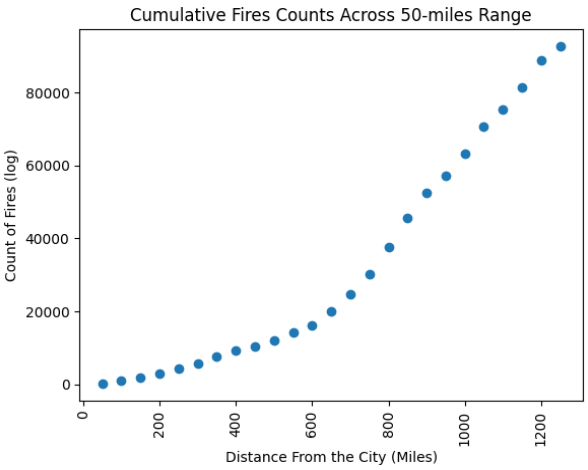
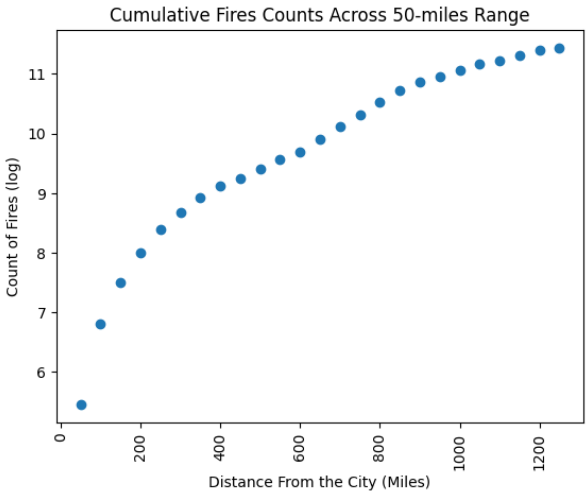
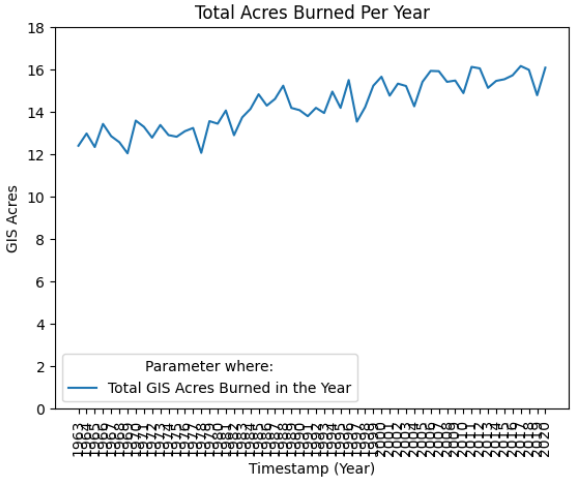
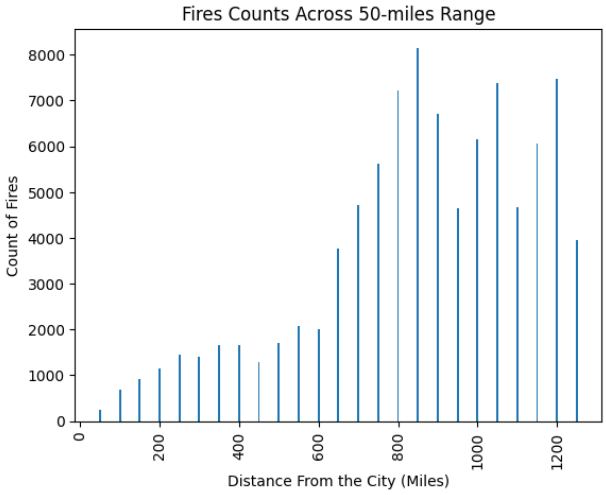
Reflection





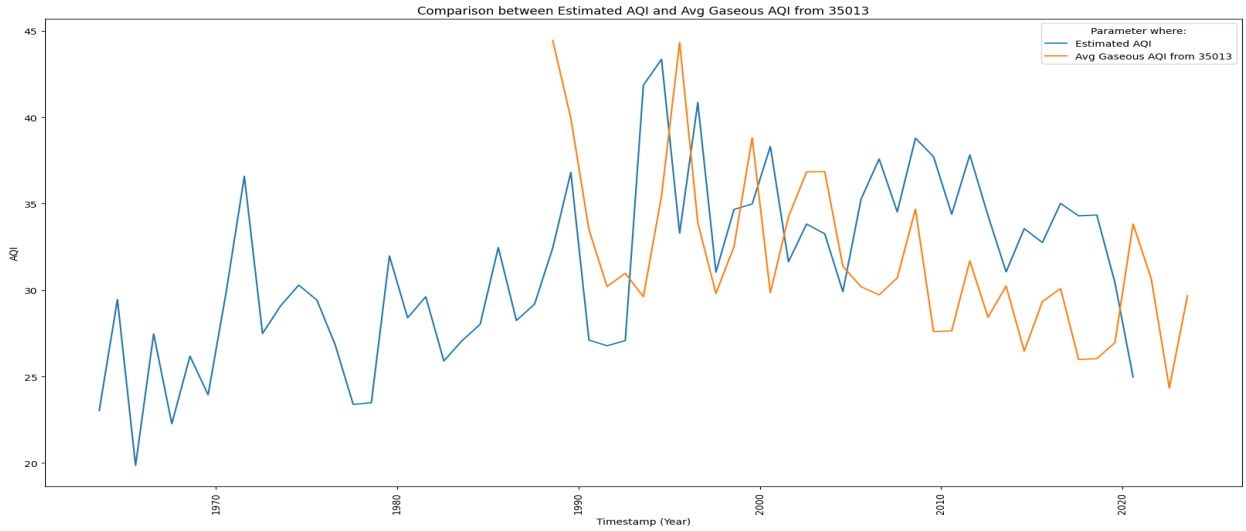




Three graphs above represent the counts of fires across every 50 miles from the center of the city and one is about the acres of land burned per year. Top left is the cumulative of fires up till 1250 miles away and the top right takes the log of the cumulative. Bottom right represents the counts of fire within each 50-mile radial distance range. At last, bottom left is the sum of acres burned by wildfires in each year.

The graphs below are about the AQI and the estimated AQI using distance and acres burned. The estimator is created to be the comparison of GIS_Acres and average distance. To put them on the same scale, acres are transformed into length and are divided by distance.

After having an estimator from the data and comparing those to the AQI obtained from 35013, trying to make predictions of the AQI in the future years, the estimator is put into a time series model. In order to provide as much information to the model, instead of simply taking the average of each year, specific fire start dates are extracted from the dataset. But to better see the trends of AQI, we use the yearly average below.



Below we have the prediction from the model using the daily data from the original dataset. In order to compare the predicted results against AQI data, we first use data before 1988 to fit the model and show comparison of the predicted trend there. Then we use the same model to predict the future further to 2049.

Collaborative activities were limited to discussion about how to handle the wild fire dataset but nice to share ideas. Most codes used come from David W. McDonald for use in DATA 512 under [CC-BY license]. Further, the time series predictive model applied is [Prophet].