

EDS223 Homework 1

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```
library(tidyverse)
```

```
-- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
v dplyr     1.1.4     v readr     2.1.5
v forcats   1.0.0     v stringr   1.5.1
v ggplot2   3.5.2     v tibble    3.3.0
v lubridate  1.9.4     v tidyr    1.3.1
v purrr     1.1.0
-- Conflicts -----
x dplyr::filter() masks stats::filter()
x dplyr::lag()   masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become non-conflicting
```

```
library(sf)
```

```
Linking to GEOS 3.13.0, GDAL 3.8.5, PROJ 9.5.1; sf_use_s2() is TRUE
```

```
library(here)
```

```
here() starts at /Users/sofiasarak/Desktop/MEDS/EDS-223/eds223-homework1
```

```
library(tmap)
```

```
# read in geodatabase of EJScreen data at the Census Block Group level
ejscreen <- sf::st_read(here::here("data", "ejscreen", "EJSCREEN_2023_BG_StatePct_with_AS_CNM"))
```

```

Reading layer `EJSCREEN_StatePctiles_with_AS_CNMI_GU_VI' from data source
`/Users/sofiasarak/Desktop/MEDS/EDS-223/eds223-homework1/data/ejscreen/EJSCREEN_2023_BG_Sta
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 a state you are interested in
ct <- ejscreen %>%
  dplyr::filter(ST_ABBREV == "CT")

# filter to a county you are interested in
fairfield <- ejscreen %>%
  dplyr::filter(CNTY_NAME %in% c("Fairfield County"))

# find the average values for all variables within counties
ct_counties <- aggregate(ct, by = list(ct$CNTY_NAME), FUN = mean, na.rm = TRUE)

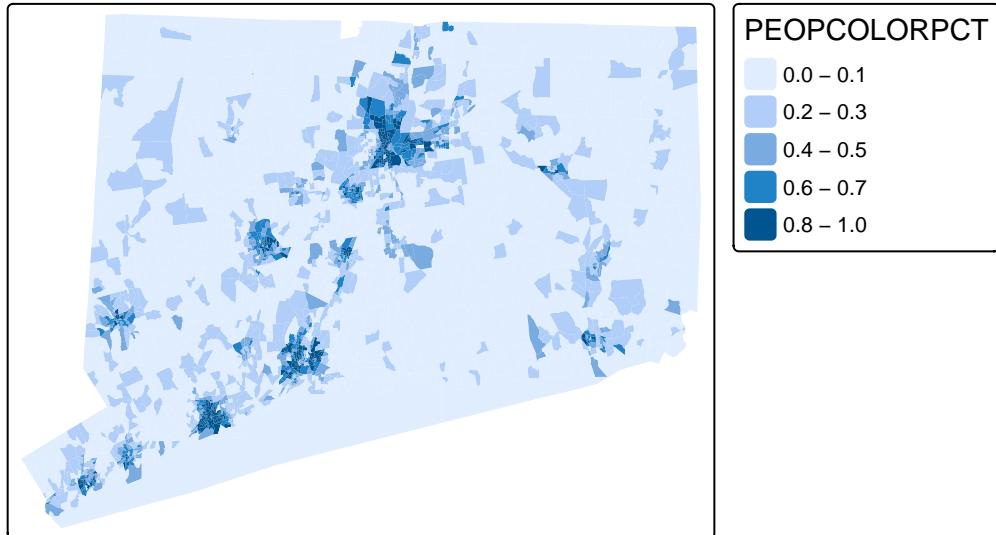
Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
returning NA
Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
returning NA
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Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
returning NA
Warning in mean.default(X[[i]], ...): argument is not numeric or logical:
returning NA

```

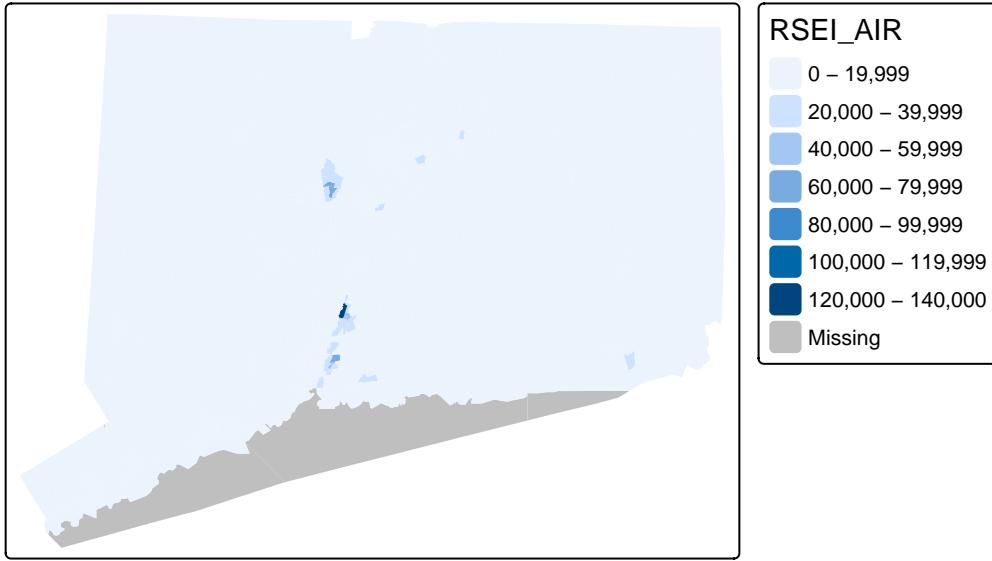


```
Warning in mean.default(X[[i]], ...): argument is not numeric or logical:  
returning NA  
Warning in mean.default(X[[i]], ...): argument is not numeric or logical:  
returning NA  
Warning in mean.default(X[[i]], ...): argument is not numeric or logical:  
returning NA  
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returning NA  
Warning in mean.default(X[[i]], ...): argument is not numeric or logical:  
returning NA
```

```
tm_shape(ct) +  
  tm_fill("PEOPCOLORPCT")
```

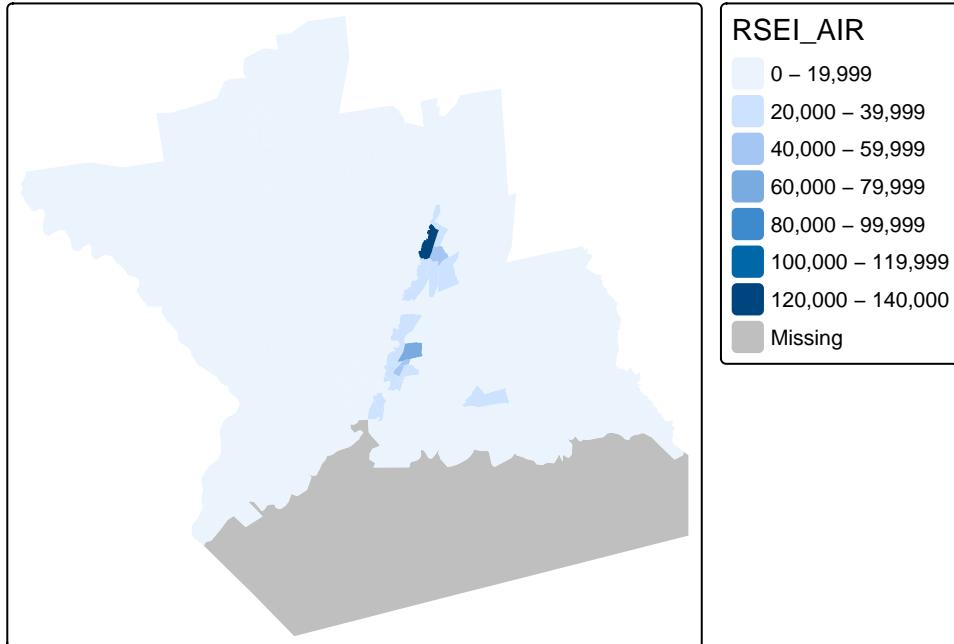


```
tm_shape(ct) +  
  tm_fill("RSEI_AIR")
```

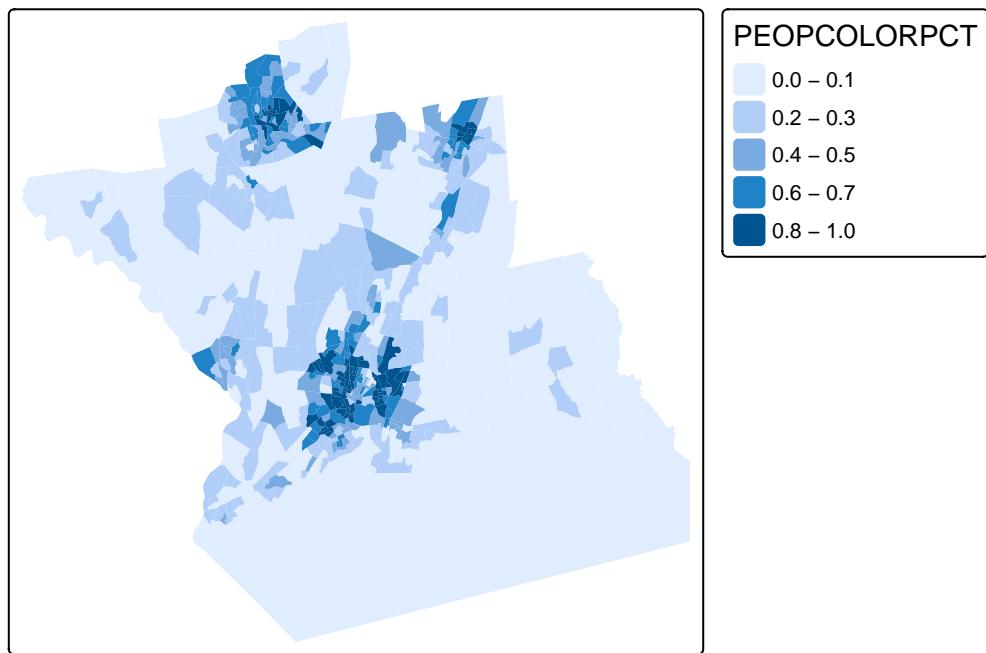


```
nh <- ejscreen %>%
  dplyr::filter(CNTY_NAME %in% c("New Haven County"))
```

```
tm_shape(nh) +
  tm_fill("RSEI_AIR")
```



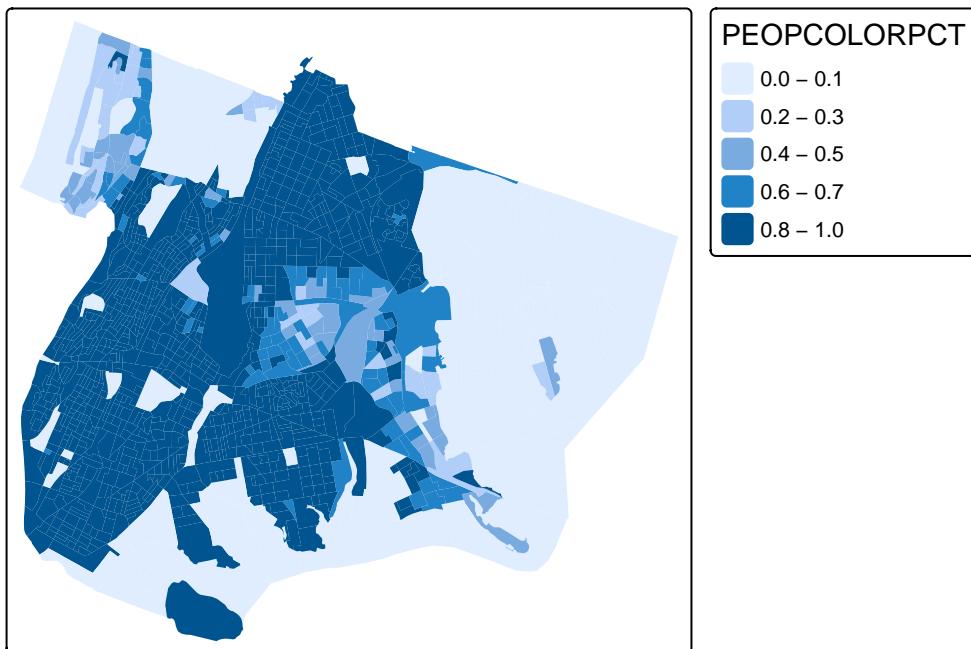
```
tm_shape(nh) +  
  tm_fill("PEOPCOLORPCT")
```



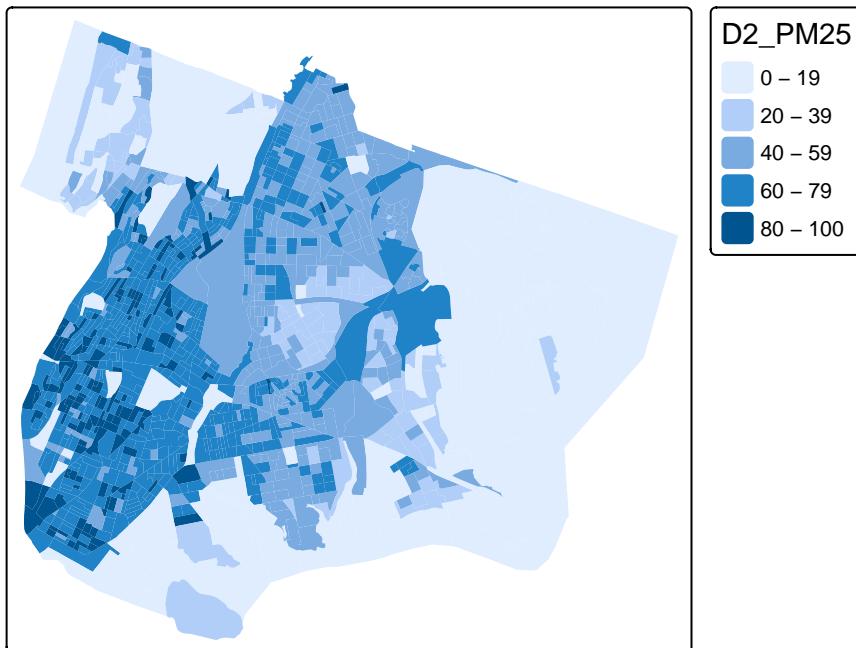
```
ny <- ejscreen %>%
  dplyr::filter(ST_ABBREV == "NY")
```

```
bronx <- ejscreen %>%
  dplyr::filter(CNTY_NAME %in% c("Bronx County"))
```

```
tm_shape(bronx) +
  tm_fill("PEOPCOLORPCT")
```



```
tm_shape(bronx) +
  tm_fill("D2_PM25")
```



```
tm_shape(bronx) +  
  tm_fill("LOWINCPCT")
```

