Genetics Writing Assignment #4

A few days ago, I was scrolling through TikTok and saw a story about how a company called Colossal Biosciences was able to “bring back” an extinct species of wolf using CRISPR technology. I have very strong opinions on the subject of genetic modification and cloning and was not sure if the story was true, so I did some research on the topic. It turns out that this was in fact true, and this company was able to genetically modify embryos with CRISPR technology and in a way “bring back” and extinct species of wolf.

One of the articles I found on the story is from The Virginian-Pilot titled “Using ancient DNA, scientists genetically engineer wolves akin to the extinct dire wolf.” The article, written by Christina Larson, published on April 8, 2025, reports how the company Colossal Biosciences claims that they have brough the extinct dire wolf species back through CRISPR technology (Larson, 2025). Larson discusses how the company was able to extract DNA from a tooth and skull fragments from private collections (Larson, 2025). They were able to take this knowledge of the DNA and used CRISPR technology to alter the DNA of grey wolf DNA and implant it into embryos from a domestic dog, and then later transfer the embryos into surrogate domestic dogs (Larson, 2025). The pups were born 62 days later (Larson, 2025), and the story was reported to the press on April 8, 2025. However, Larson states that even though these pups are dire wolves, they will not likely gain the abilities of their predecessors, as they do not have mature adults of their species to teach them how to hunt large prey as they did before they went extinct (Larson, 2025). Larson goes on to discuss how the use of CRISPR technology could be used to greatly help the conservation of endangered species, such as the red wolf (Larson, 2025).

As I have done research on CRISPR technology and its possible use to “bring back” extinct species before, I do believe that this information is accurate. I have done research on how CRISPR technology could be used in the conservation of species, in “designer babies,” and food production. To put it short, it is entirely possible. Is it ethical, well that is an entire other complicated discussion, but I digress. CRISPR technology, which stands for clustered regularly interspaced palindromic repeats (Orozco, 2025), is used in gene editing by removing and inserting desired DNA sequences in the genome in order to produce desired traits (Baugh, 2025). These modifications can be used to make an individual more resistant to disease, or correct genetic defects (Baugh, 2025). CRISPR technology has been used before to “bring back” the wolly mouse in March of 2025 by the same company of Colossal Biosciences (Ghosh, 2025). Colossal Biosciences was accused of lying about their creations, but they stood firm and stated that this was a massive step in being able to genetically engineer elephants to withstand colder temperatures and ensure their survive in a changing environment (Ghosh, 2025). This technology is thought to be a massive step forward in the conservation of species in the wild, not just bringing back extinct species. In her article How CRISPR is Changing the Future of Wildlife Conservation, Trizzy Orozco states that this technology could be used to improve genetic diversity in species by changing genetic traits inherited from inbreeding in small gene pools, reducing the populations of invasive species by editing the genes that are required for reproduction, combatting diseases in species by making them more resistant to certain diseases such as chytrid fungus that is deadly to amphibian species (Orozco, 2025). If CRISPR technology is used correctly and carefully, it could be very helpful in ensuring the survival of wildlife and helping to protect the environment.

I have done my own research on the use of CRISPR technology on both human and animal embryos and plant DNA, and I written multiple papers on the subject, including the ethics of the use of CRISPR technology, so I have my own opinion on it. I am a big fan of Jurassic Park, so this may be where my interest started and be an influence on my opinion on the matter. To put it short, I do not like CRISPR technology. In my personal opinion, it gives too much power and allows humans to play God, in a sense. Though yes, genetic cloning and CRISPR technology are not likely to lead to genetically enhanced dinosaurs hunting and killing humans, I still think that this technology is too much power for scientist to wield over life. I also not think that enough thought is put into what the effects on the ecosystem will be. Sure, that species is now back in the wild, but what will happen once they fit themselves into the food chain? Will one species be able to survive, but cause another to go extinct? Or will the species die off as they did before, whether from a lack of food source, or new predators, or not enough habitat for everyone? There is too much at stake with the environment as is, we do not need to add another factor into the equation. In conclusion, yes, this process is possible, however, it must be used with caution.

References

Baugh, L. S. (2025, April 9). CRISPR. *Britannica*. <https://www.britannica.com/technology/CRISPR>

Ghosh, P. (2025, March 4). Wolly mice designed to engineer mammoth-like elephants. *BBC*. <https://www.bbc.com/news/articles/c0jg4n776evo>

Larson, C. (2025, April 8). Using ancient DNA, scientists genetically engineer wolves akin to the extinct dire wolf. *The Virginian-Pilot*

Orozco, T. (2025, January 29). How CRISPR is Changing the Future of Wildlife Conservation. *discoverwildscience.com*. <https://discoverwildscience.com/how-crispr-is-changing-the-future-of-wildlife-conservation-1-265012/#google_vignette>