

# One Step Back, Two Steps Forward: Reversing the Anthropocene



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## Introduction

Our era is currently on a nearly unstoppable course to the demise of our planet, the key component in all of this being that this end is “nearly” unstoppable. The Anthropocene, an era of significant human activity responsible for the changes made to the Earth.

Even with humans on the forefront, some would say that the Anthropocene is the introduction of a downfall to humanity. Fairly enough, as many may know, we have had a great deal of issues caused by human activity that has harmed the Earth’s ability to be self-sustaining. Even our trees, acting as carbon stores to reduce emissions, are cut down in great amounts. One ecosystem that remains fairly true to its natural roots through this is Northern Siberia, which is still at risk of dying out due to human activity

The solution: an opportunity to observe and practice. The Pleistocene, our last glaciation period characterized with stretched of land covered by frost. Also known for many megafauna that walked the Earth at the time, such as the famous mammoth. The area that matches the description best is Northern Siberia (see figure 1) which can be saved from the clutches of global warming more likely than other areas. This is why scientist Sergey Zimov (see figure 2) has been working since 1989 to produce ‘Pleistocene Park’, the re-introduction of Pleistocene megafauna!

## The How and Why

Zimov has intentions of recreating this past environment in a slower, step-by-step manner. Obviously the sudden introduction of mammoths would prove inefficient. The plan includes starting off with primary consumers. Grasses that now fill the area require high nutrient intake, drying up the soil. Bringing in larger numbers of competitive herbivores, eventually reaching bison that will be brought in from Canada, will eliminate the grasses. Then we can think about introducing carnivores to watch over those populations, such as the very few Siberian tigers left. Only then will any sort of megafauna be brought in with clear success.

As for why this is being done, the better question would be why not? Our Earth is in danger in a way no one could expect, so now we need unexpected solutions to match. By observing the significance of the role of great herbivores, we gain knowledge on how to improve upon situations of global warming in other areas. On top of this, little backlash is expected to be seen, even in the worst case scenario, nothing compares to the disparity of our current global circumstances we deal with.

## Proof and Discussion



Figure 1: Northeast Siberia, the location of Pleistocene Park

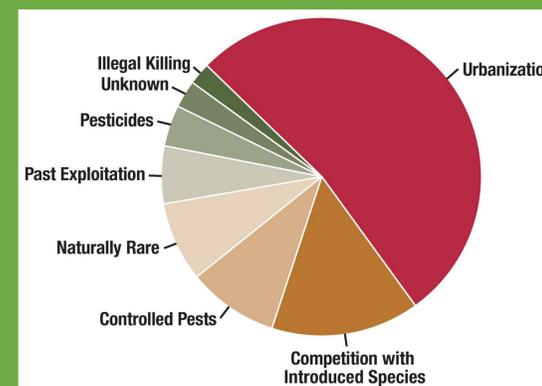


Figure 2: Sergey A. Zimov is a Russian geophysicist specializing in arctic environments. He pioneered the Pleistocene Park project in Siberia and founded it in 1996.

To first rid of any doubts regarding the efficiency of this experiment, some factual information must be presented. Some think that the current climate of Siberia will not be able to house the animals being introduced. The main cause of death in the already extinct and endangered species is direct influence from humans, such as urbanization (see figure 3). Even climate would be an issue due to human activity, it being very unlikely that natural causes will cause spikes in death rate. Some argue that if we are to rid of flora capable of storing large amounts of carbon that we defeat the purpose of the experiment. As of right now, approximately 500 gigatons of carbon is stored within the permafrost layer of these ecosystems, all of it combined adding up to more carbon emissions than any of the world’s rainforests.

Reconstructing past environments is not new or unheard of as far as scientific projects go, however some argue that the re-introduction of mammoths is more outrageous and non-beneficial than we acknowledge. Claims from the articles regarding biological conservation explain how going back to the Pleistocene harms our current environments and negatively affects businesses for hunting, selling, farming, and many other animal-related activities. However, this is not the case. Reintroducing animals that would be native to the environment adds on to the biodiversity pool that we lack today. Megafauna and megaflore introduction would develop these areas more and give us the potential to revive environments killed off by urbanization.

Figure 3: This graph shows the greatest causes of endangerment in animals. The website entails that animals are not endangered from legal hunting, but poaching etc. does contribute to it.



## Conclusions

Ultimately, by restoring a Pleistocene-like ecosystem with the appropriate flora and fauna, diverse and densely growing, can halt the possible secretion of microbes leading to carbon dioxide gases accelerating the greenhouse effect. The eventual presence of large herbivores means that most vegetation is grazed and most snow is trampled, leading to the ground becoming cooler and decreasing the chances of ice melting. The Pleistocene environment is also known for reflecting rays of sunlight skyward as opposed to absorbing it, ridding of further heating of the Earth. In the wintertime, the temperature will be much colder than it is now to combat further melting of the area’s ice, stopping the increase in water and eventually sea level.

All of this halts us from having any carbon escape that will be impossible to store again once gone. This is our first goal, stopping anything from getting worse. Once we are at a comfortable standstill, efforts will be made to increase the boundaries of the Pleistocene Park area for further success and bring us to the opportunity of truly reversing the effects of global warming.



## References

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