

Methodology

We collected and analyzed publically available demographic and pollution data from federal and state sources. Extensive mapping was created to identify and overlay eight types of air, water, and land pollution points in the 14-county metro Atlanta region. We then cross-referenced these locations with seven demographic characteristics of people living in close proximity to them.

With this data compiled within a Geographical Information System (GIS), we performed the following three analysis steps:

1. spatially analyzed general patterns of pollution across the region;
2. compared the demographic traits of high-pollution and low-pollution blocks; and
3. identified environmental justice hotspots where the correlation between race, poverty and pollution is strongest.

A more detailed and technical discussion of the GIS spatial analysis and quantile calculations can be found in Appendix A.

Figure 4

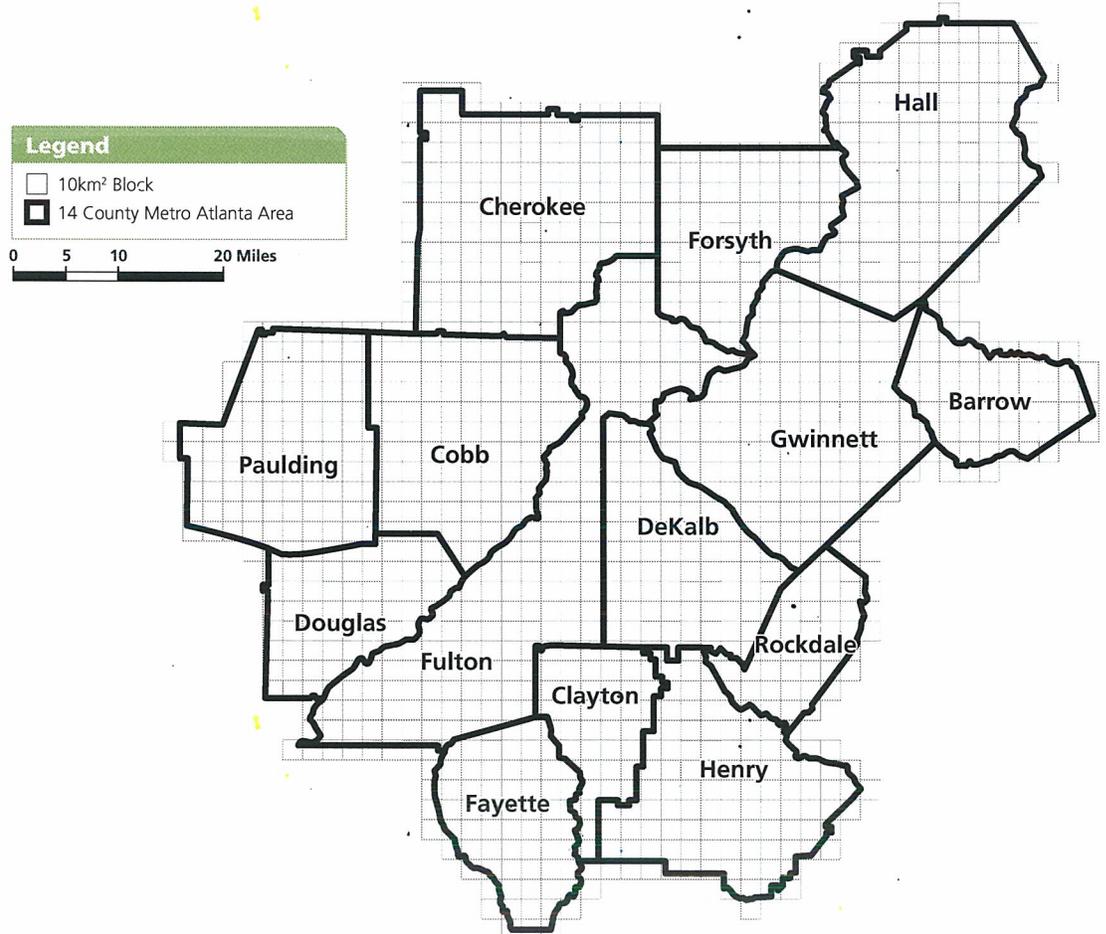
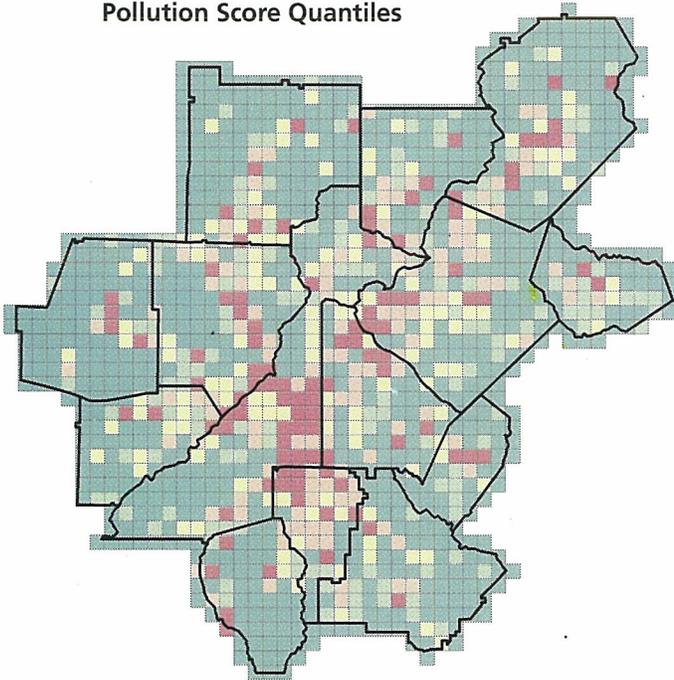


Figure 5

Pollution Score Quantiles



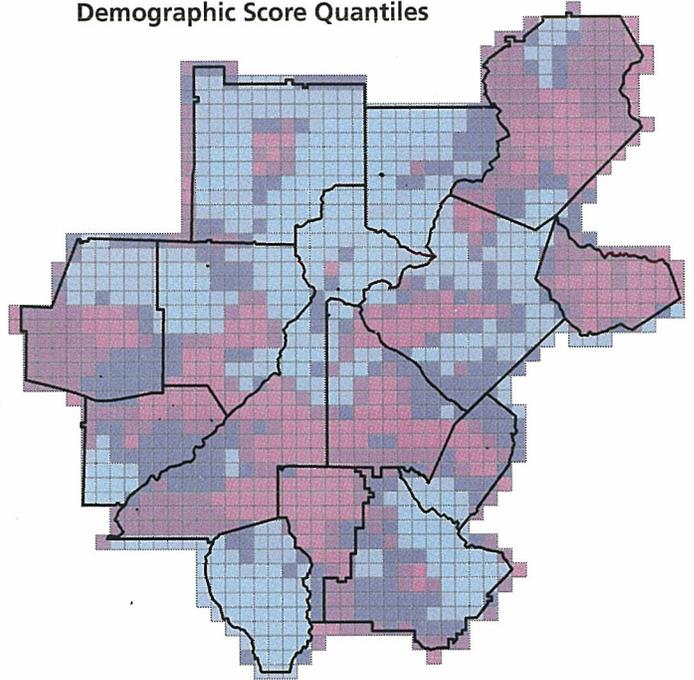
Pollution Legend

- 0 (1st Quantile)
- 1 (2nd Quantile)
- 2 - 3 (3rd Quantile)
- 4 - 8 (4th Quantile)
- 9 - 55 (5th Quantile)
- 10km² Block
- 14 County Metro Atlanta Area



Figure 6

Demographic Score Quantiles



Demographic Legend

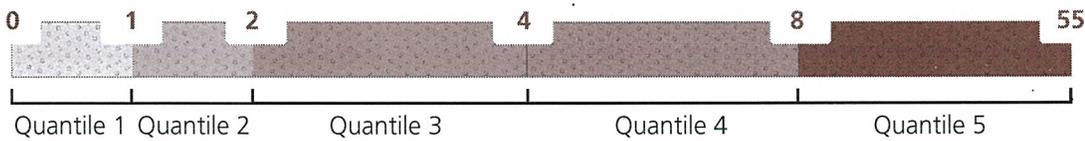
- 8.3 - 14.7 (1st Quantile)
- 14.7 - 18.2 (2nd Quantile)
- 18.2 - 22.3 (3rd Quantile)
- 22.3 - 25.8 (4th Quantile)
- 25.8 - 34.8 (5th Quantile)
- 10km² Block
- 14 County Metro Atlanta Area



Step 1 – Spatial Analysis of Pollution Data

The first step involved the creation of a systematic grid of square “blocks” measuring 10 square kilometers. This grid was then superimposed over the region to create a neutral and un-biased geography for analysis (Figure 4). Next, all pollution points in each block were located and each pollution point was given a value of one. All pollution point values were in turn summed, resulting in a total “pollution score” for each block. Pollution scores ranged from 0 to 55. The pollution score in each of the blocks was then divided and mapped into five generally equal categories or “quantiles” representing 20 percent segments:

Pollution Score Range



Pollution Points

1. Permitted air pollution facilities
2. National Pollution Discharge Elimination System (NPDES) permitted facilities
3. Hazardous waste inventory (HSI) sites
4. Toxic Release Inventory (TRI) sites
5. Comprehensive Environmental Response Compensation and Liability Act (CERCLA or “Superfund”) sites
6. Resource Conservation and Recovery Act (RCRA) hazardous waste storage sites
7. Active solid waste landfills
8. Permit violations and enforcement actions taken by EPA or EPD for the violation of environmental laws

The pollution points identified are permitted at the state or federal level to emit or store pollutants. The information regarding pollution points is publicly available either online or by request to a state or federal agency.

Demographic Data Characteristics

1. Percent of population that is non-white
2. Percent of vacant housing units
3. Median housing value
4. Median family income
5. Percent of population in poverty
6. Percent of households that are linguistically isolated
7. Percent of population with a high school degree

Demographic Score Range

