

# CREW ReView

## Of Home Runs and Near Misses

In conservation research, as in baseball, sometimes you hit a home run and sometimes you have near misses. In December of 2009, scientists from CREW and the University of Illinois definitely cleared the fences with the birth of the first sand cats produced through in vitro fertilization (IVF) and embryo transfer in collaborative research at the Al Ain Wildlife Park & Resort (AWPR) in the United Arab Emirates. The transferred embryos were created using oocytes and semen collected from the resident sand cats housed at AWPR. In a follow-up study in June 2010, additional IVF embryos were transferred into three female sand cats at AWPR. Based on an ultrasound exam conducted ~40 days later, pregnancies (with fetal heartbeats) were observed in two of the three females with the births predicted to occur by mid-August. Importantly, these transferred embryos resulted from IVF using frozen semen obtained from two sand cat males housed at the St. Louis Zoo and Cincinnati Zoo & Botanical Garden. These two pregnancies were the first in any wildlife species in which frozen sperm had been transported internationally to connect two regional zoo populations. As the expected date of birth approached, anticipation grew. Unfortunately, no kittens were ever observed, suggesting that both females lost their developing fetuses sometime during the last month of pregnancy. Although the final outcome was disappointing, this 'near-miss' was based on a foundation of sound conservation science. We remain confident that our future embryo transfers will have greater success in producing healthy sand cat kittens. These research efforts are integral to developing global management programs for endangered species, a primary goal of CREW's National Leadership Grant from the federal Institute of Museum and Library Services (IMLS).



Sand cat kittens produced by embryo transfer

## CREW Assists with Javan Rhino Investigation



Javan rhino investigative team (in the rain)

CREW's work with Sumatran and Indian rhinos is broadly known, but recently CREW became involved with the third Asian rhino species, the Javan rhino. Approximately 50 Javan rhinos remain in the world and 90% of these live in Ujung Kulon National Park, Java, Indonesia. For many years, conservationists have kept the Javan rhinos safe from poachers while waiting for the population to grow, but instead of increasing, these forest residents appear to be decreasing in number. Therefore, a large-scale survey was conducted by the Rhino Protection Units in the park using camera traps to document individual rhinos and establish a more accurate population size. Sadly, during that effort, two rhino skeletons were found. Because the dead rhinos appeared to be younger animals and were not poached (their horns were still present), the rangers became concerned that a potential infectious disease outbreak was occurring in the park. In response, CREW scientists

trekked in the rain into the park with the Rhino Protection Units this past April to collect soil samples and conduct some field tests for infectious diseases. Some testing is still pending, but it seems unlikely that the precise cause of the rhinos' demise will be determined. However, we are hoping that our research will at least rule out the likelihood that some of the more lethal infectious diseases were involved.