

# Orange County Air Pollution and Household Income

```
library(tidyverse)
library(sf)
library(here)
library(tmap)
```

```
# read in the the geodatabase
ejsscreen <- sf::st_read(here::here("data", "ejsscreen", "EJSCREEN_2023_BG_StatePct_with_AS_CNMI_GU
```

```
Reading layer `EJSCREEN_StatePctiles_with_AS_CNMI_GU_VI' from data source
`C:\Users\kadon\OneDrive\Documents\MEDS\EDS-223\Homework\EDS223-
HW1\data\ejsscreen\EJSCREEN_2023_BG_StatePct_with_AS_CNMI_GU_VI.gdb'
  using driver `OpenFileGDB'
Simple feature collection with 243021 features and 223 fields
Geometry type: MULTIPOLYGON
Dimension:      XY
Bounding box:   xmin: -19951910 ymin: -1617130 xmax: 16259830 ymax: 11554350
Projected CRS: WGS 84 / Pseudo-Mercator
```

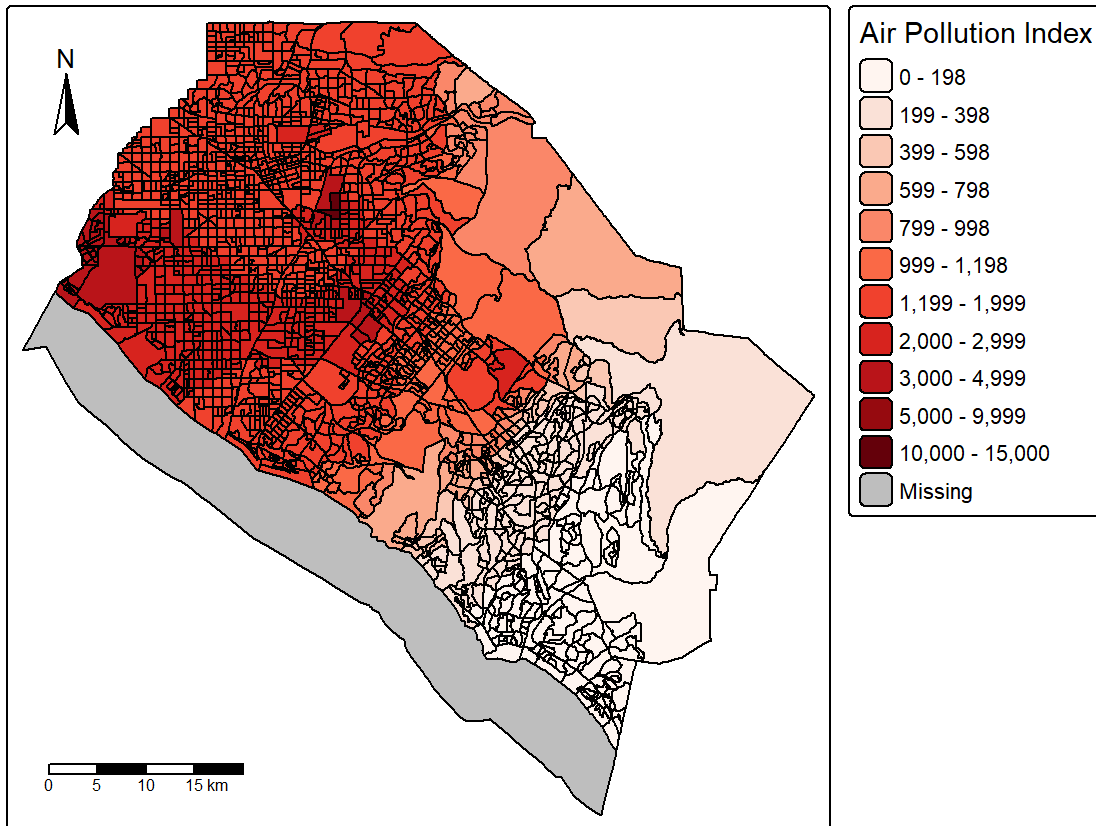
```
# filter to only include the State and County of focus (Santa Ana) and multiple decimal point variables
```

```
Orange_County <- ejsscreen %>%
  dplyr::filter(ST_ABBREV == "CA", CNTY_NAME %in% c("Orange County"))
Orange_County$LOWINCPCT <- Orange_County$LOWINCPCT * 100
```

```
# Map poor air quality, RSEI_AIR, within Orange County, with a color gradient system focused on displaying
```

```
tm_shape(Orange_County) +
  tm_polygons(fill = "RSEI_AIR",
              border.col = "black",
              palette = "Reds",
              title = "Air Pollution Index",
              breaks= c(0.00, 199.00, 399.00, 599.00, 799.0, 999.00, 1199.00, 2000.00, 3000.00, 5000.00))
tm_compass(position = c("left", "top"))+
tm_scalebar(position = c("left", "bottom")) +
tm_layout(main.title = "Map of Areas With High Air Pollution")
```

## Map of Areas With High Air Pollution



```
# Map the percentage of low income designated households by zipcode to determine if there is a sp
tm_shape(Orange_County) +
tm_polygons(fill = "LOWINCPCT",
            border.col = "black",
            breaks= c(0, 20, 40, 60, 80, 100),
            title = "% of HH Low Income") +
tm_compass(position = c("left", "top"))+
tm_scalebar(position = c("left", "bottom")) +
tm_layout(main.title = "Map of Low Income Households")
```

## Map of Low Income Households

