Final Project Proposal

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Our project will focus on studying the effects that the natural indicators **temperature** and **tree cover** have on the crime rates of select U.S. states. It is hypothesized that crime rates increase with warmer temperatures. Tree cover, however, sees expert opinions differ on its relationship with crime, which makes it a variable we wish to explore.

Using data from this website ([shorturl.at/hpKY9](http://shorturl.at/hpKY9)), which is the US government’s crime data tracker, we will analyze crime statistics from certain states to see if there is an impact on crime from temperature. There have been papers published linking warmer temperatures to an increase in crimes. We would like to see if we can replicate those results in various states in the US with diverse geographies and climates. There has also been some research suggesting an increase in green spaces can reduce crime which can also be analyzed using this dataset. Our two crimes we’re tracking are murder (violent crime) and larceny-theft (nonviolent crime). We also have reliable climate and temperature information from this data set (<https://www.ncdc.noaa.gov/climate-information/statistical-weather-and-climate-information>)

that we can use to try to find correlations and patterns.

We picked eight states, one in each “corner” of the United States: Maine and Vermont from the Northeast, Washington and Oregon from the Northwest, Arkansas and Virginia from the Southeast, and New Mexico and Arizona from the Southwest. We chose neighboring states from each region specifically so we could compare the statistics and eliminate more confounding variables. In particular, Maine was selected due to its almost 90% tree cover, while New Mexico and Arizona were selected for the opposite reason, in order to give comparison results.

Questions:

1. Do rates of violent and non-violent crime increase in warmer states?
2. Can we reasonably predict the number of criminal cases in a state based on temperature and climate data?
3. What impact do outlier months (abnormally warm or cold months based on 50 year average) have on crime rates?
4. Do states that report more forest cover experience lower crime rates?
5. As temperatures continue to increase due to anthropogenic climate change, does our data predict that we can expect a rise in crime rates?

Links to Datasets

<https://www.ucrdatatool.gov/Search/Crime/State/RunCrimeStatebyState.cfm>(crime data tracker)

<https://www.ncdc.noaa.gov/climate-information/statistical-weather-and-climate-information>