

# Heat-Related Hospitalizations in Older Adults: The Atlanta MSA

## Introduction

As extreme weather events become more prevalent and the older adult population increases, severe heat waves could have a detrimental effect on this group, making this issue a growing public health concern.

We examined the effects of heat waves on the Atlanta Metropolitan Statistical Area (MSA) in populations 65 years and older. The spatial questions we answered through this project include:

- What factors most heavily influence where heat-related hospitalizations occur?
- Where are the most vulnerable populations of older adults located within the Atlanta MSA?
- How can we better prepare for heat waves in order to decrease these hospitalizations?

## Methodology

We analyzed four factors in comparison to heat-related hospitalizations for populations 65 years and older, by zip code:

1. Population Density
2. Percentage of households in poverty in the past 12 months
3. Temperature
4. Percentage of the population 65 years and older

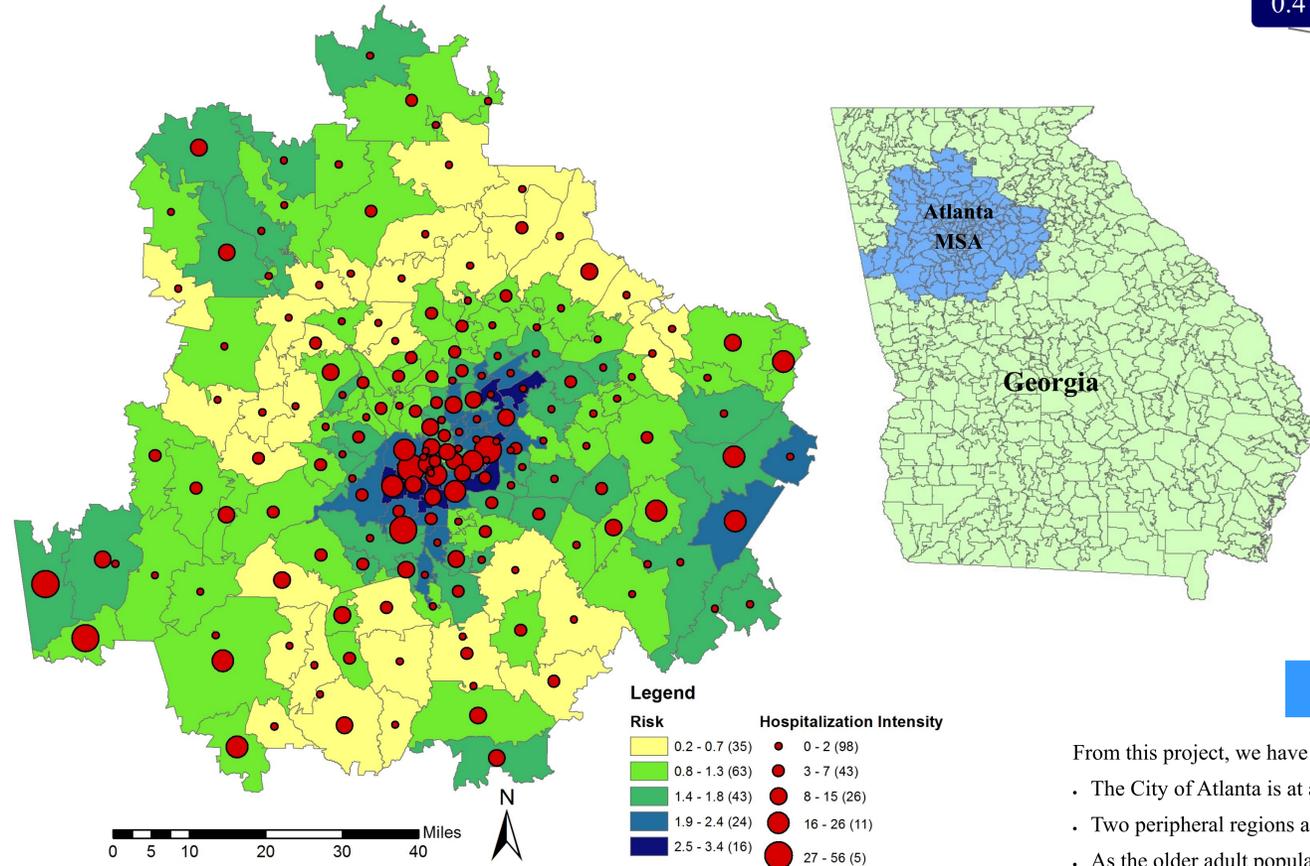
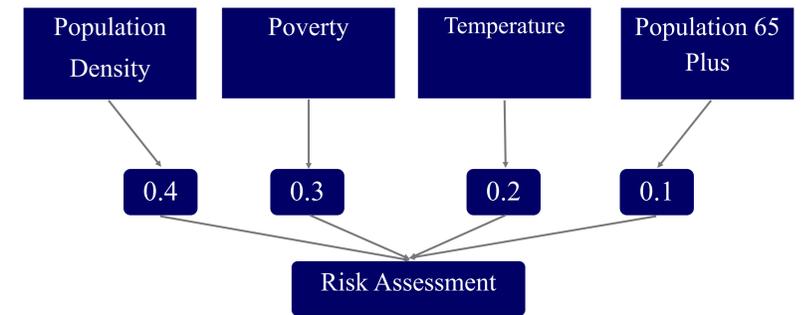
Process:

- Find and compile the appropriate data.
- Define the Atlanta Metropolitan Statistical Area.
- Define and find all of the heat waves from 1991 through 2006.

A heat wave was defined as 3 consecutive days with a maximum average temperature above the 95th percentile (92.30°F).

- Analyze this data spatially through the creation of risk maps.

Cartography: Jennifer Skerker, for CEE-0187 (December 2014)  
 Projection: NAD 1983 StatePlane Georgia West FIPS 1002  
 References: U.S. Census Bureau (2010, 2013); NOAA (2014); Tufts GIS. ESRI Data Map 10; Tufts University Department of Civil and Environmental Engineering (1991-2006)



## Limitations

Some limitations in the scope and extent of this project include:

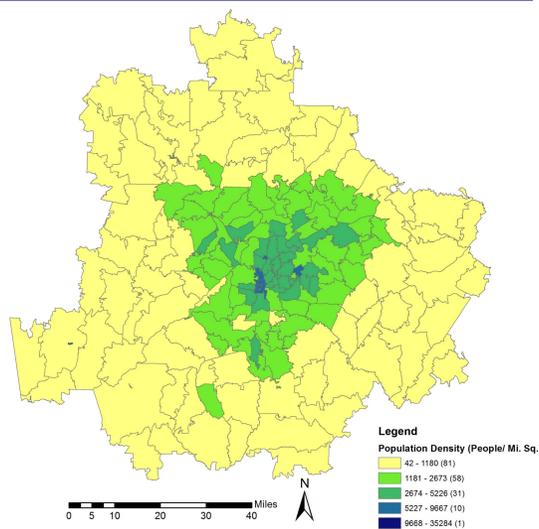
- Definition of the Atlanta MSA.  
For simplicity, we only used 181 out of 297 zip codes.
- Daily maximum temperature vs. minimum temperature.  
We only used maximum temperature, but minimum temperature may be equally important.
- Data by day or zip code.  
Data for zip codes summed over 16 years because heat-related hospitalizations are infrequent.

## Conclusions

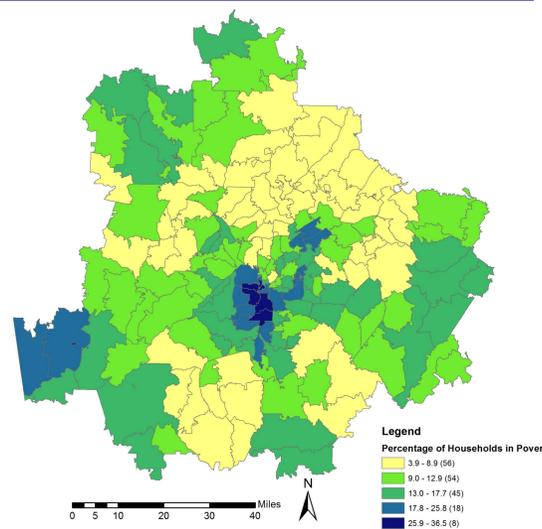
From this project, we have concluded that:

- The City of Atlanta is at a relatively high level of risk for older populations of adults.
- Two peripheral regions at risk include the zip codes in the southwest and east of the MSA.
- As the older adult population continues to grow, we must address this issue.
- Possible solutions include improving access to drinking water, access to health care, and availability of senior centers.

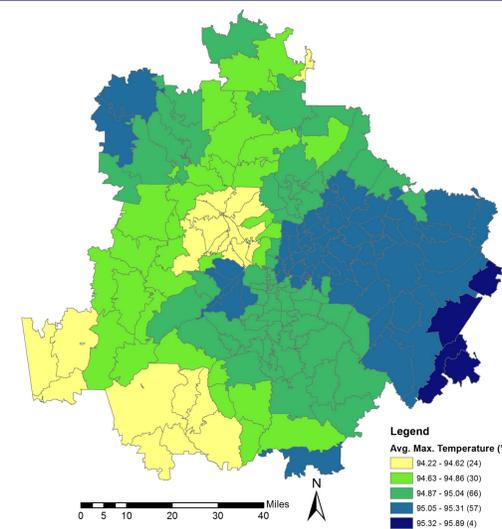
## Population Density



## Poverty



## Temperature



## Population 65 Plus

