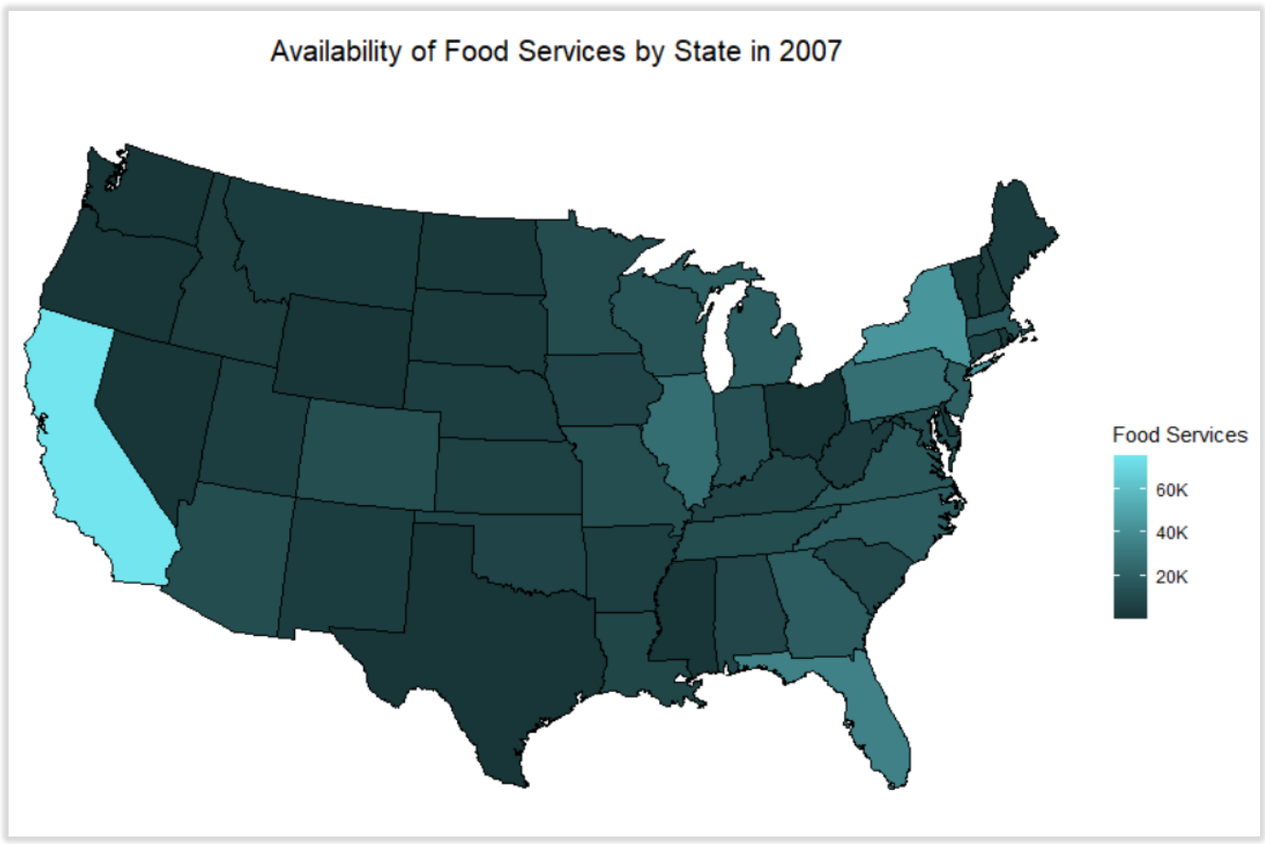
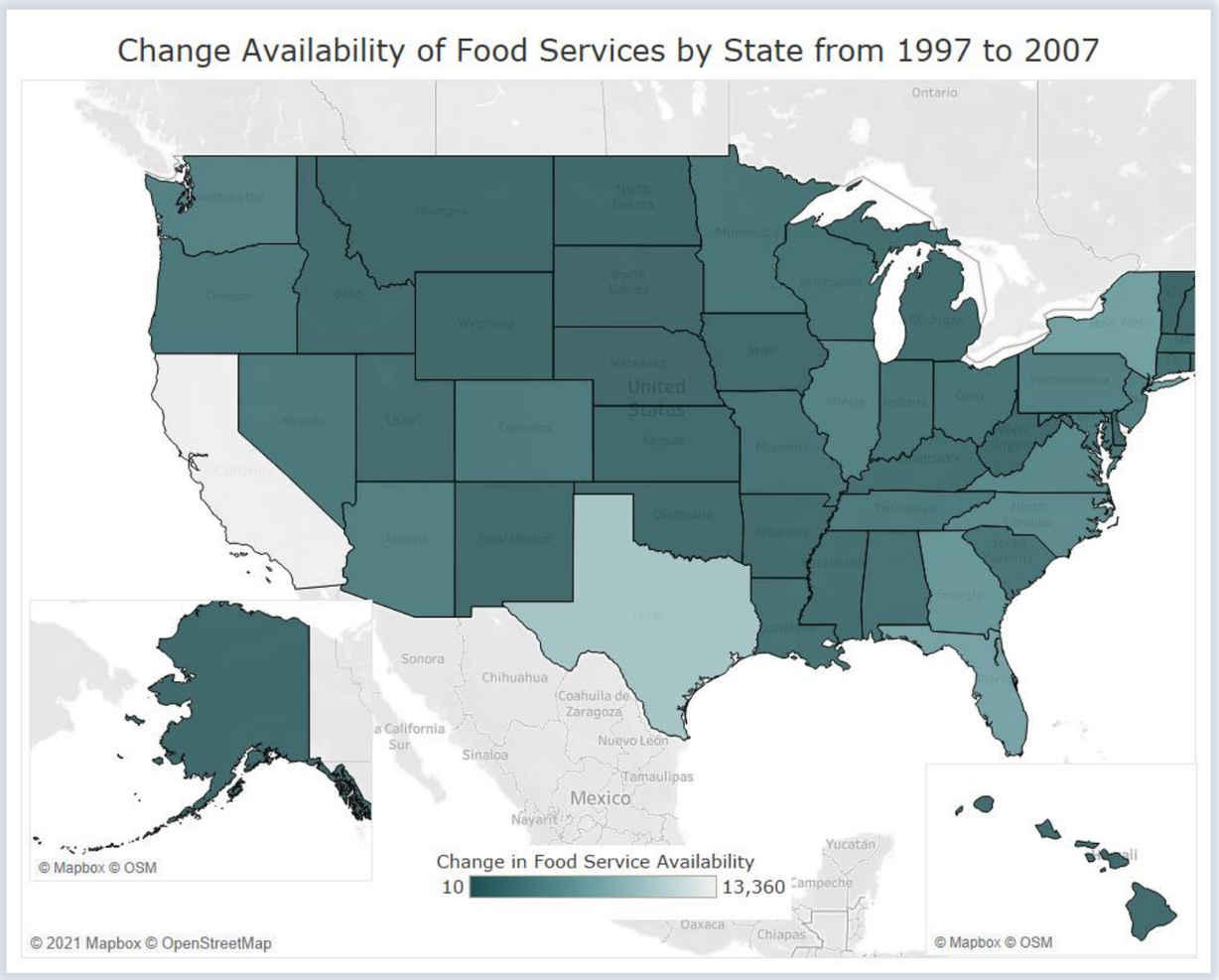
1a R Studio First, map_data("county") was left-joined with the FoodSrvcs dataset to create FoodMapState. Gpplot was used to plot FoodMapState with x = long and y = lat, grouping by group, and filling by the 2007 column. Geom_polygon sketched the map, then color, legend title and scale, and theme were all updated to remove the background ggplot left and make this clean graph instead. Colors were chosen from Colorgorical. The image was cropped and legend was shifted slightly. R said Alaska and Hawaii don't exist



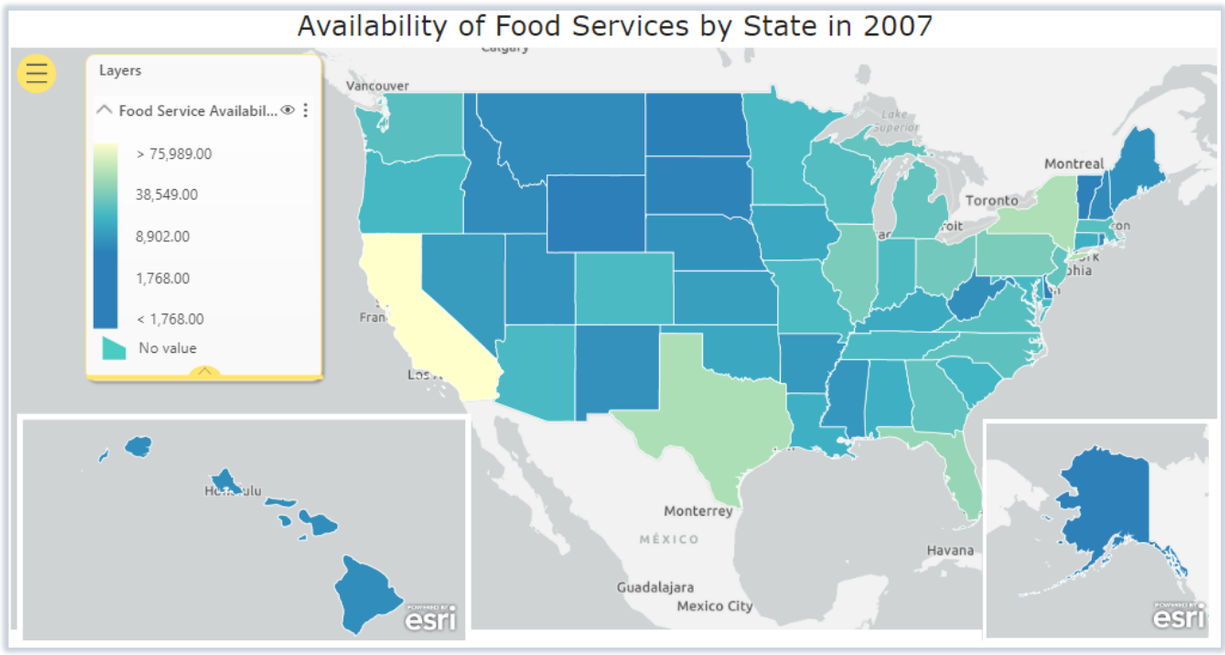
1a Tableau Firstly, this map is different in that I created a calculated field that had [FoodServices.97]-[FoodServices.2007] to show the difference in availability. Then in order to have Alaska and Hawaii show up, a dashboard was made and 2 duplicates of the map was created that could float over the continental USA map… I have Feelings about the amount of detail in Mexico, and the MapBox logo appearing 3 times



1a Power BI For some foolish reason, upon initially discovering the arcgis functionality in Power BI, I thought this graph would be fun, maybe even easy to create. By grouping the data to sum 2007 data by state, then making state a geographic variable, I was able to create this. Unfortunately, this is the extent of the legend capabilities…though the ability to use sliders to determine the color scale was a surprise and made for a more visually interesting map than the first two.

To float HI and AK, I copy and pasted the initial viz on top… well for some reason the maps kept resetting themselves and eventually I used paint to put Alaska down. But in the Power BI file you can see its three maps that load the same, with the manual zoom reset. I also erased the yellow menu symbol from HI and AK but left it on the main viz just to show what kind of nonsense went down in Power BI.

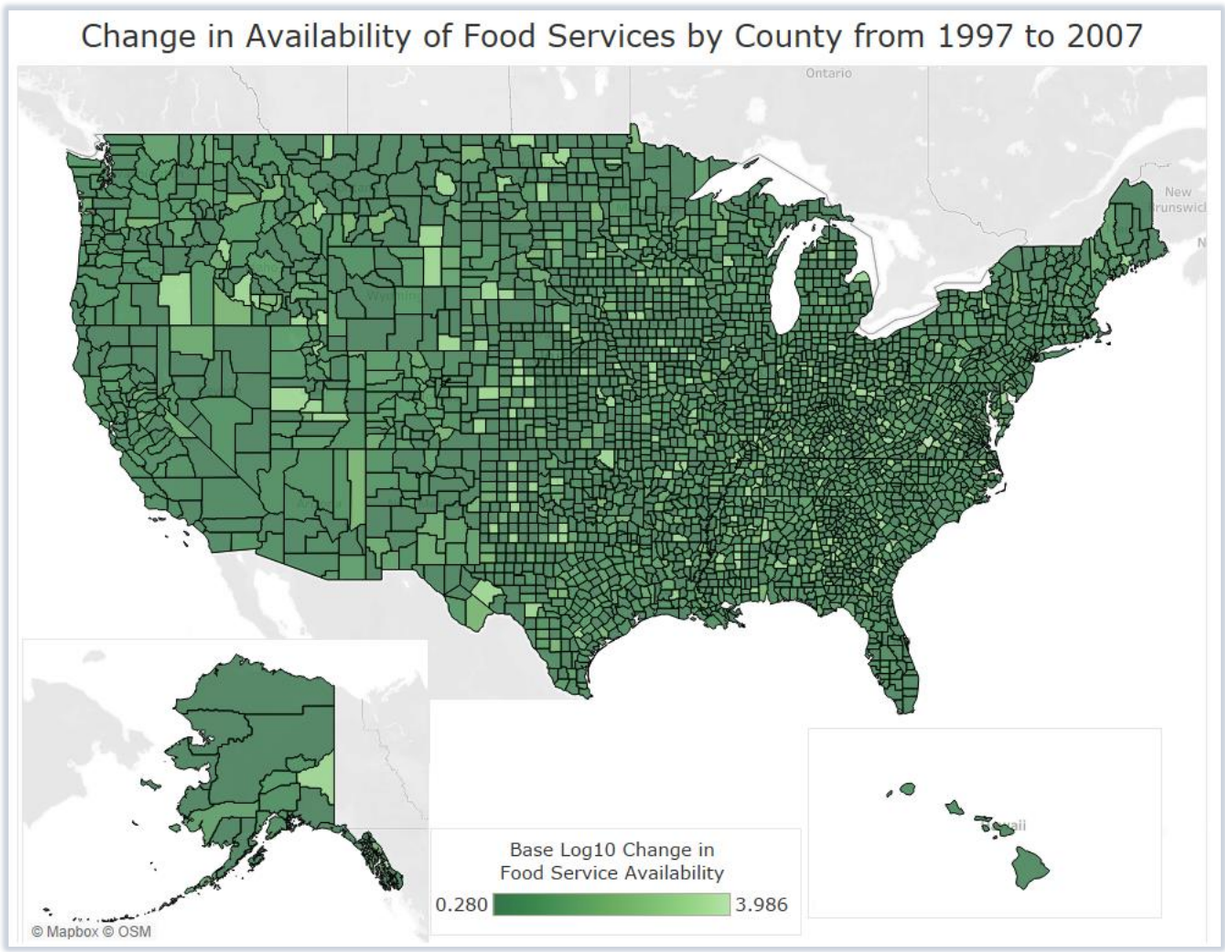
Ultimately I will say this made nice graphs, but requires finishing work to be done in a second program like Paint or Inkscape, where Tableau did not.



1b.

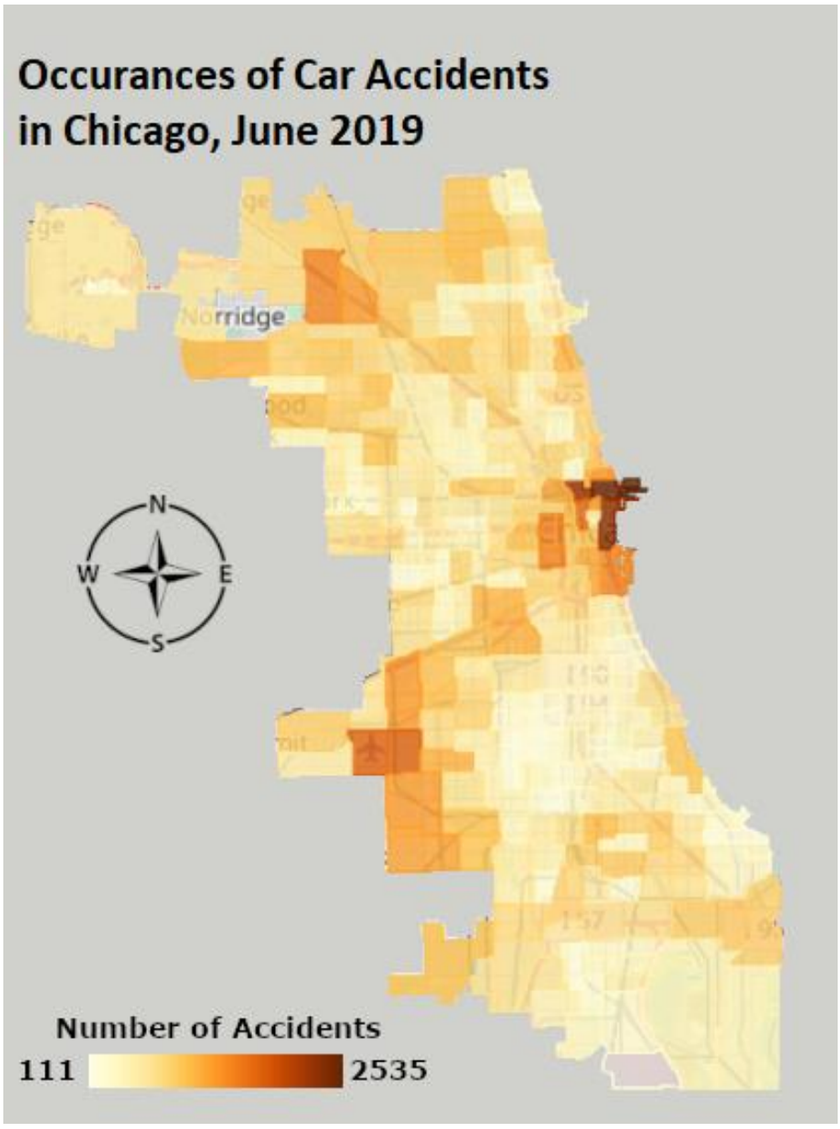
1b R Studio Well I was thinking about the manual color scale in Power BI and tried to throw a log 10 transformation in the color_fill_continuous trait in ggplot and it works.

1b Tableau So the color calculation was possible but the scale is a bit confusing, though the point still comes across for where food availability increases


Change in Availability of Food Services by County from 1997 to 2007
Ontario
Base Log10 Change in
Food Service Availability
0.280
3.986
© Mapbox © OSM

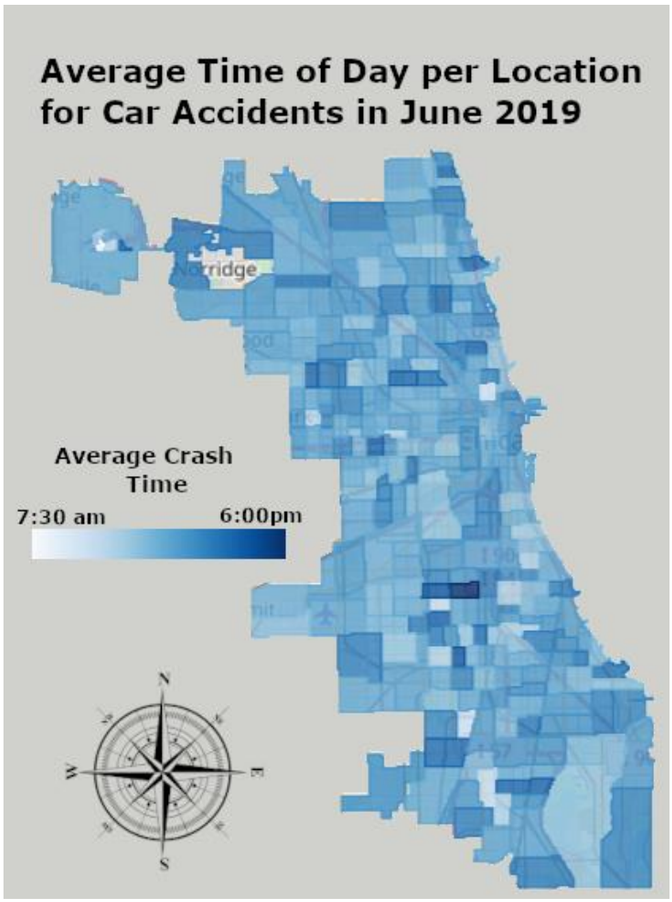
2a.

2a R Studio This was created using the police beat shape file, created a new df based on number of occurrences of Beats, merging the new df with the shape data, then using leaflet to add the polygons. Two maps were created, one with OpenStreetMap tiles and one without. GIMP was used to overlay the layers to keep the street map under the polygon but delete the rest of map, and to add the title and labels.



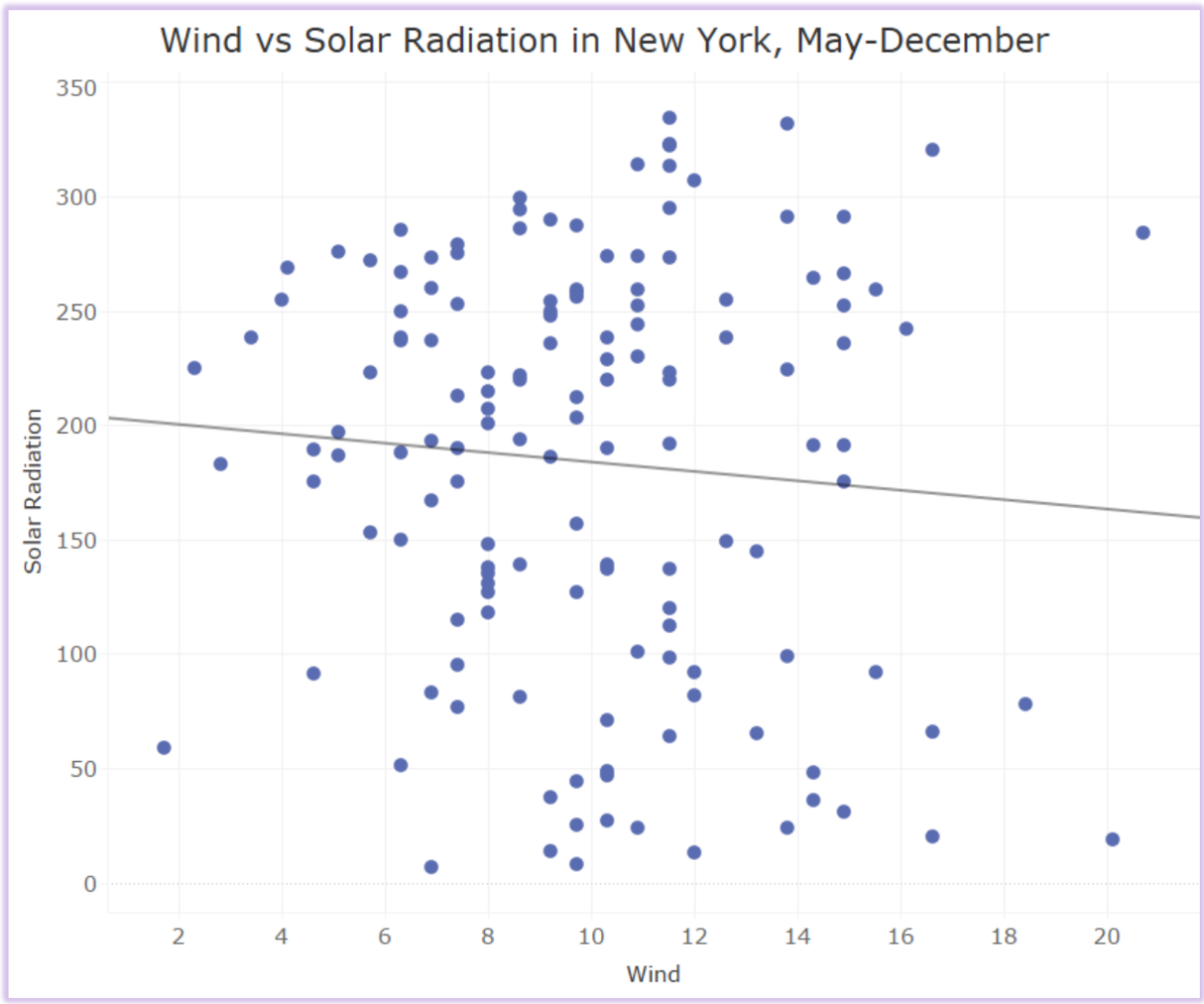
2b.

2b R Studio Created similarly to the first graph, but this time by calculating the average time for car crashes. Summary() was also used in order to create the scale in the map. This shows us where crashes were occurring more at night or in the morning. The graph as a whole shows that the city has an average time for accidents occurring around working hours, as everyone commutes to and from work.



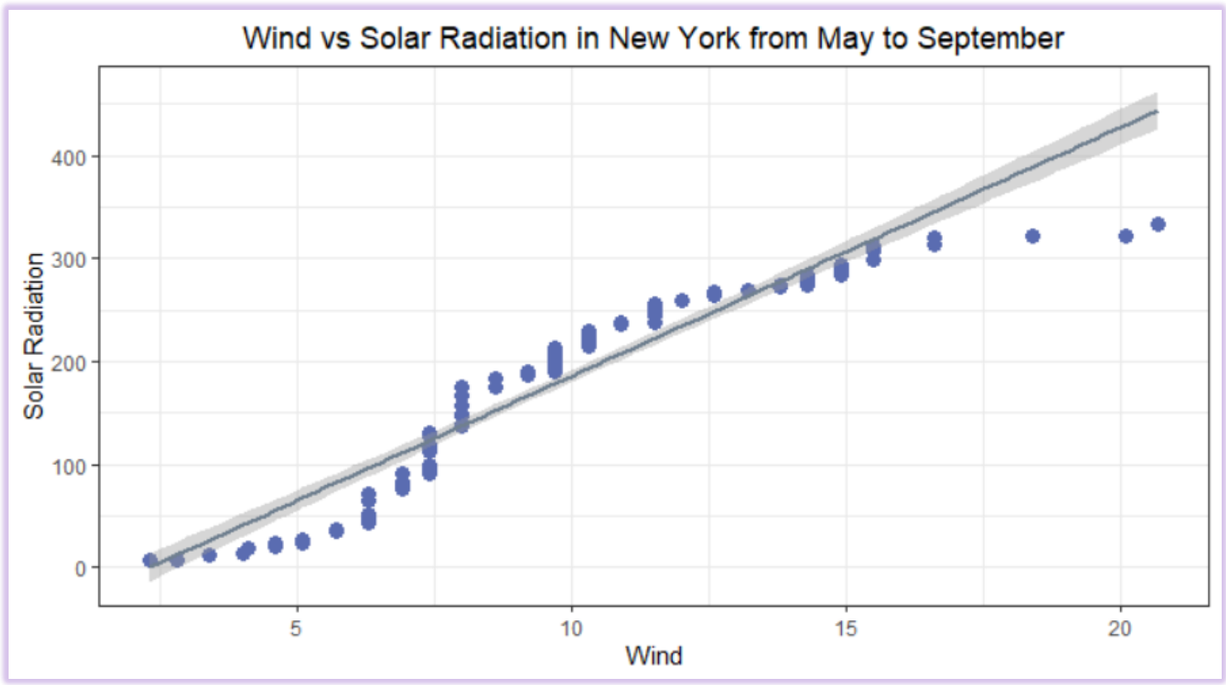
3a.

3a Tableau



3b.

3b R Studio This side-by-side distribution sorted wind and solar radiation and placed them into a new df that was point-plotted.



3c.

3c R Studio This was created by using pivot_longer, removing the month column, and using beeswarm