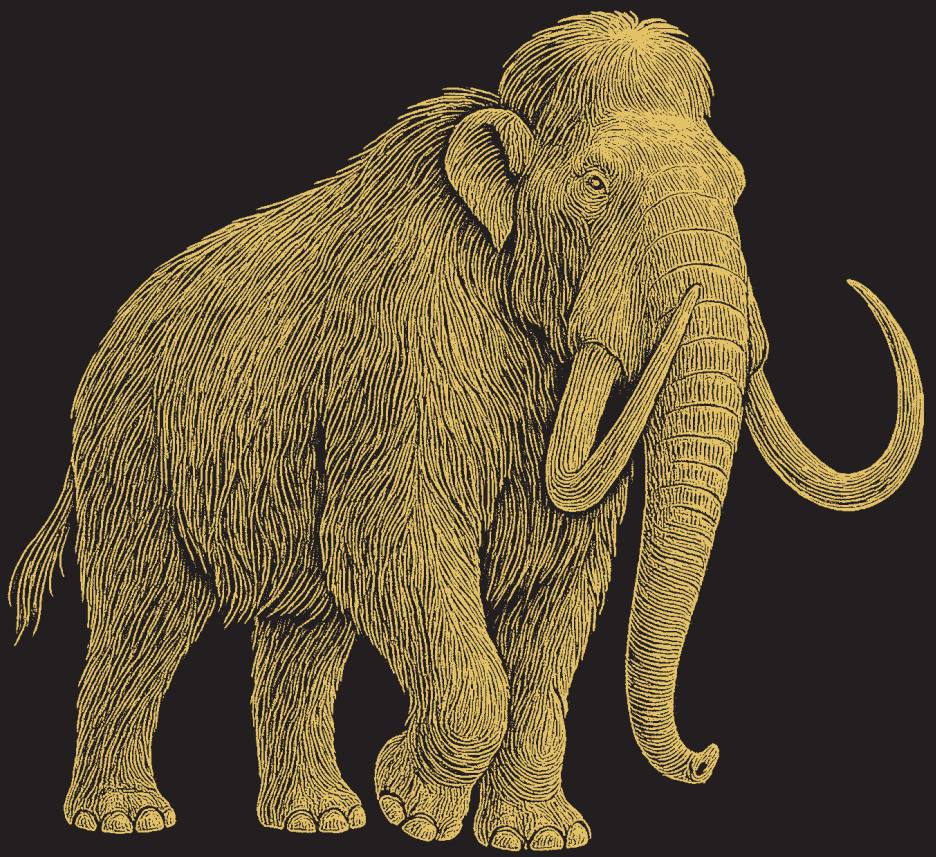

Mammuthus primigenius

12

Lucy Cooke

Reviving extinct animals

January 2000, Ordesa National Park, Spain. It is heavily snowing. Celia, the very last Pyrenean ibex, is seeking shelter under a pine tree.

But unfortunately, the pine tree gets covered in snow, and it falls down, and it crushes Celia. She's the very last Pyrenean ibex, and she's now dead. She was 13 years old. It was an unlucky year for Celia, and unlucky for her species.

Fortunately, the year before, scientists had caught Celia, extracted cells from her ear, and put them in liquid nitrogen. And even though in 2000 Celia died, her DNA was still preserved and she could be reanimated.

Scientists took Celia's DNA and put it into a developing cell of a closely related ibex species, took the nucleus out of the cell, which contains all of Celia's cell tissue, and then put that inside a closely related ibex species. They waited for those embryos to develop, and then implanted it inside a surrogate ibex in order to give birth. 500 cloned embryos were produced. 154 were implanted into female goats, which were the surrogates. Only five of those surrogates actually became pregnant, and only one managed to give birth.

On July 30, 2003, a very special ibex was born by c-section in a Spanish research facility. She had wobbly legs, toffee-colored fur, and dark doe eyes, and she was a genetic clone of Celia. The Pyrenean ibex had been raised from the dead, and it was the first species to be de-extincted. Everybody was in awe. Unfortunately, the cloned ibex had a severe fall and survived for only seven minutes.

It was unfortunate because it meant that the Pyrenean ibex made history for becoming the first animal to be de-extincted, and the first animal to go extinct twice. The technology of de-extinction is here and it's very real.

Another close call, this time with a rather remarkable amphibian—a specimen of the gastric-brooding frog. It doesn't incubate its eggs in a pond, like most frogs do. Instead, when the eggs are