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De-Extinction: Can Cloning Bring Extinct Species Back to Life?

By John R. Platt | March 6, 2013

At some point in the next decade, if advances in biotechnology continue on their current path, clones of extinct species such as the passenger pigeon, Tasmanian tiger and wooly mammoth could once again live among us. But cloning lost species—or "de-extinction" as some scientists call it—presents us with myriad ethical, legal and regulatory questions that must be answered, such as which (if any) species should be brought back and whether or not such creatures could be allowed to return to the wild. Such questions are set to be addressed March 15

A museum specimen of an extinct passenger pigeon

at TEDx DeExtinction, a day-long event in Washington, D.C., organized by Stewart Brand's Revive & Restore project. Brand previewed the topics for discussion last week at the TED2013 conference in Long Beach, Calif.

Scientists are actively working on methods and procedures for bringing extinct species back to life, says Ryan Phelan, executive director of Revive & Restore and co-organizer of the TEDx event. "The technology is moving fast. What Stewart and I are trying to do with this meeting is for the first time to allow the public to start thinking about this. We're going to hear from people who take it quite seriously. De-extinction is going to happen, and the questions are how does it get applied, when does it get used, what are the criteria which are going to be set?"

Cloning extinct species has been tried before—with moderate success. An extinct Pyrenean ibex, or *bucardo*, (*Capra pyrenaica pyrenaica*) was born to a surrogate mother goat in 2009, nine years after the last member of its species was killed by a falling tree. The cloned animal lived for just seven minutes. Revive & Restore itself has launched a project to try to resurrect the passenger pigeon, which went extinct in 1914.

Revive & Restore has already held two private workshops for geneticists and others involved in cloning and conservation to share information on current de-extinction projects, techniques and ethics. The upcoming TEDx gathering will be the first public event to widely discuss the same topics. Like all projects organized by Brand's Long Now Foundation, transparency is a central issue for Revive & Restore (after all, Brand is the man who famously said, "information wants to be free"). "For our organization, the idea of being able to provide this information or the exposure of these ideas, it's just a way of starting the dialogue," Phelan says.

Although next week's meeting will mostly focus on resurrecting lost species, Phelan says the same cloning technologies also have a lot of potential to help species that are currently endangered. "I think we're going to be able to apply these technologies to species on the brink," she says. "To me, that's why I'm most excited about this. How are these technologies going to be used to help improve genetic bottlenecks and things like that?"

Of course, conservation budgets around the world are already strained, and most endangered species do not have any direct conservation funding devoted to them. Wouldn't focusing on cloning technology take away from those scarce conservation funds? "My knee-jerk reaction to that is simply that it should not be either-or, but that it should be an 'and' question," Phelan says. "I don't think

there's a certain amount of dollars that can only be spent for helping animals on the brink. I think that these things are additive, and that the challenge is ensuring that conservationists and others that are involved in wildlife are aware of these technologies and can move in directions where they can apply them."

Speakers at TEDx DeExtinction will include George Church, professor of genetics at Harvard Medical School; Hank Greely, director of the Center for Law and the Biosciences at Stanford Law School; and Oliver Ryder, director of genetics at the San Diego Zoo Institute for Conservation and Research. Tickets are available for the live event, which will also be Webcast for free.

What do you think? Should scientists try to clone and resurrect extinct species? Is it worth the cost or the effort? Do you want to see wooly mammoths walk on Earth again or watch flocks of passenger pigeons black out the sky? Are you encouraged by these technologies' potential to keep critically endangered species such as the northern white rhino from going extinct? Please let us know in the comments.

*Photo: An extinct passenger pigeon (*Ectopistes migratorius*) by Gary Palmer via Flickr. Used under Creative Commons license*
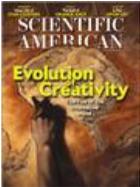
About the Author: Twice a week, John Platt shines a light on endangered species from all over the globe, exploring not just why they are dying out but also what's being done to rescue them from oblivion. Follow on Twitter @johnrplatt.

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