

CREW Progress Report

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

New Artificial Insemination Technique Proves Promising for CREW's Small Cat Signature Project

A Brazilian ocelot kitten was born on January 22nd, 2011, at Connecticut's Beardsley Zoo following a new laparoscopic oviductal artificial insemination (AI) procedure conducted by CREW scientists. This pregnancy and birth are the first ever in a wild cat species using this new technique. For the AI, the Beardsley Zoo's female ocelot (Kuma) was treated with two hormones to stimulate ovarian follicle growth and ovulation and was inseminated with freshly-collected semen from the Beardsley Zoo's male ocelot (Ozzie). Following hormone treatment, Kuma ovulated three eggs and was inseminated in both oviducts with a total of six million motile spermatozoa. Pregnancy was diagnosed 57 days after AI by monitoring fecal progesterone levels, and a healthy female kitten was born following an 81 day gestation.

Laparoscopy allows visual assessment of the female's ovarian response and deposition of semen into the distal uterus to facilitate sperm transport into the oviducts for fertilization. For the ocelot AI, a new approach was used. Instead of injecting the semen into the uterus, the semen was deposited directly into the oviducts. In comparative studies with domestic cats, CREW scientists had discovered that this more direct approach greatly improved fertility, resulting in ~70% of queens conceiving following insemination with freshly-collected spermatozoa and ~50% conceiving after AI with frozen-thawed spermatozoa. This method typically requires fewer spermatozoa to produce a pregnancy. Therefore, more AIs can be performed using a single ejaculate or semen of poorer quality, such as after cryopreservation.



www.cincinnati-zoo.org

**"Using Science to Learn,
Applying Knowledge to Save,
A Future for Wildlife"**

Because Kuma had been injured as a kitten and lost one of her rear legs as a consequence, she is incapable of breeding naturally with a male and could only become pregnant by AI. As one of only 30 Brazilian ocelots maintained in North American zoos, she is genetically valuable to the captive population, and the Ocelot Species Survival Plan (SSP) requested that CREW scientists attempt this AI procedure. The success of this new AI method may provide conservationists with an invaluable tool for propagating and conserving ocelots and other endangered cat species. *(This project is supported by a grant from the Institute of Museum and Library Services).*



CREW Progress Report



CREW Sponsored Teen Team Chosen as Finalist in National Project Polar Bear Contest

After winning the Cincinnati Zoo & Botanical Garden's regional Project Polar Bear contest, the Care Bears team was chosen as one of just four finalists in the national contest held by Polar Bears International (PBI), the world's leading polar bear conservation group. The Project Polar Bear contest encourages teens to create and carry out projects that reduce carbon emissions. This year the competing teams reduced CO₂ by more than 30 million pounds! Along the way, they raised awareness about the importance of reducing greenhouse gases to help save polar bear habitat and inspired entire communities to reduce their carbon footprint.

The Care Bears Team, comprised of Michael Young, 17, Daniel McKinnon, 17, and Jack Tyndall, 16 of The Seven Hills School in Cincinnati and adult advisor, Craig Young, created a website (www.myactions.org) that promotes simple energy-reducing actions and allows individuals and businesses to track the impact of their actions on reducing CO₂ emissions. Participants from as far away as Hungary and Finland signed up and pledged on the website helping the team attain a total savings of 273,068 lbs. of CO₂ by the project's deadline.

The four finalist teams are from North Carolina, Ohio, Pennsylvania, and Wisconsin. Each team member receives a free trip to San Diego, CA, to enjoy Sea World and the San Diego Zoo and to attend the awards ceremony where the grand prize winner will be announced. The grand prize winning team receives a trip to Churchill, Manitoba, to see polar bears in the wild. (*This program is supported by the Shumaker Family Foundation.*)



Rescuing the Waterdog

The Aquatic Salamander Lab is the newest addition to CREW and was established to support a breeding and research program for one of North America's most endangered salamander species, the Black Warrior waterdog. CREW scientists have been conducting a multi-year mark recapture study of Black Warrior waterdogs in the wild, and recently began testing them for the presence of the infectious fungus, *Batrachochytrium dendrobatidis*, that has decimated amphibian populations worldwide. Establishing a captive assurance population is an important next step in the effort to conserve the Black Warrior waterdog and its genetic diversity. CREW scientists aim to develop novel, captive breeding techniques for this aquatic salamander in order to ensure its long-term survival. (*This project is supported by Ms. Iris de la Motte and the Association of Zoos and Aquariums Conservation Endowment Fund.*)

