

There's No 'Undo' Button for Extinct Species

By Brooke Jarvis, *The New York Times*, May 7th, 2025

“Over 10,000 years ago, a howl was lost to time.” So begins a recent promotional video by Colossal Biosciences. The video introduces viewers to Romulus and Remus, “the first two dire wolves since the Pleistocene era.”

Colossal brands itself “the de-extinction company” and has announced plans to bring back some of the biggest stars in the species extermination hall of fame. On a planet with as many as one million species at risk of disappearing, many within decades, the company is promising an undo button. Many media outlets breathlessly promoted Colossal’s story. Amid the relentlessly grim news about the state of our planet, here was a tale of pure inspiration, of futuristic science triumphing over the tragic losses of a mythic past. De-extinction is a distinctly modern fantasy: the extremely appealing idea that we can, with just some pipettes and computers, undo the destruction we continue to cause the natural world.

Dire wolves thrived in the Americas for more than 200,000 years, adeptly filling so many ecological niches that their remains have been found from Alaska to Peru. They are understood to have been hunters of the many large mammals that populated the Americas before the arrival of humans dramatically changed the continents’ ecology. They then disappeared alongside their prey, among the earliest victims of what would become an ongoing crisis of human-driven extinction.

Romulus and Remus began life as gray-wolf cells that were edited, grown into embryos and implanted in the wombs of surrogate dog mothers. The edits, which consisted of 20 modifications on 14 genes were based on comparisons between gray-wolf genomes and those reconstructed from dire-wolf DNA found in ancient tooth and bone fragments. The resulting animals were larger and fluffier and lighter in color than other gray wolves.

The scientists who specialize in canids for the International Union for Conservation of Nature declared that “the three animals produced by Colossal are not dire wolves.” For one thing, they said, there is no way to know if these wolves actually resemble animals no one has seen for 12,000 years. For another, pure physicality ignores the ecology and behavior and culture of the original dire wolf — the very things that made it one.

Reproducing the dire-wolf genome would be very different from reproducing a world in which a vanished creature might thrive. It’s also different from reproducing all the ways in which those creatures once affected their environment.

Extinction is not a phenomenon of the mythic past. It’s an active and ongoing crisis, one that’s making our world less resilient and more impoverished. By providing the appearance of an escape clause, so-called de-extinction could undermine not just the few protections that endangered species have but also the idea that we need to make any changes at all.

The day Colossal released its promo video, Doug Burgum, the Trump administration’s secretary of the interior, wrote a long post on X celebrating the news as the first step in ending protections for endangered species. In the future, populations would never really be at risk of disappearance, no matter how diminished their presence. And if they did vanish? Well, we would just bring a few of them back, Burgum told Department of Interior employees during a town hall: “Pick your favorite species,” he said, “and call up Colossal.”