



# Shooting Over State Lines

## A Spatial Analysis of Gun Crime and Access in Chicago in 2018

### INTRODUCTION

Chicago, Illinois has some of the highest rates of gun violence in the country. Violent crime rates rose dramatically in 2016 with over 760 homicides (a 42% increase over the previous year). These results may be surprising given the strict regulations on guns in Illinois. The City of Chicago also imposes additional gun control laws and regulations.

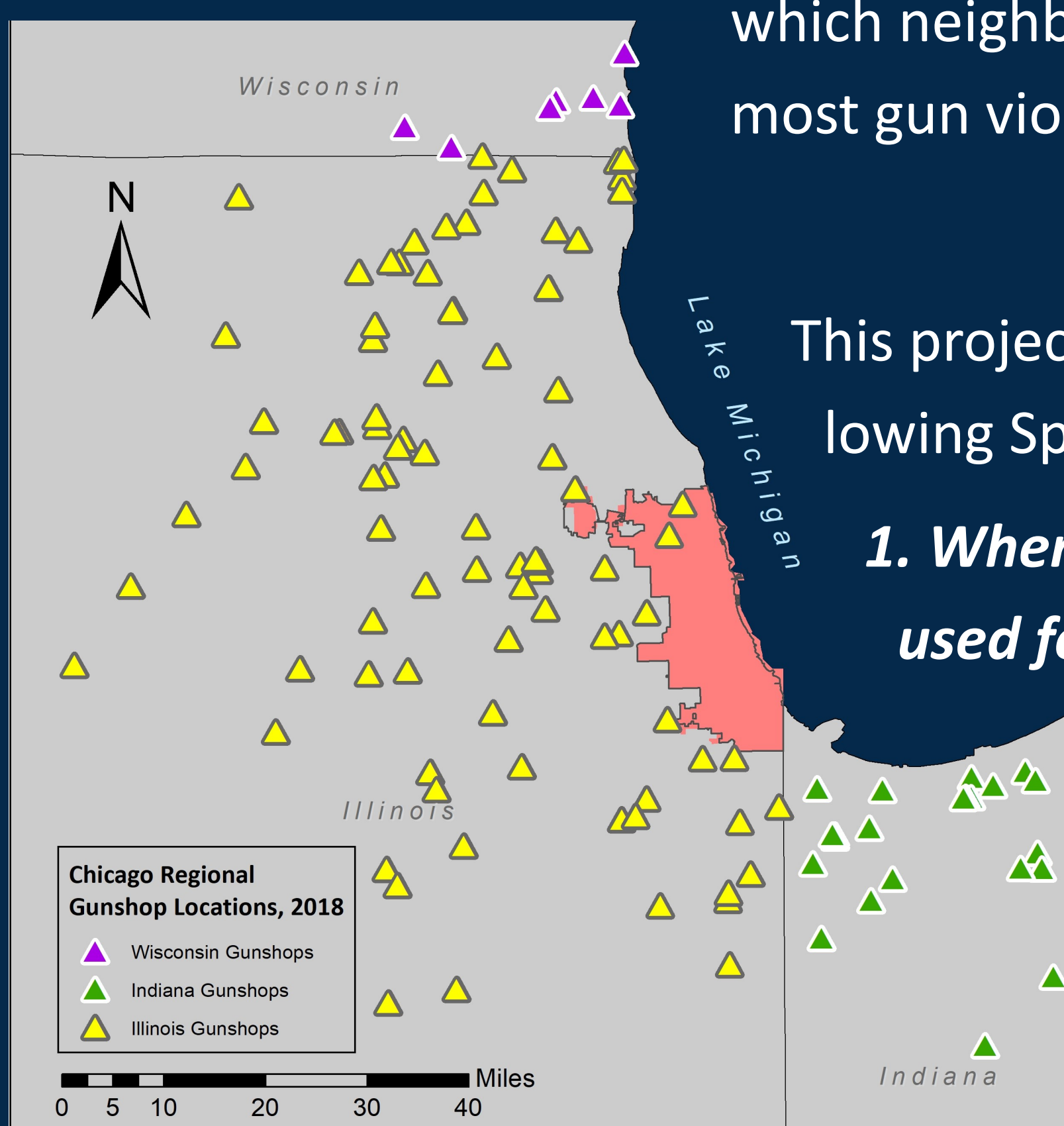


Political pundits who support laxer gun laws frequently cite Chicago as an example of why gun control and regulation does not work. However, this is only half the story. Chicago is located in the northeast corner of Illinois in close proximity to Wisconsin and Indiana, two states with fewer regulations on gun control. The city's 2017 Gun Trace Report reveals only 40% of illegally possessed firearms come from dealers in Illinois—the remaining 60% infiltrate from surrounding states. This project considers the impact that Chicago's proximity to surrounding states with looser gun control laws has on the city's residents' access to guns. Spatial analysis also reveals

which neighborhoods have the most gun violence.

This project will address the following Spatial Questions:

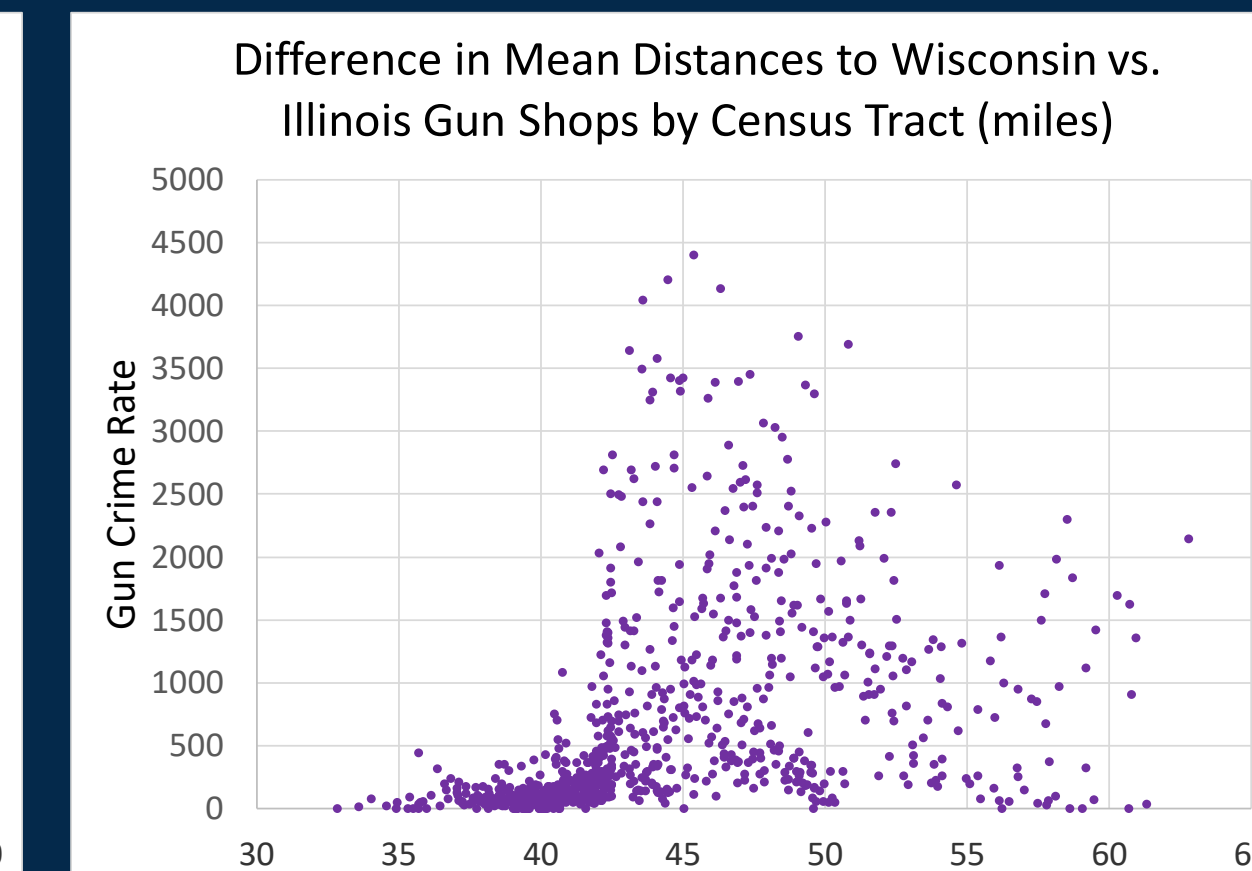
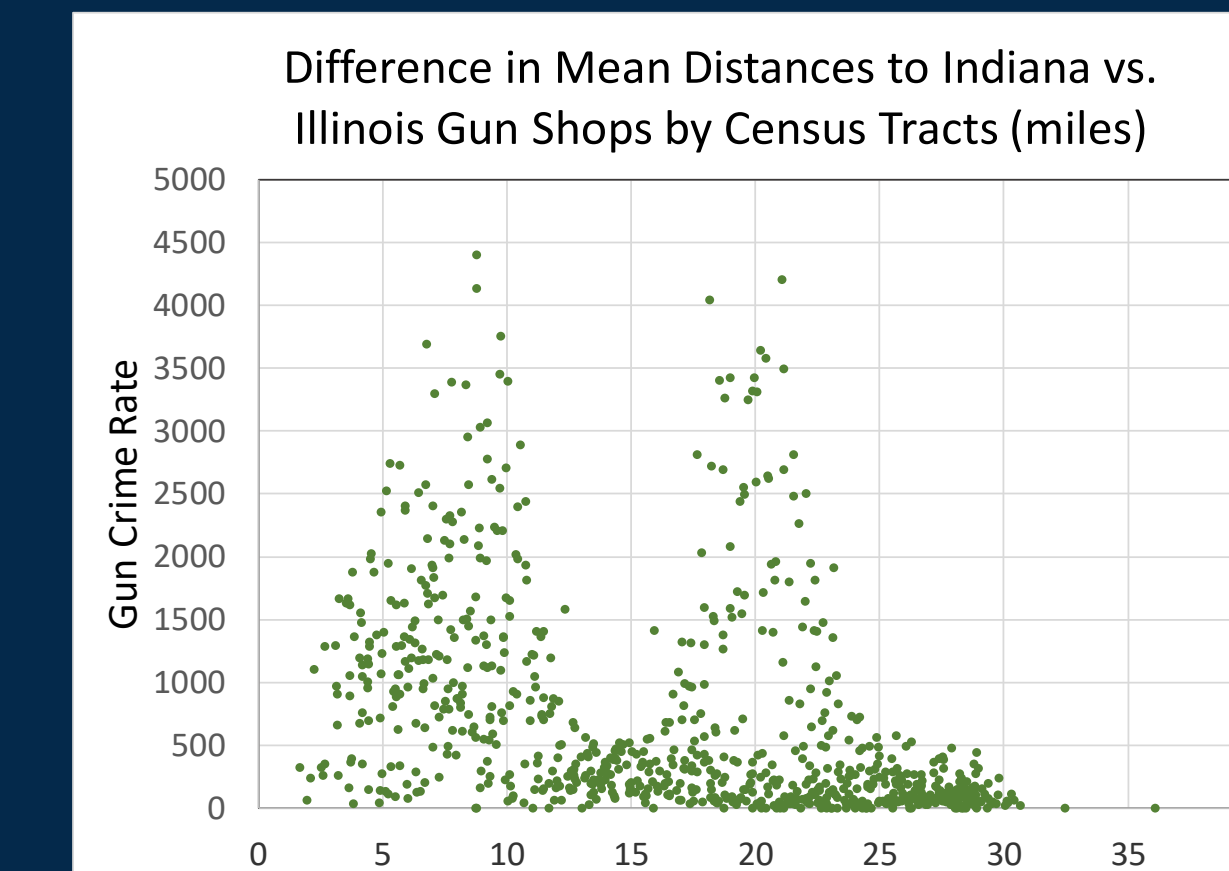
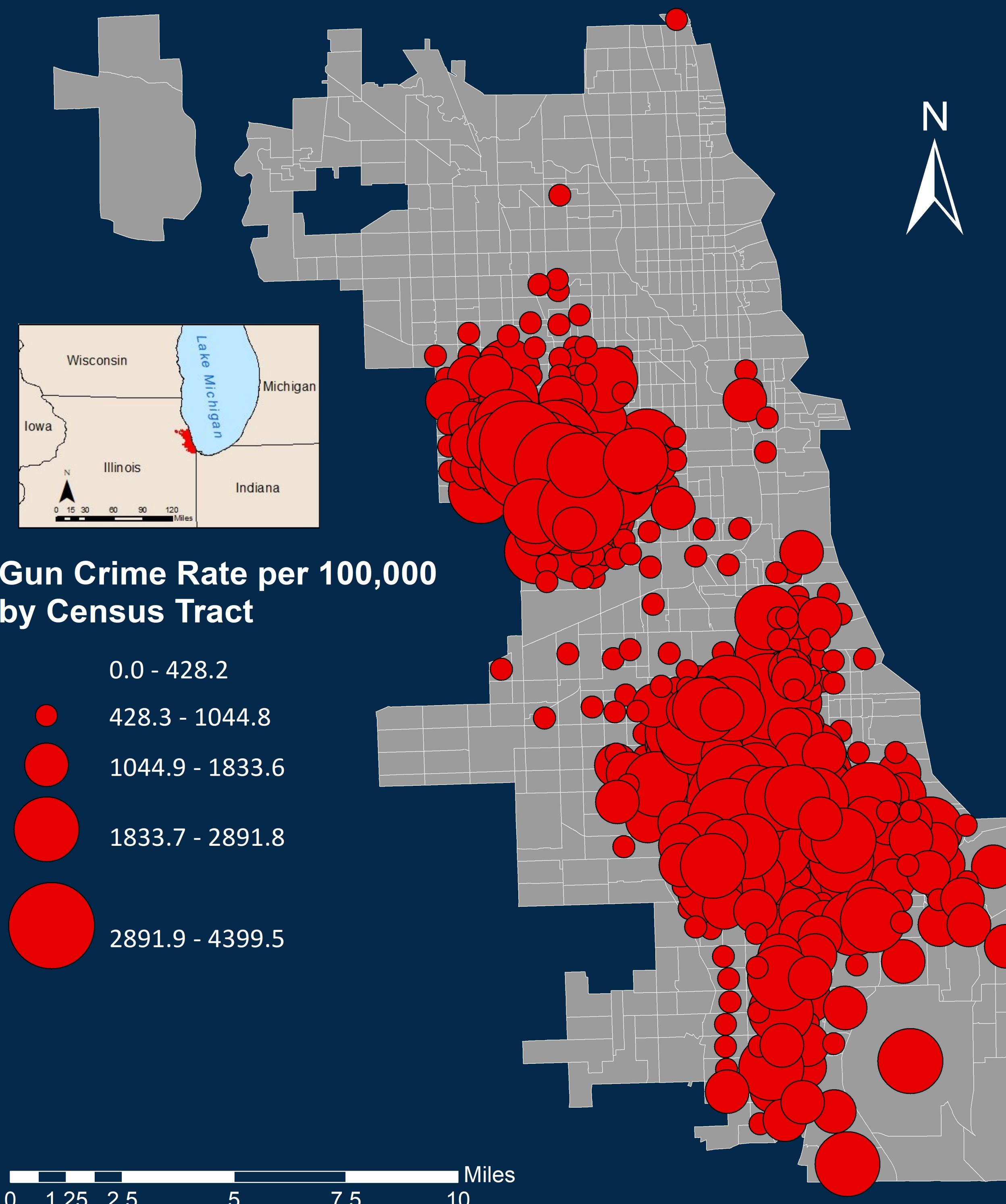
1. *Where are guns being used for crime in Chicago?*
2. *How accessible are gun shops from within the city limits?*



### METHODOLOGY

Using real-time Chicago police crime data, this analysis maps arrests for crimes that involved guns to calculate a temporally-relevant gun crime rate by census tract. Gun crime counts were normalized by the population of each census tract and multiplied by 100,000 to calculate a standardized crime rate. Next, a proximity analysis was conducted using the Euclidean distance tool to calculate the distance of each census tract to

#### ★ ★ ★ ★ Gun Crime Rate in Chicago ★ ★ ★ ★ March 2019—March 2020



the nearest gun shop in Illinois, Indiana, and Wisconsin. The zonal statistics tool summarized and averaged the distance measures. This allowed for the observation and graphing of the differences in nearest distance to gun shops across states.

### FINDINGS & LIMITATIONS

Interestingly, there are only two gun shops within the city limits of Chicago. This suggests that the guns used in gun crimes across the city are being brought in from elsewhere.

It is interesting to find that the average census tract is only a few miles farther from an out-of-state gun shop than from an in-state gun shop. However, there does not appear to be a correlation between census tract proximity to gun shops and gun crime.

| Mean Difference in Distance |            |
|-----------------------------|------------|
| IL vs. WI                   | IL vs. IN  |
| 44.5 miles                  | 17.0 miles |

### CONCLUSION

There is not enough evidence to establish any sort of correlation or causality between proximity to a gun shop and higher gun crime rates. However, it is clear that from anywhere within Chicago one is within close proximity to gun shops both within and beyond Illinois state borders. Ease of access to laxer gun restrictions most likely undercuts Chicago's and Illinois' attempts at stricter gun regulation.

Cartographer: Annalise Burnett

Date: 5 May 2020

Projection: NAD\_1983\_StatePlane\_Illinois  
\_East\_FIPS\_1201\_Feet

Sources: ESRI, United States Census Bureau, Census Reporter, Chicago CLEAR, ReferenceUSA, Flaticon, Freepik

