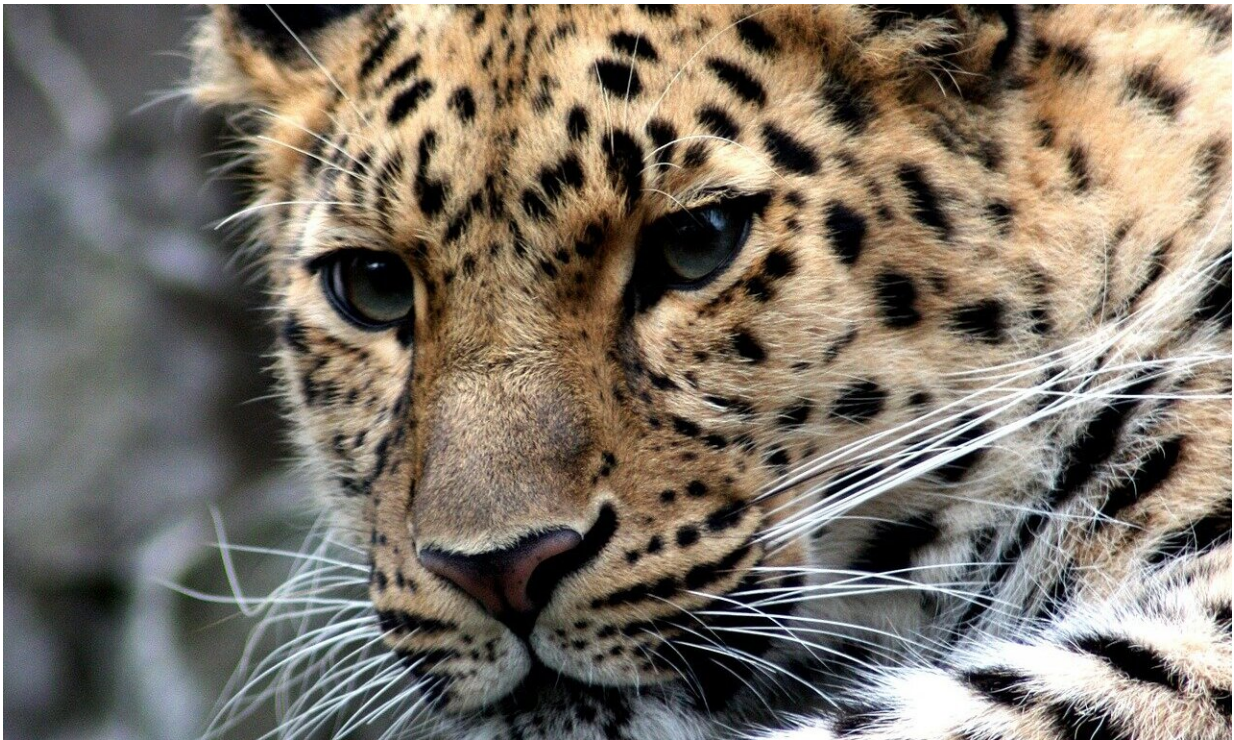


# World's first in vitro cheetah cubs born at Columbus Zoo

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The first cheetah cubs ever conceived through in vitro fertilization have been born at the Columbus Zoo and Aquarium, marking a breakthrough for zoo breeding programs.

The zoo announced the births early Monday. The two cubs, a male and a

female, were born Wednesday night to 3-year-old, first-time mother Isabelle, whom keepers call "Izzy." The cubs are healthy and bonding together in a den behind the scenes of the zoo.

Keepers continue to monitor them with a remote camera. The cubs have been observed nursing.

"To be able to be the first facility to have this success speaks very loudly of our collaboration, our conservation partners, our science and our care here at the Columbus Zoo and Aquarium," Tom Stalf, zoo president and CEO, told The Dispatch. "This is going to impact cheetahs globally. We're very proud."

This was just the third time scientists had attempted a cheetah embryo transfer.

The zoo, with its partners, decided to use the technique to expand the gene pool of cheetahs in human care. The cubs are not Izzy's biological offspring, but instead were conceived using eggs and sperm collected from other cheetahs with more valuable DNA.

The biological mother of the cubs is 6-year-old Kibibi, a Columbus Zoo cheetah that has never reproduced and is too old to easily become naturally pregnant.

Izzy, young enough to breed, has genes that are already well-represented in the captive cheetah population.

The cubs' father is 3-year-old Slash at Fossil Rim Wildlife Center, another accredited facility near Glen Rose, Texas.

Biologists from the Smithsonian National Zoo and Conservation Biology Institute in Front Royal, Virginia, which leads wildlife research projects

worldwide, fertilized the eggs outside the womb in a laboratory. They incubated them and created embryos, which they implanted into both Izzy and her sister, 3-year-old Ophelia, in November.

Adrienne Crosier, a cheetah biologist, and Dr. Pierre Comizzoli, a research biologist, both from the biology institute, performed the procedure, along with the Columbus Zoo's veterinary team.

On Dec. 23, an ultrasound confirmed Izzy was pregnant. Ophelia did not become pregnant.

A cheetah pregnancy typically lasts about three months.

As of Friday, the male cub weighed about 1 pound, and the female weighed 12 ounces. Once fully grown, they'll weigh 80 to 145 pounds.

It's not yet known when the cubs will be in a public exhibit. The zoo's 17 cheetahs reside in its Heart of Africa region, which is closed until it's warm outside, usually in May.

The Columbus Zoo is a member of the Association of Zoos and Aquariums, a nonprofit group of more than 230 accredited institutions in the U.S. and abroad. Association members use a planning process called Species Survival Plans to guide breeding programs by meticulously tracking the genetic history of their animals and recommending the best breeding pairs.

Izzy, Ophelia and Kibibi are three of the Columbus Zoo's "ambassador cheetahs," which typically arrive at the zoo to be raised by hand when their mothers are unable to care for them, said Suzi Rapp, the zoo's vice president of animal programs. As a result, they're accustomed to humans and have formed close bonds with their keepers. The cheetahs are trained to voluntarily allow ultrasounds, X-rays, blood draws and other

medical procedures, so the risks of anesthesia often can be avoided.

"Working with the Columbus Zoo and Aquarium was a game-changer because their females are highly cooperative," Crosier said.

It's common for zoos to explore assisted reproductive technologies, such as artificial insemination and in vitro fertilization, for many species, especially those that have limited numbers or struggle to breed naturally.

Unlike other aging mammals, cheetahs older than 8 still have eggs and hormones in good condition, according to a 2011 study from the Smithsonian Conservation Biology Institute. Their bodies, however, commonly develop various complications that can affect pregnancy, such as abnormal cell growth, infections and cysts in their uterine tracts.

The study predicted the findings would result in breakthroughs with [cheetah](#) in vitro fertilization, but until now, the efforts had no success.

Other large cats, such as lions and tigers, also have struggled with the procedure. One birth of in vitro tigers was reported in 1990.

In 2011, approximately 80% of adult female cheetahs in North American institutions had never reproduced, according to the study. The death rate for cheetahs had exceeded the birth rate in 13 of the previous 16 years.

Attempts to artificially inseminate cheetahs, including in Columbus, are also typically not successful procedures, with the most recent one occurring in 2003.

Cheetahs are known for being the fastest animals on land, capable of running 65 to 75 mph in short bursts. Today, the species is considered vulnerable, with only about 7,500 animals left in the wild, according to

the International Union for the Conservation of Nature.

Cheetahs now inhabit just 10% of their historic ranges of Africa, due to habitat loss, and they face other threats such as conflict with livestock and farmers and unregulated tourism. This geographic separation has left the species genetically "bottlenecked," creating the potential for inbreeding.

The successful birth in Columbus offers the potential to help ensure the survival of cheetahs in their native range.

"With experience, we may be able to freeze embryos and transfer them to Africa," said Dr. Randy Junge, the zoo's vice president of animal health.

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