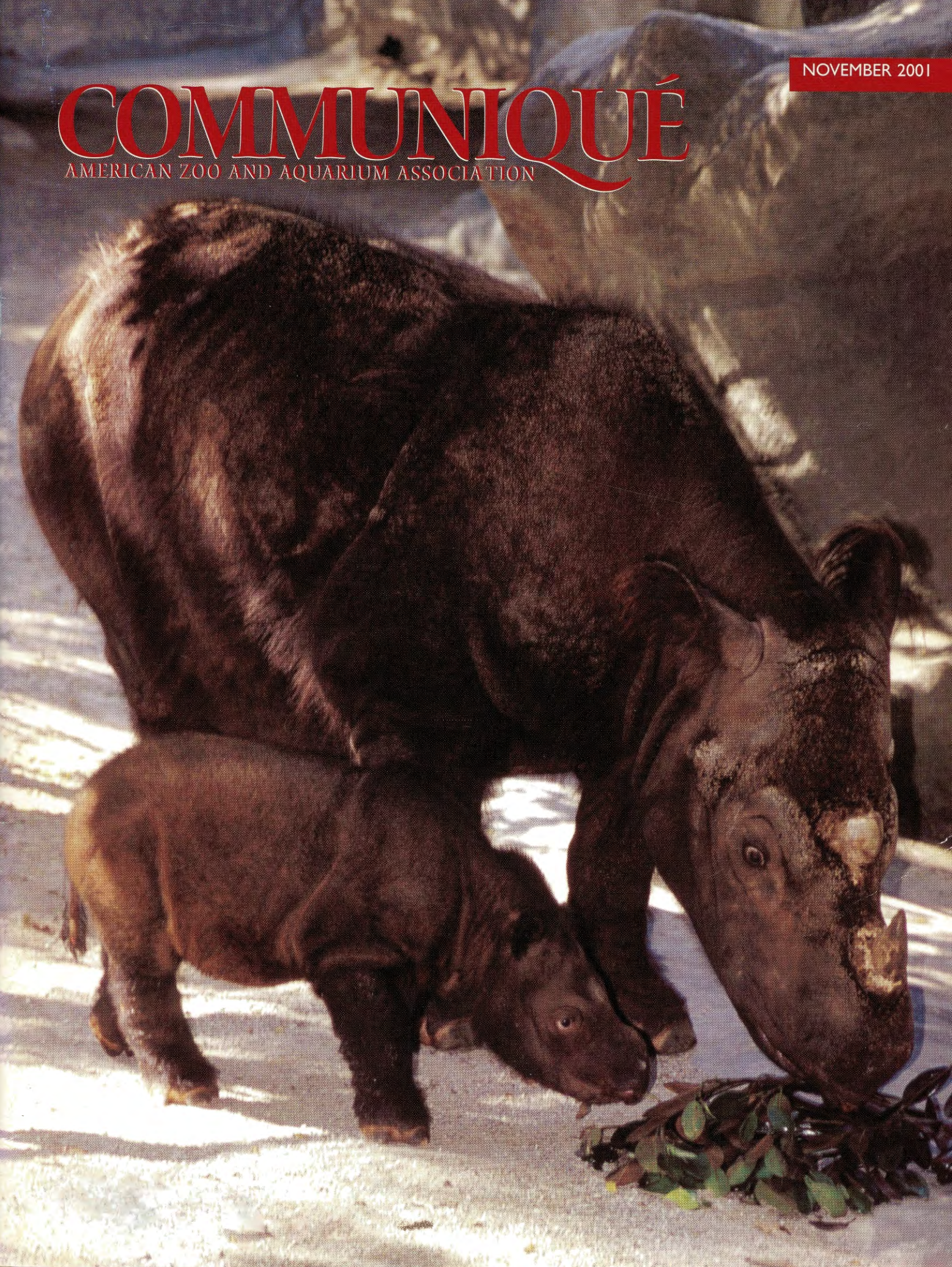


NOVEMBER 2001

COMMUNIQUÉ

AMERICAN ZOO AND AQUARIUM ASSOCIATION



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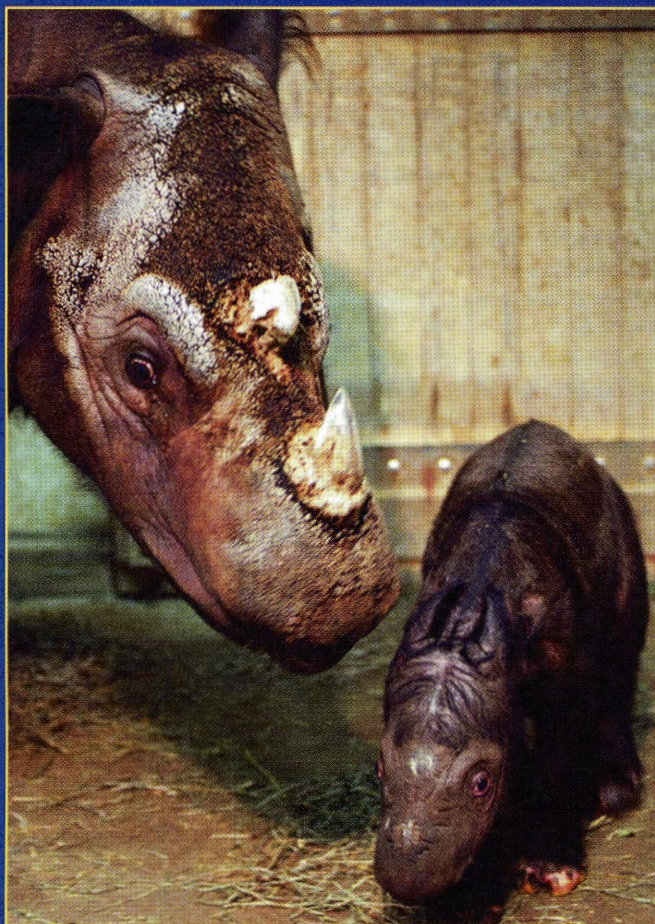
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A SPARK OF HOPE

FOR AN IMPERILED SPECIES

*By Dr. Terri L. Roth, Vice President of Animal Sciences
Cincinnati Zoo & Botanical Garden*



On 13 September 2001, at 11:23 AM, a 72.6-pound hairy Sumatran rhinoceros calf was welcomed into the world at the Cincinnati Zoo & Botanical Garden, igniting a spark of hope for the future of a species. The birth of this healthy rhino calf represents a conservation milestone, a product of the cooperative international effort involving several U.S. zoos and our Malaysian and Indonesian counterparts to save the Sumatran rhino from extinction. Not since 1889 has a Sumatran rhino successfully reproduced in captivity, despite the initiation of a formal captive breeding program in 1984. With only 300 animals estimated to survive in the wild and a mere 15 adults in captivity, Sumatran rhinos are truly a species in crisis: they are one of the most endangered mammals on earth today. Although a single calf will not save a species, this birth has been called "epochal" by Dr. Tom Foose, Program Officer of the International Rhino Foundation (IRF), in part because it is living proof that we finally have unraveled the mysteries of breeding this species in captivity.

For years, the Sumatran rhino has challenged animal managers. Initially, keeping the animals healthy in captivity was difficult because nutritional requirements were poorly understood. After discovering that browse (particularly fresh ficus) needed to be a primary constituent of the diet, the animals remained healthy, but the key to breeding them alluded us. In contrast to other rhino species, Sumatran rhinos do not exhibit behavioral changes when the female is in estrus, and if the animals are paired when the female is not receptive, aggressive interactions leading to physical injury often occur. However, this frustrating challenge for animal managers was also an opportunity to demonstrate a practical and powerful role for reproductive science in conservation efforts.

By 1995, only three of the original seven Sumatran rhinos loaned to the U.S. from the Indonesian government still existed, and they were located in three different zoos. In accordance with Sumatran Rhino SSP recommendations, the Los Angeles and Bronx Zoos sent their female rhinos to the lone male at the Cincinnati Zoo for a final effort to breed this species in North America. The scientific challenge of breeding the Sumatran rhino in captivity developed into a five-year project of the Cincinnati Zoo's Center for Conservation and Research of Endangered Wildlife (CREW).

To evaluate their reproductive status, female rhinos were conditioned to allow rectal ultrasound examinations and blood collection for hormone analysis. It soon became clear that the younger, seven-year-old female, Emi, exhibited some ovarian activity and had a normal reproductive tract. In contrast, the older female had uterine pathology and inactive ovaries, so further research efforts focused on the younger animal. After months of intensive monitoring (and with a bit of luck), we discovered that the female was an induced ovulator—she ovulates only after mating. This finding was surprising because, to our knowledge, the other three studied rhino species ovulate spontaneously at fairly regular intervals regardless of male interaction. This unexpected discovery was the key to developing a safe, reliable captive breeding protocol for Sumatran rhinos.

In September of 1997, Emi became pregnant for the first time following natural mating. The pregnancy was first detect-

ed by ultrasound at 14 days, but to our great disappointment, it was lost by Day 42 of gestation. However, we were optimistic that based on ovarian follicle size and serum progesterone concentrations, we now could successfully and safely predict when to pair the female with the male for breeding, and we were hopeful that the next pregnancy would go to term. Over the next two and a half years, this pair of rhinos mated 20 times producing a total of five pregnancies, but all were lost within the first three months of gestation with no clinical indication as to cause.

In 1999 and 2000, the International Rhino Foundation organized *Sumatran Rhino Master Planning Workshops* in Malaysia and Indonesia. These workshops, which involved scientists, animal managers and wildlife officials, provided a venue for sharing information and making logical recommendations for each captive animal. At the March 2000 meeting, it was decided that the female Sumatran rhino in Cincinnati should be supplemented with a hormone (progesterone) to help support her next pregnancy. When Emi became pregnant for the sixth time, she was prescribed an oral progesterone supplement fed daily from Day 16 to Day 465 of pregnancy. The pregnancy was monitored closely by ultrasound and hormone analysis until the birth of the male calf at 475 days of gestation. The labor was uncomplicated, the calf is strong, and as a first-time mother, Emi has shown exemplary care of her newborn.

The Cincinnati Zoo & Botanical Garden is honored to be a partner in the international effort to save the Sumatran rhino, the flagship species of our institution's Rhino Conservation Signature Project. We are thrilled that the information gained through our scientific research is already being used with similar success at the Sungai Dusun Sumatran Rhino Conservation Centre in Malaysia, home to almost half of the captive Sumatran rhino population. During the last year, four of the five female rhinos at this reserve have bred, most on multiple occasions, and there are high hopes for a pregnancy in the near future. In addition to transferring technology to Malaysian colleagues and helping to evaluate the reproductive status of their rhinos, we are sharing our practical expertise by allowing one of our experienced rhino keepers to work year-round at the reserve. Additionally, through our Zoo's Conservation Fund, support is being provided to the IRF to be used for general operations of the Sungai Dusun reserve. Finally, because in situ protection is critically important for saving rhinos, our Zoo's Conservation Fund is also supplying funds to the IRF to support Rhino Protection Units - a highly successful program that employs local guards to reduce rhino poaching.

The Cincinnati Zoo & Botanical Garden is excited and proud of the birth of this Sumatran rhino calf that stole our hearts the day that it was born. This animal is so much more than just another cute zoo baby - this calf is a celebration of science, of inter-institutional collaboration and international partnerships. It is the culmination of cooperative efforts, and it represents the spirit of the many who have persevered in this effort. It is the first step in a journey of many miles to ensure the survival of this species...but the first step is often the hardest. **G**



This animal is so much more than just another cute zoo baby — this calf is a celebration of science, of inter-institutional collaboration and international partnerships.



Photos: David Jenike, © Cincinnati Zoo