Legal Implications of Bringing Extinct Animals into the Modern Era

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Woolly mammoths existed long before humans had created laws and regulations about how animals should be treated and the ways in which they need to be protected, but when they start to roam the Earth again, humans will need to figure out how these creatures will fit into our complex legal structures. New laws will need to be enacted to regulate de-extinction. The current policies regarding endangered animals do not adequately protect de-extinct living modified organisms. A party or committee needs to be created to protect the environments that de-extinct animals are released into. By creating these regulations, the negative effects of de-extinction on animals will be lessened.

This paper specifically will focus on the laws and governmental entities in the United States of America. The state of de-extinction laws and regulations in other countries will be used as examples to help illustrate how some of these policies have worked in practice. For the purposes of this paper, a de-extinct animal will be assumed to have genetically modified DNA. The terms Living Modified Organism and Genetically Modified Organism will be used to describe any creature that is living and has modified genetic material.

The actions that scientists take to affect the environment are already regulated, and as Lamely (2022) points out, "it's increasingly apparent that de-extinction projects require a legal framework. Currently it's unclear whether the patchwork of laws in various countries on genome editing, animal use, and other topics amount to much regulation of de-extinction at all." De-extinciton is a complex topic, and there need to be clear legal limits to ensure that surrounding environments are not negatively affected. This legislation will also need to set limits on how living animals, especially endangered ones, can be used in de-extinction projects.

Lamely goes on to point out that it will be wisest for the regulation of de-extinction to be left to the government instead of private companies. Having de-extinction regulated by the government instead of relying on private companies to self-regulate may reduce the risk profits being prioritized over the things that are best for the environment. An example where a company may place their profit goals over the well-being of a living species is with the woolly mammoth de-extinction by Colossal. Ord (2025) states that the plan of Colossal is to use an Asian Elephant for genetic material and use an African Elephant as the surrogate parent for de-extinction of woolly mammoths. Both of these species are endangered. It is important for there to be legislation that regulates how Colossal can use these endangered species.

"There are currently no laws designed to ensure that de-extinction is carried out in an environmentally responsible way"(Lamely 2022). He points out that de-extinction of any animal on the list of endangered species may be subject to the regulations put forth by the Endangered Species Act. There is some precedence for this to be the case. Corey (2021) wrote that researchers had to gain a permit to repopulate an area with Black Footed Ferrets. This permit was issued by the United States Fish and Wildlife Service to Revive & Restore. Revive & Restore is a nonprofit organization aimed at rescuing endangered and extinct species (n.d.).The permit was to research cloning techniques and methods of genetic modification that can be used to create inheritable resistance from a plague (as cited in Corey, 2021). This example gives precedence that companies seeking to de-extinct or restore animals on an endangered species list will have to work with existing governmental entities.

Corey (2021) wrote that when the Black Footed Ferret was cloned, it used a surrogate mother of a non-endangered ferret. There is still concern about whether it would be ethical to use

an endangered animal as a surrogate mother for a de-extinct animal. Complications associated with surrogacy, including health issues during the gestational period and issues with the birth, could have adverse consequences on a surrogate mother. This problem is amplified when one considers the risk of threatening the life of an endangered surrogate mother to potentially create more members of that species. With so many risks and rewards to consider, it is important to have an organization, created and monitored by the government, to regulate what species are considered a good fit for de-extinction.

Sathyarajan, S., & Kuriakose, S. (2022) write that, “there is no single international mechanism to regulate de-extinction projects as a whole.” This is something that is important because de-extinction, and the environmental effects of it, are international topics.The original plan of Colossal was to create a wooly mammoth in the United States and release it into Siberia Lamely (2022). This is an example of international connection in de-extinction because the creature would be created in one jurisdiction, then transplanted into another. Because the Earth and its ecosystems are so interconnected, there are global climate effects that need to be considered.

Babcock H. M. (2019) further continues to point out that without an international framework to oversee genetic modification or de-extinction of animals, “overlapping and mismatched regulatory jurisdictions … will create oversight gaps” (as cited in Babcock H. M. 2019). There is the potential for legal loopholes to be exploited if there is not consistent legislation between collaborating parties. There are some organizations that benefit from lapses in the regulations of de-extinction and, “have a vested interest in maintaining a low level of

regulation" (as cited in Babcock H.M.) Maintaining a low level of regulation allows companies to self-regulate, which may result in exploitation of living animals and ecosystems.

Currently the most important agreement on de-extinction is the Convention on Biological Diversity regime. Reynolds J. L. (2021) describes this as a, "multilateral agreement for conservationist synthetic biology."Reynolds J. L. (2021) goes on to say that this framework is agreed upon by the vast majority of countries, with the United States as the major exception. This agreement obligates the participating parties to share important information regarding biotechnology to other countries, promote research on biodiversity, and to minimize the risks associated with reintroducing de-extinct animals into environments, along with other obligations (as cited inReynolds J. L. 2021). This convention does not cover all concerns related to de-extinction. It is about how conservation and biotechnology work together. This makes it partially applicable to de-extinction, but leaves some cases unclear. The United States has not agreed to this convention, and therefore the United States is not obligated to follow the agreements of the convention.

Currently, the biggest arguments against increasing the regulation of de-extinction are that any proposed legislation will take too long to pass or that it is already too late to impose legislation because so much work has already been done. Babcock H. M. (2019) notes that, "any effort to adjust these [existing environmental laws] through amendments will likely fail." There are also those who benefit from having less regulation, whether they want to have easier access to the use of endangered species or they want to be able to continue with de-extinction without concern about environmental effects. However late legislation comes, de-extinction is not going away any time soon. Even though some legislation may be passed after living modified

organisms are roaming the Earth, it is better to have legislation put in place to prevent harm from occurring during future de-extinction experiments.

Legislation that bridges the gap between the existing framework and groups to help regulate de-extinction efforts needs to be created as soon as possible to ensure that de-extinction technology is used responsibly. This legislation needs to be internationally implemented to have a noticeable effect on the actions of biotechnology companies that are researching and promoting de-extinction. This legislation should still be passed, even if it is not completely ratified by the time de-extinct species roam the Earth. When writing this legislation, special consideration needs to be given to the animals and environments that will be affected by living modified organisms, and oversight committees will need to be made to supervise the rollout of these creatures. Because science is advancing rapidly and de-extinction is becoming more of a reality each day, laws need to be written and ratified as soon as possible to ensure this technology is used ethically.

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