

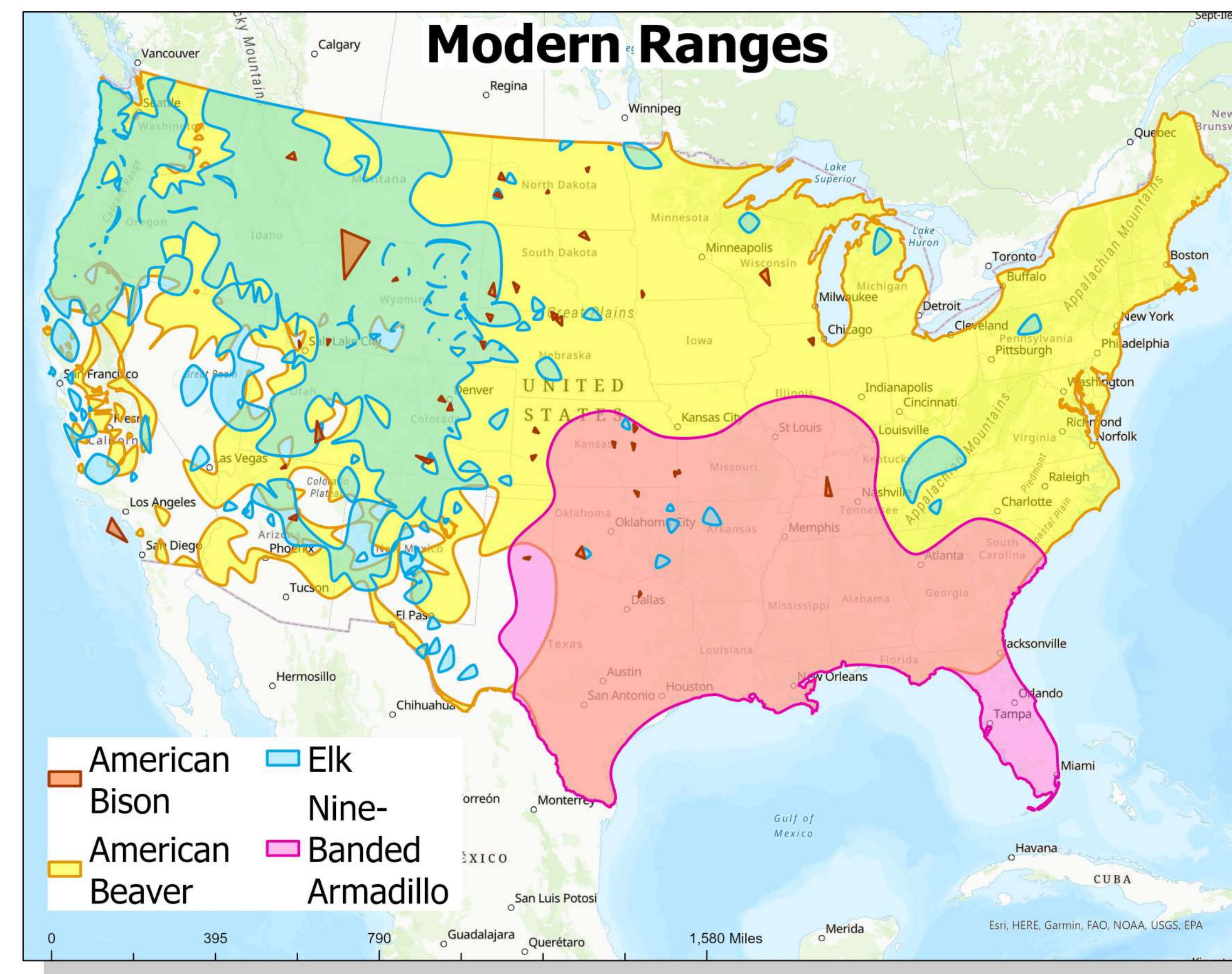
DIFFERENCES IN RANGE BETWEEN LATE PLEISTOCENE MEGAFAUNA AND THEIR LIVING RELATIVES

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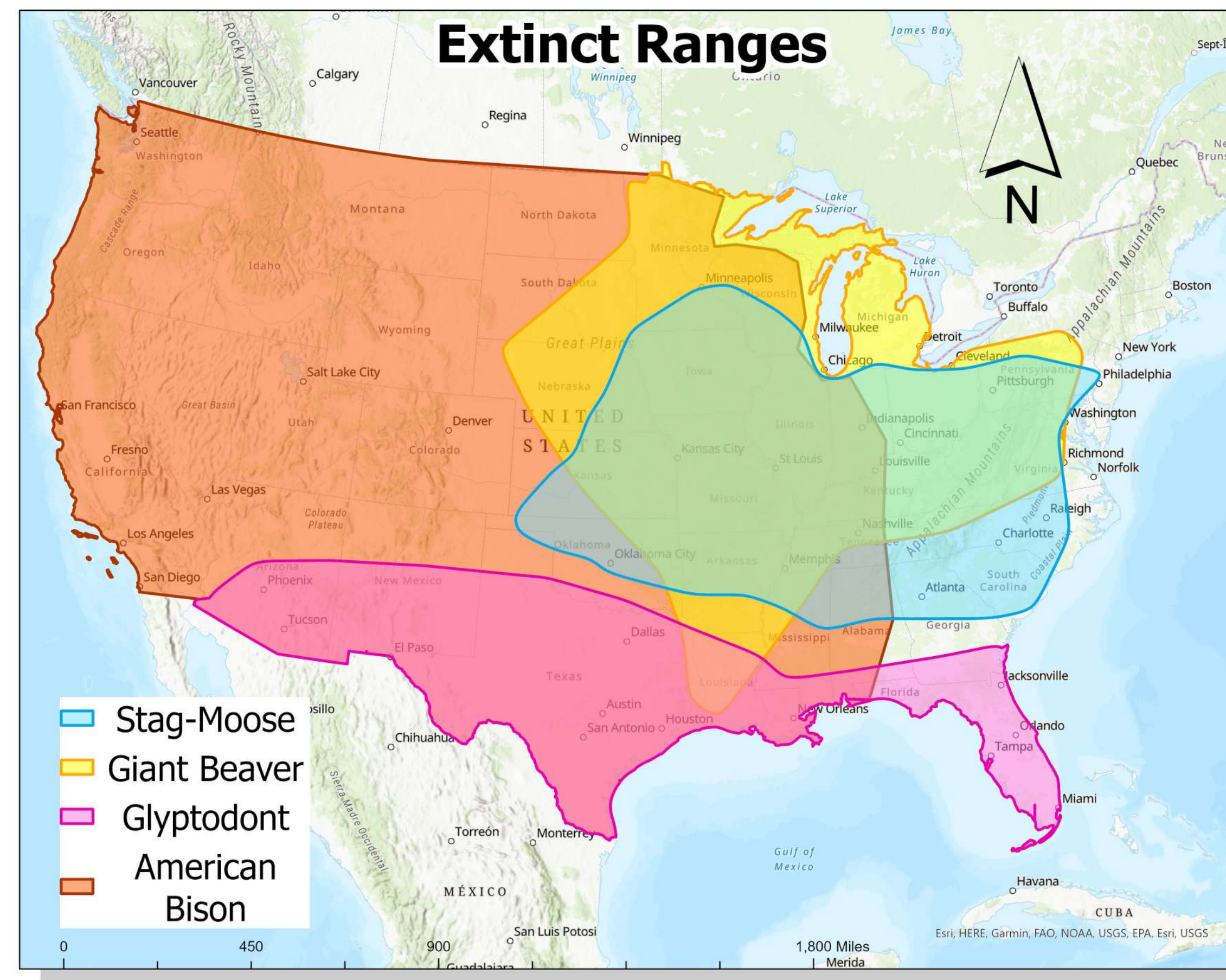
Introduction and Objectives

The majority of the world's megafauna died out during the Quaternary extinction event. This occurred during the LGP (Last Glacial Period) in the late Pleistocene, roughly 11,000 years BP (Before Present). In North America, 83% of megafauna species went extinct. This map showcases the ancient territories of four different prey megafauna lost at the end of the LGP and compares these ranges with those of their modern relatives. It provides a visual on how territories have changed, as well as the size difference between the extinct vs modern species, in order to continue the discussion on the cause of this extinction now that we are at a time of similar climate change and human activity.



Results and Conclusion

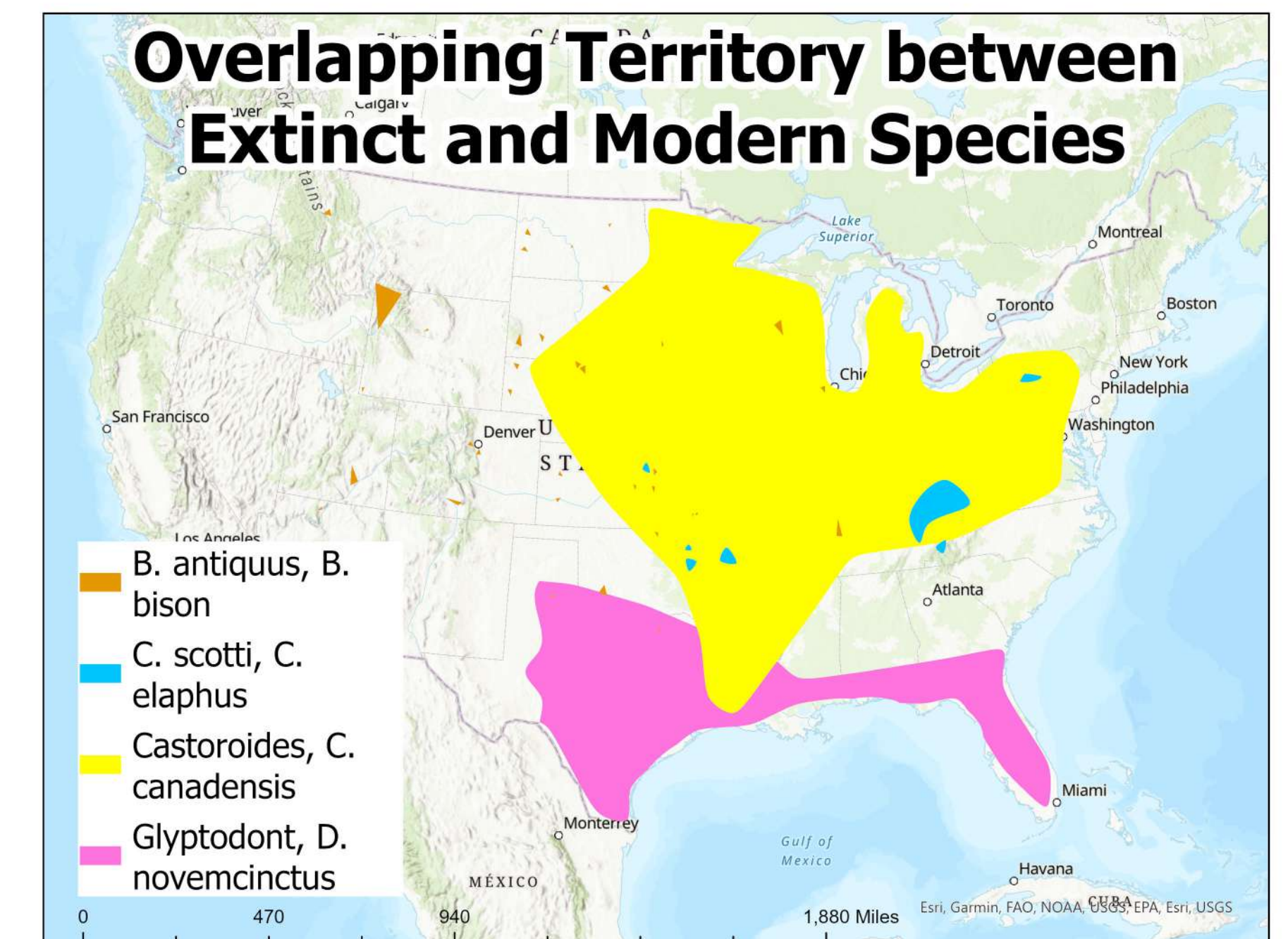
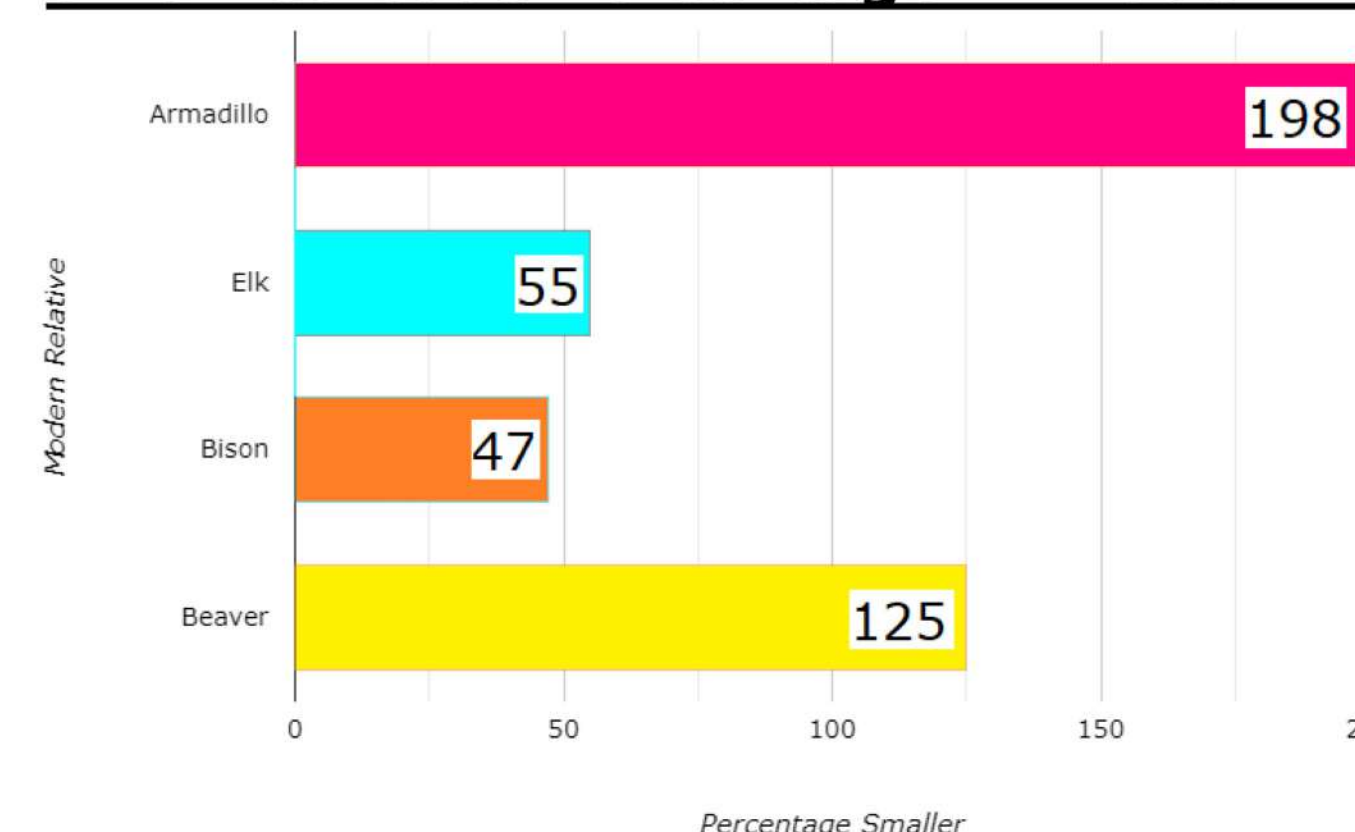
These maps show that many of the ranges have shifted significantly, furthermore, the modern relatives that are the smallest compared to their extinct relatives share more of the extinct range as compared to those whose modern relatives are also megafauna (100+ lbs). However, these maps don't show the ranges post-LGP but pre-colonization, which severely impacted the ranges of many megafauna, notably the American Bison. Yet they are still useful tools in analyzing the migration of species post-LGP and considering not only the cause of the Quaternary extinction, but how the ecological landscape of current America changed afterwards.



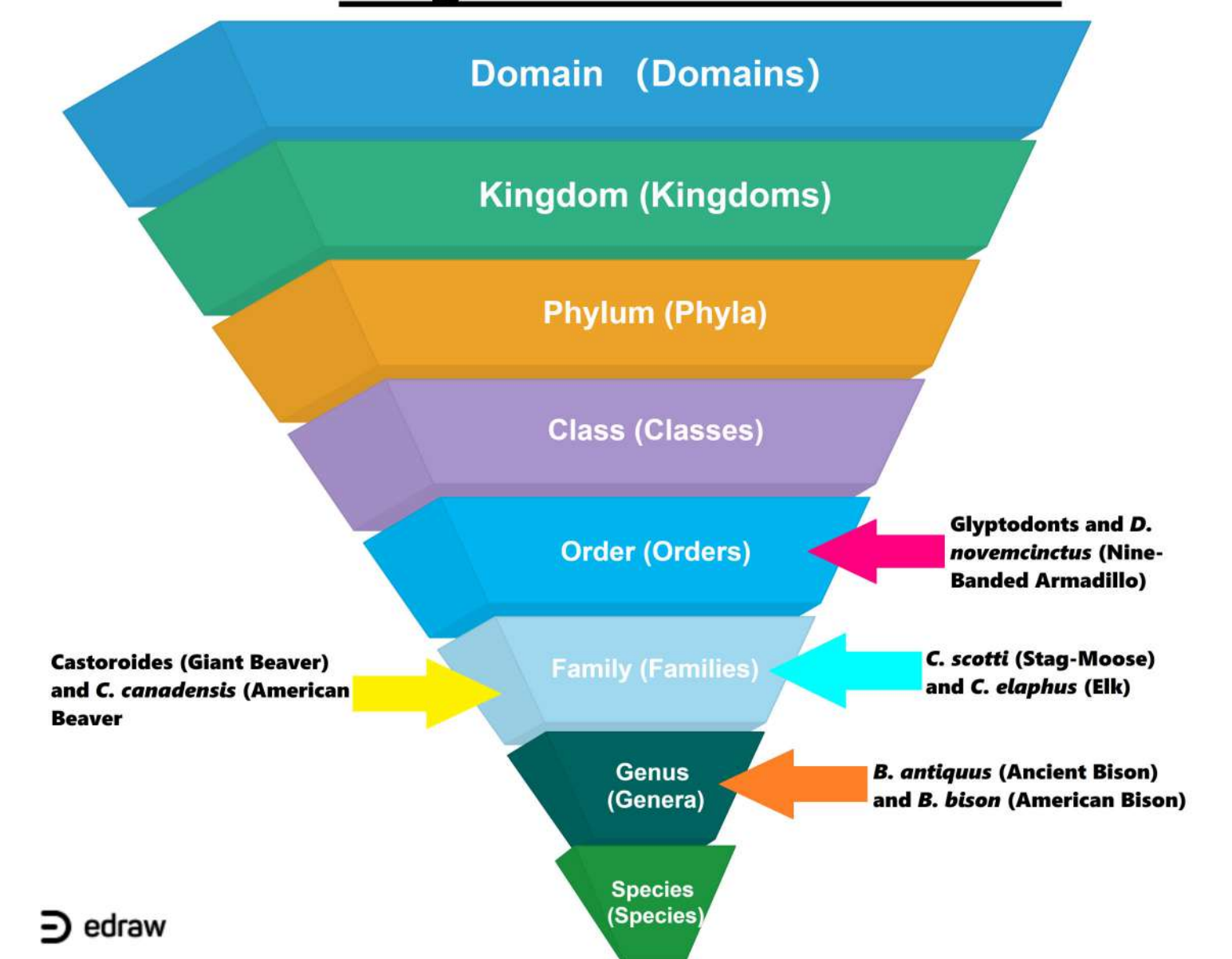
Data and Methods

Data for the modern ranges was obtained from USGS. The extinct ranges were independently researched and then created in ArcGIS. First, 'XY Table to Point' was used to input the coordinates of several sites or known habitat locations. Then, polygons were created in new feature classes to map the general range. 'Generalize' was used on all range polygons to generalize and simplify the shapes to create a more optimistic range. 'Overlay' was used to create the map comparing ranges, and finally 'Clip' was used to align the ranges within the continental United States.

Size Decrease Percentage in Modern Relative



Taxonomic Level of Relation between Megafauna and Relative



Bibliography

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