

# THE ANTHROPOCENE'S ANIMAL: COHABITATION WITH COYOTES IN MASSACHUSETTS



## EVOLUTION AT IT'S FINEST

Human-mediated range expansion of coyote populations have occurred at a national scale. *Canis latrans* now occupies in every state in the contiguous United States. Coyote expansion supplants the historical ranges of grey wolves and is reflective of anthropogenic landscape changes. Reports of human-coyote conflicts have been on the rise while many scientists and policy makers have tried to initiate management plans that would reduce conflict. About a century ago, coyotes were not present in the northeast. During their northern range expansion, coyotes from the west hybridized with grey wolves from the Great Lakes region and southern Canada. This hybridization event resulted in a

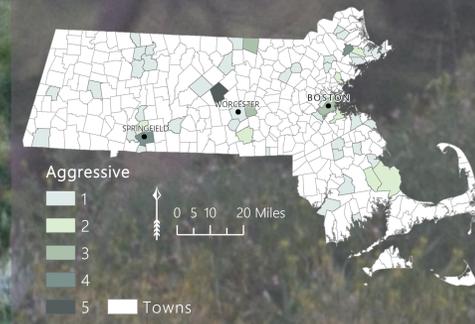
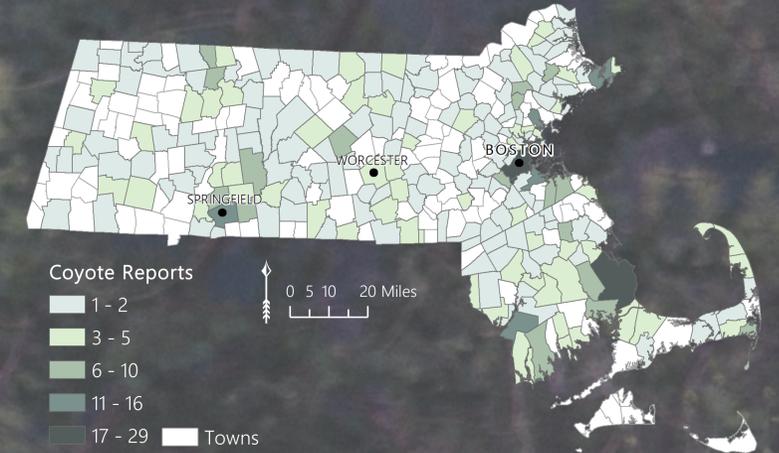


morphologically distinct northeastern subspecies characterized by larger over all body size and a differed craniodental phenotype. In addition to their range expansion and hybridization, their ability to thrive in large, densely populated cities has allowed them to fill a predatory niche in urban environments. Complementary to the increase in nationwide coyote population, urban expansion has simultaneously been erupting. Eastern coyotes are the epitome of an anthropogenically influenced evolution. Consistent to national trends, policy makers and wildlife officials in Massachusetts have been faced with increasing human-coyote conflict reports. Human-coyote coexistence hinges on an informed understanding of our shared environment and potential interaction.

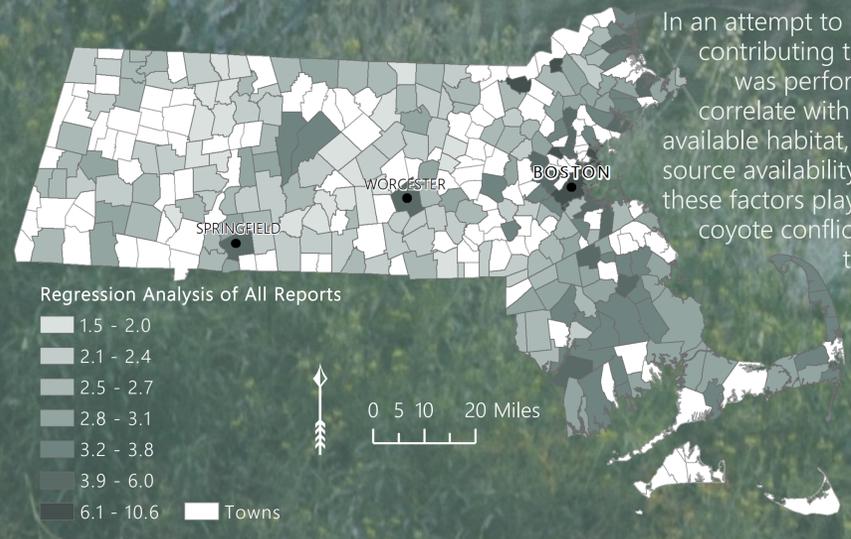


## HUMAN - COYOTE CONFLICT

The data used to determine presence of human-coyote conflict in Massachusetts was collected by the Massachusetts Environmental Police through phone calls from Massachusetts residents throughout the state. The reports span from 2013-2016 and vary in nature on a spectrum of aggressive conflict reports to reports of sightings, hunting, and questions regarding coyote activity. Because this data was collected by the Massachusetts environmental police department, there a many possible limitations to the accuracy of the data that could be explored.

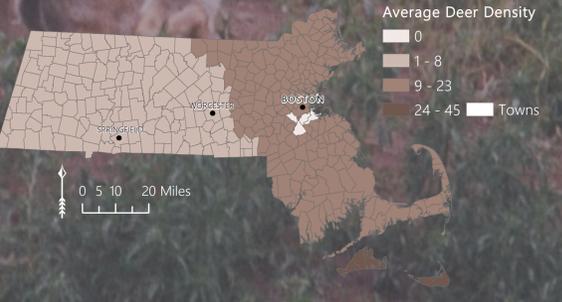
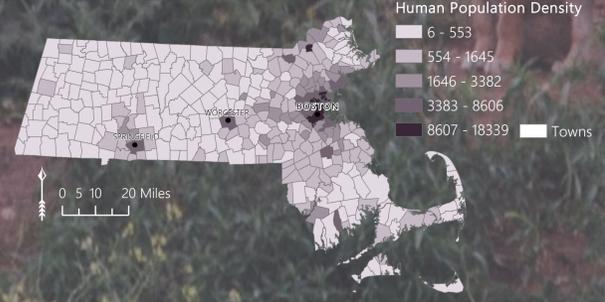
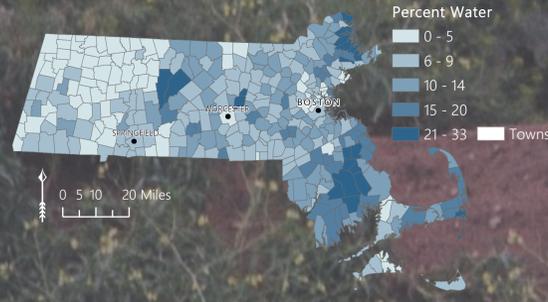
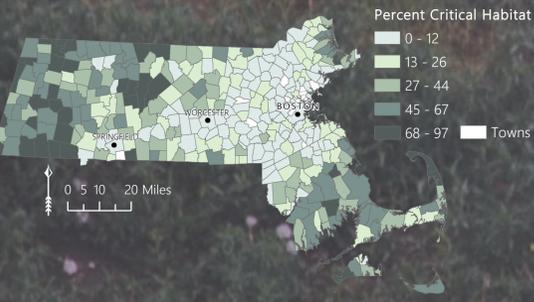


## REGRESSION ANALYSIS



In an attempt to understand the environmental and ecological factors contributing to reports of human-coyote conflict, a regression analysis was performed using factors that have previously been known to correlate with human-coyote conflict. These include presence of available habitat, presence of water, human population density, and food source availability. Although the scientific literature has suggested that these factors play a role in presence of coyotes and potential for human-coyote conflict, none of the parameters revealed significant correlation to conflict reports. These negative results suggest that presence of human-coyote conflict does not rely on specific ecological and environmental factors.

## PROPOSED DETERMINANT FACTORS



**REBEKAH SMITH**  
GIS FOR CONSERVATION MEDICINE

Projection: NAD 1983, State Plane, Massachusetts Mainland  
Data Sources: Mass GIS, US Census, USDA, Massachusetts Fish and Wildlife, ESRI

Thank you to Carolyn Talmadge for her guidance, support, and infectious passion, Miren Schleicher for always finding a solution, and to Dave Wattles for providing me with the environmental police data

