

# People

controversy



“One hundred species go extinct every day. Here is a tool to help rescue them”

“He’s a renegade,” a colleague said of Lanza (with a rhino skull). “So was Einstein.”

## Send in the Clones

Biologist Robert Lanza has a plan to help endangered species fight extinction

Earlier this year a group of scientists gathered at an Iowa farm to watch a cow give birth by C-section. Hardly a marquee event. But what made this birth worth watching was what emerged: not an ordinary calf but a rare bovine native to the forests of Southeast Asia called a banteng. “The animal was totally still—my heart dropped,” says Dr. Robert Lanza, who was responsible for the spectacle. But within minutes Stockings, as he was called, struggled to stand up—and let out a loud bellow. “We all cheered and applauded.”

Not everyone has been so enthusiastic about the work of

Lanza, 47, a pioneering medical researcher who is using cloning technology to help endangered species like the banteng fend off extinction. Critics have accused him of playing God. But Lanza says they don’t grasp the urgency of his mission. “One hundred [plant and animal] species go extinct every day, and those genes are lost from the planet forever,” he says. “Here is a tool to help rescue them.”

Lanza first raised eyebrows in 2000, when he led a team that used cloning techniques to duplicate a gaur, an oxlike animal from Asia that has been hunted to precariously low

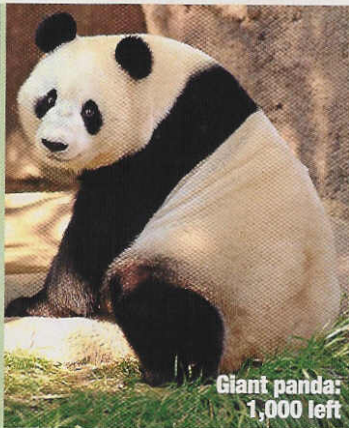
## controversy



South China tiger: 30 left



Bucardo: extinct



Giant panda: 1,000 left

### Cloning Creatures Great and Small

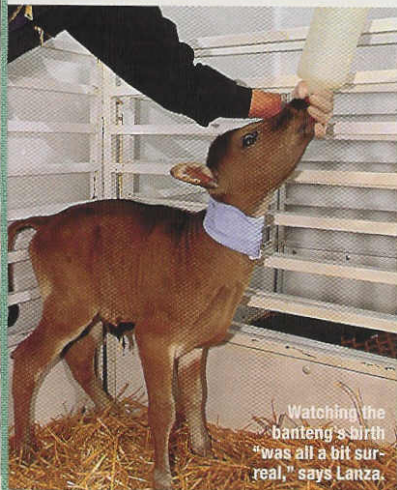
Two main factors help Lanza decide what to clone. "Do we have the technology? And where can we have an impact?" he says. "In my mind it's conservation value rather than what looks cute." That said, he hopes the giant panda (endangered *and* cute) will be next. The bucardo mountain goat became extinct in 2000, but its frozen DNA has been preserved. Another candidate: the South China tiger.

numbers. He started with an egg from a cow, removed its nucleus—which contains the animal's DNA—and replaced it with the genetic material from a single frozen cell taken from a dead gaur. He then used chemicals to mimic sperm and "fertilize" the egg, creating an embryo nearly genetically

identical to the donor gaur, which was then implanted in the cow.

The offspring, named Noah, died from dysentery within days, but the experiment made Lanza confident the process would work. He finally achieved success with the banteng, using DNA provided by the San Diego Zoo, now host of the 310-lb. animal. It will be able to mate with naturally conceived bantengs (fewer than 8,000 survive) so the genetic diversity of the flock will be increased.

His detractors say Lanza's work misses the point. "As science, cloning is fascinating, but as conservation, it's a complete farce," says Karen Baragona of the World Wildlife Fund in Washington, D.C. "Cloning one banteng does nothing for its habitat and the wildlife that shares it." Dr. Kent Redford of the Wildlife Conservation Society agrees that it's ineffective: "The perception is that we don't have to worry about what we're doing now—we'll just make new ones." Maybe so. But Lanza persists. "For some of these species," he says, "there are only a few left. A few extra can make a substantial difference."



Watching the banteng's birth "was all a bit surreal," says Lanza.

Lanza looked out for other creatures even as a child in Stoughton, Mass. "In the backyard he kept a rooster whose leg he'd fixed," says sister Christine Blanchette, 45. Just two of his four siblings completed high school. But, encouraged by a science teacher, Barbara O'Donnell, Lanza went on to earn biology and medical degrees from the University of Pennsylvania, working along the way under some of the great thinkers of the last century, including Jonas Salk, creator of the polio vaccine, and heart-transplant pioneer Christiaan Barnard. "He's a go-getter," says colleague Dr. David Cooper of Harvard Medical School. "He sees the opportunities and takes them with both hands."

Now working for Advanced Cell Technology, a Worcester, Mass., cloning and stem-cell-research firm, Lanza does human stem-cell research by day and works on endangered species pro bono. A bachelor, he shares a century-old house on a 10-acre nature preserve in nearby Clinton with such specimens as an 800-lb. *Brachiosaurus* fossil, while outside, hawks and swans live in his yard. "He's delightfully unique," says O'Donnell. "But in spite of his brilliance, he's not on cloud nine."

So what's next? A real-life Jurassic Park? Lanza has no such plans and says it would be impossible to replicate a creature from a fossil. "You can't clone from stone," he says. He is also against cloning pets—"People who think they're getting Fluffy back are in for a surprise"—and humans. "About 25 percent of cloned animals develop problems," says Lanza. "Cloning humans would be like sending a baby into space and knowing the rocket will blow up 25 percent of the time."

He is, however, encouraging zoos worldwide to freeze genetic material from endangered animals. Next up? Perhaps pandas. "We're the ones who are causing these extinctions," he says. "We have the responsibility to undo the damage as best we can."

- Thomas Fields-Meyer
- Debbie Seaman in Clinton