

CLIMATE CHANGE DATA INVENTORY AND DASHBOARD SCAN



STUDENTS **Pedro Ortiz** | Urban Studies, Georgia State University

Yilun Zha | Urban Design & Planning, Georgia Tech

PROJECT LEAD **Hae Seung Sung, Crystal Jackson**

LOCAL HOST **Atlanta Regional Commission**

EXECUTIVE SUMMARY

How does **Metro Atlanta** contribute to and has been affected by climate change? To monitor the trend and foster public awareness, the Atlanta Regional Commission (ARC) is working on creating their first **Climate Change Data Inventory**. To help organize that effort, we divide and aggregate data sources into three categories: **Human Activity**, **Climate Observation**, and **Social Impact**, among which the Greenhouse Gas (GHG) emission data will also help the fulfillment of US EPA's Climate Pollution Reduction Grant (CPRG). Once the inventory is complete, the ARC will use it for their future **Climate Change Dashboard**: a public tool to understand the state of climate change in the region.

HUMAN ACTIVITIES

THE DRIVER

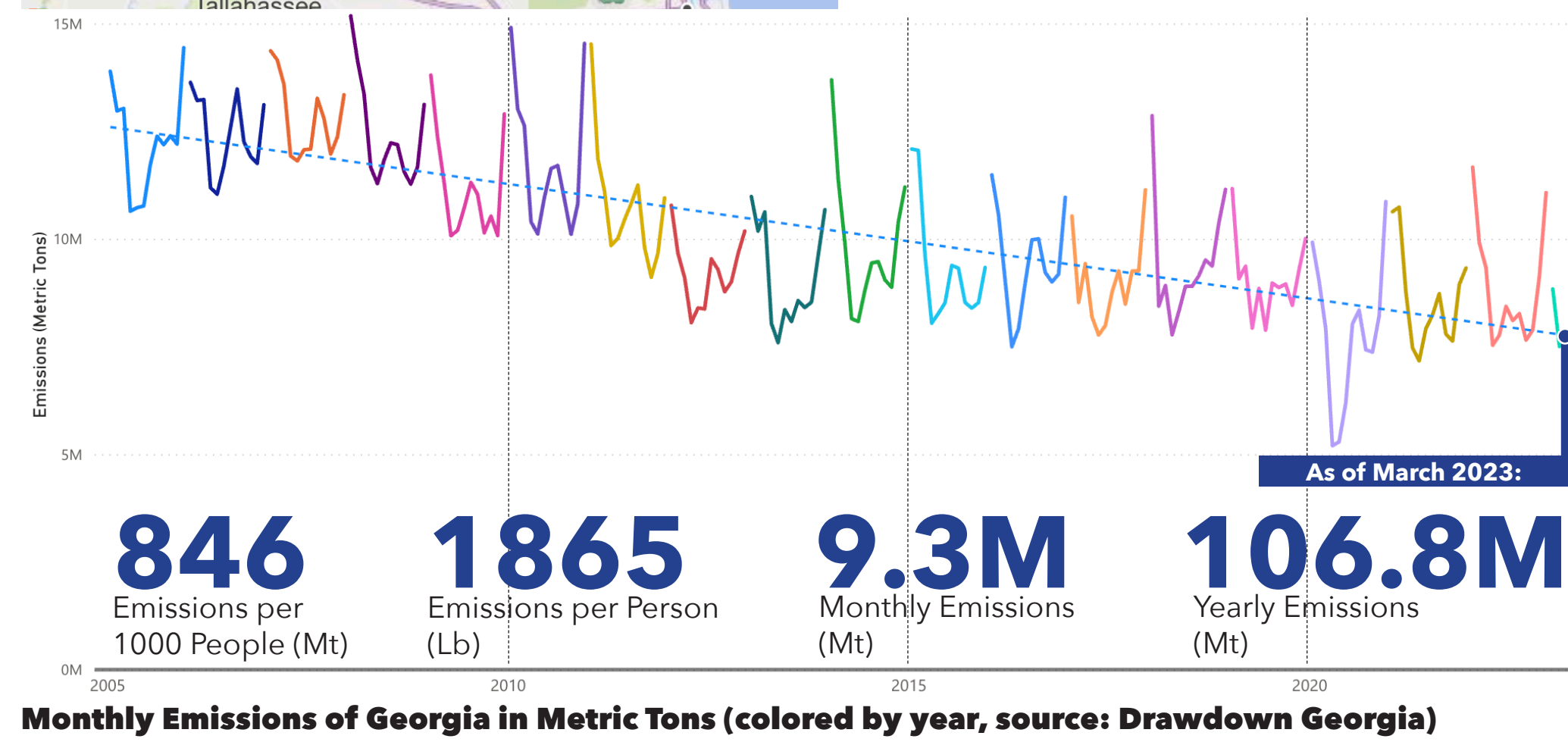
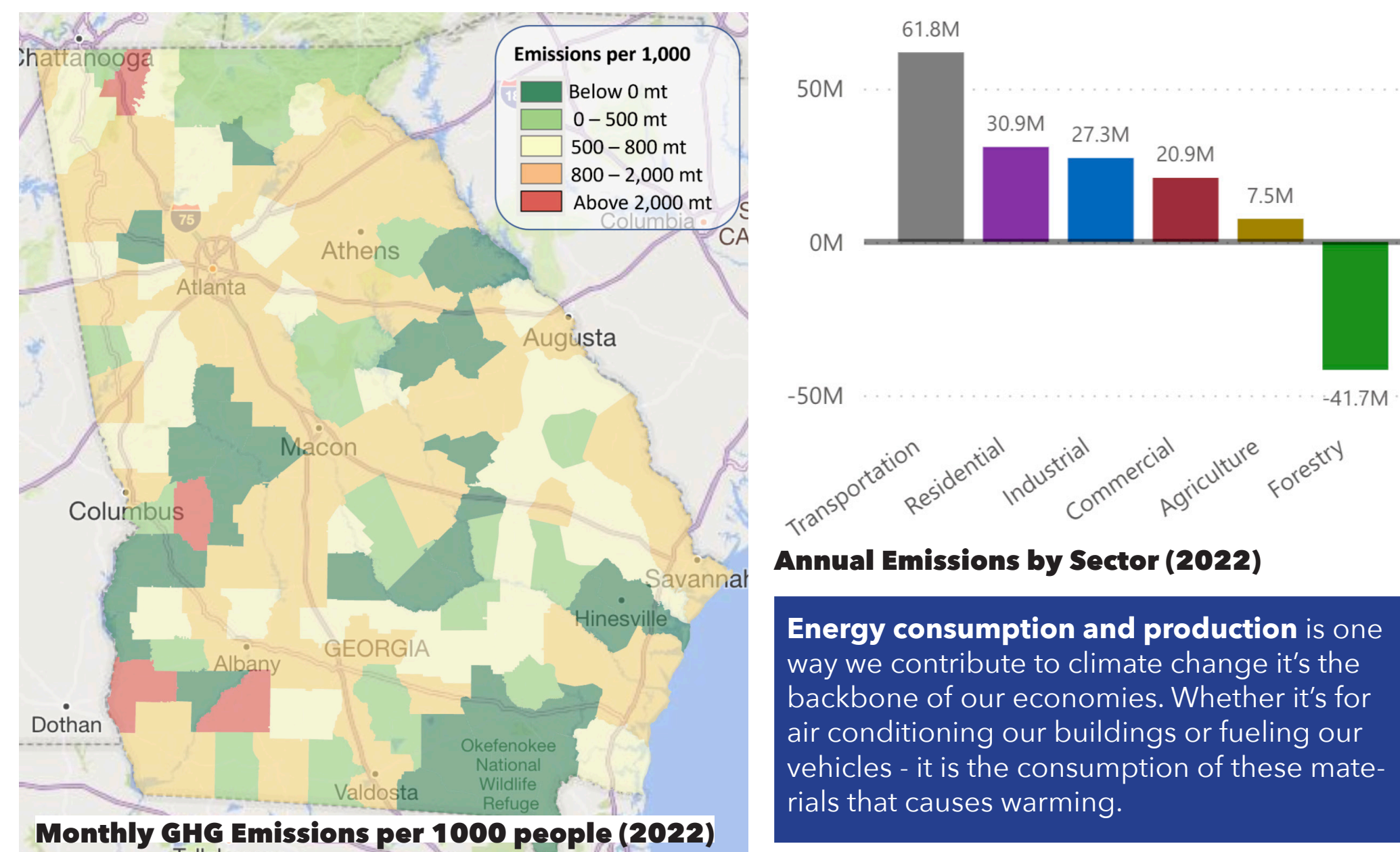


Everything humans do costs energy, and the by-products of that energy generation traps heat. Human Activity refers to the **production and consumption patterns** that contribute to climate change.

CLIMATE CHANGE DATA INVENTORY - HUMAN ACTIVITIES

Dataset Name	Source	Category	Sub-category	Variable
American Community Survey	Census Bureau	Human Activities	Social Misc	Nativity & Citizenship Status, Language Spoken
Vehicle Miles Traveled	USDOT	Human Activities		Vehicle Miles Traveled
Vehicle Miles Traveled (Georgia)	GDOT	Human Activities		Vehicle Miles Traveled
US Energy Atlas	Energy Information Administration (EIA)	Human Activities	Power Consumption	Power Plant Location
Facility Level Information of Greenhouse Gases Tool (FLIGHT)	EPA	Human Activities	Emissions	Facilities that emit 25000 metric tons or more of CO2
National Land Cover Database	USGS	Human Activities	Land Use	Land by type of coverage (like forest coverage)
GHG Emissions	Drawdown GA	Human Activities	Emissions	GHG emissions by year per metric ton by geoid an
State Energy Profiles	Energy Information Administration (EIA)	Human Activities	Power Consumption	Energy consumption/price/demand by source and

DRAWDOWN GEORGIA - A LOCALIZED GREENHOUSE GAS INVENTORY



CLIMATE OBSERVATIONS

THE MANIFESTATION

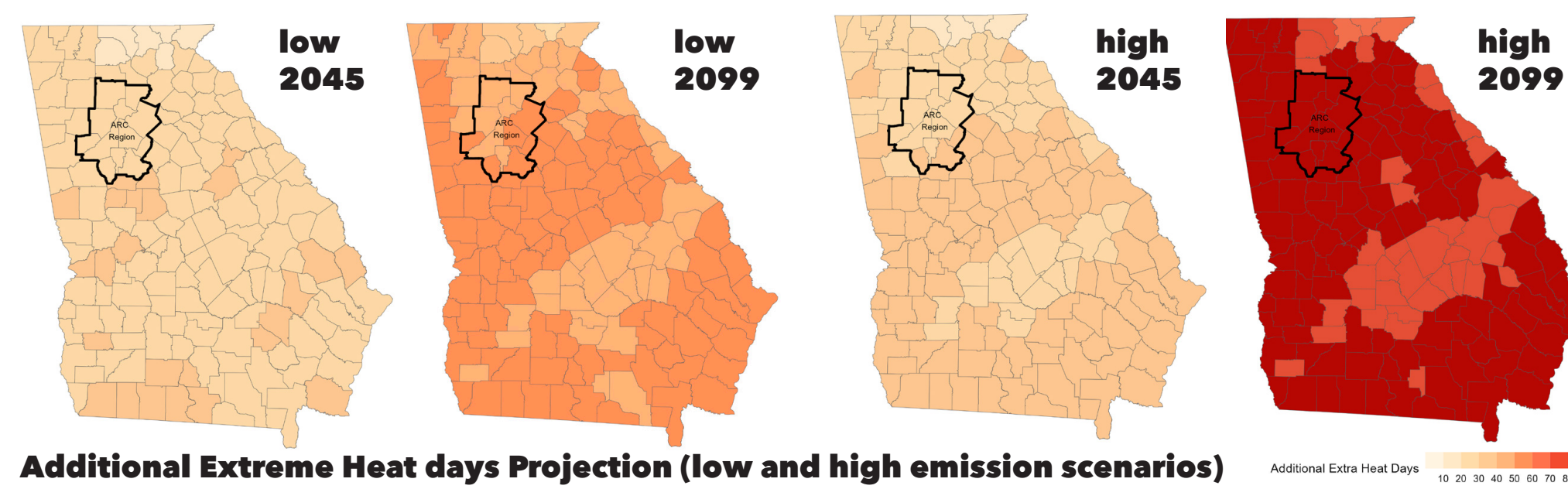
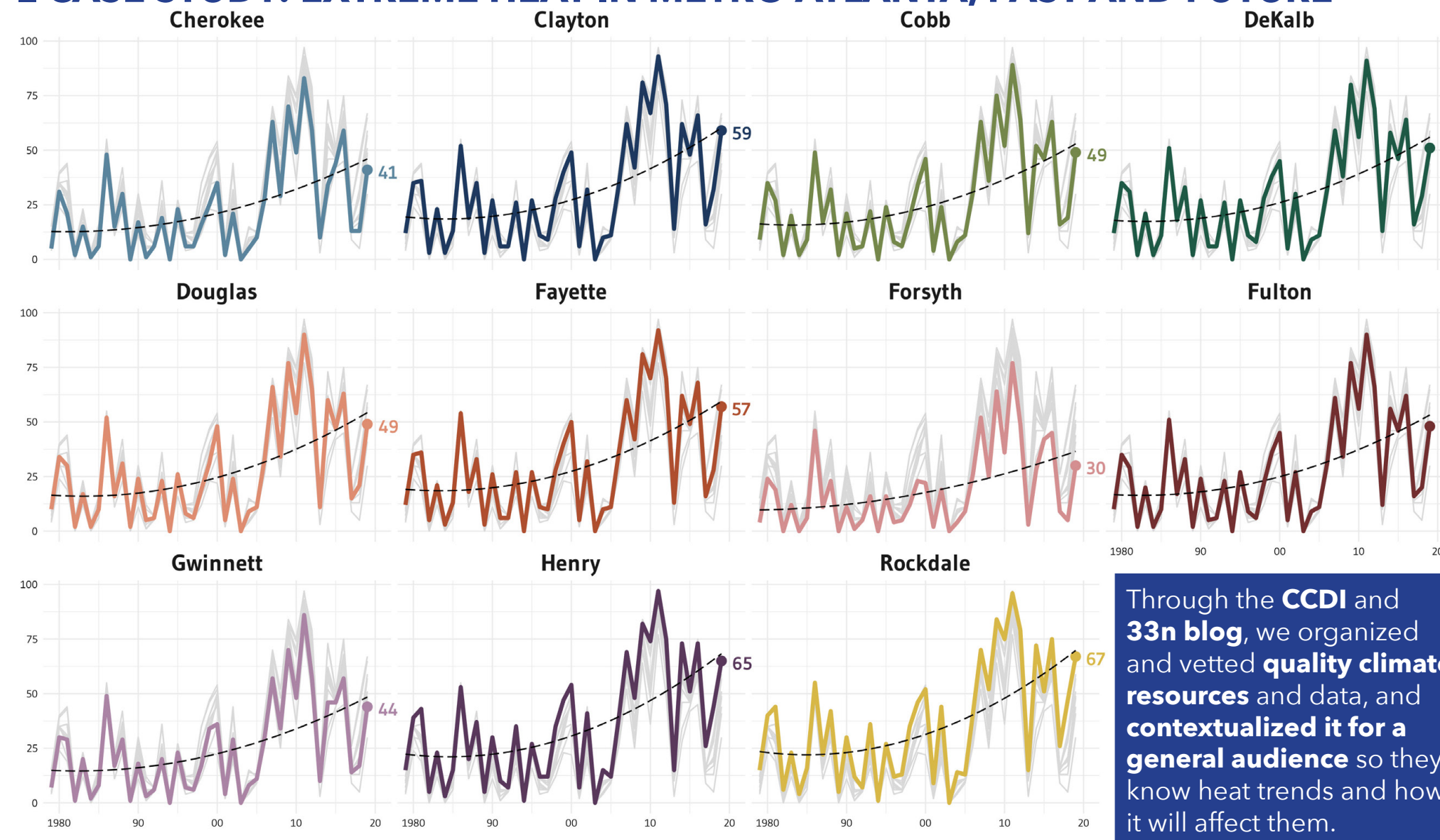


The effects of Human Activity **manifest** in a variety of ways, and we call those climate observations, including **extreme heat, wildfire, flooding, drought**, and the list goes on.

CLIMATE CHANGE DATA INVENTORY - CLIMATE OBSERVATIONS

Dataset Name	Source	Category	Sub-category	Variable	Air geograph	Unit/Array	Update Frequency
US Drought Monitor	NOAA	Climate Observations	Precipitation	Drought Classification	National	State, County, Climate Region, Urban Area	Weekly (Thursdays at 8:30 AM)
Air Data: Air Quality Data Collected at Outdoor Monitors Across the US	EPA	Climate Observations	Air	Air Quality - PPM2.5	National	CBSA, State, County, Census Tract	Daily
Air Data: Air Quality Data Collected at Outdoor Monitors Across the US	EPA	Climate Observations	Air	Air Quality - PPM10	National	CBSA, State, County, Census Tract	Daily
Air Data: Air Quality Data Collected at Outdoor Monitors Across the US	EPA	Climate Observations	Air	Air Quality - Ozone	National	CBSA, State, County, Census Tract	Daily
National Environmental Public Health Tracking	CDC	Climate Observations	Precipitation	Historical Drought	National	County	varies
National Environmental Public Health Tracking	CDC	Climate Observations	Land	Wildland Fires	National	County, Census Tract	daily
National Environmental Public Health Tracking	CDC	Climate Observations	Temperature	Extreme Heat - Projected Temperature & Heat	National	County	Annual, Monthly
National Environmental Public Health Tracking	CDC	Climate Observations	Temperature	Extreme Heat - Historical Temperature & Heat Index	National	County, Census Tract	Annual, weekly
National Environmental Public Health Tracking	CDC	Climate Observations	Precipitation	Flooding - Historical Precipitation	National	County, Census Tract	Annual, monthly
National Environmental Public Health Tracking	CDC	Climate Observations	Precipitation	Flooding - projected precipitation and flooding	National	County, Census Tract	varies

CASE STUDY: EXTREME HEAT IN METRO ATLANTA, PAST AND FUTURE



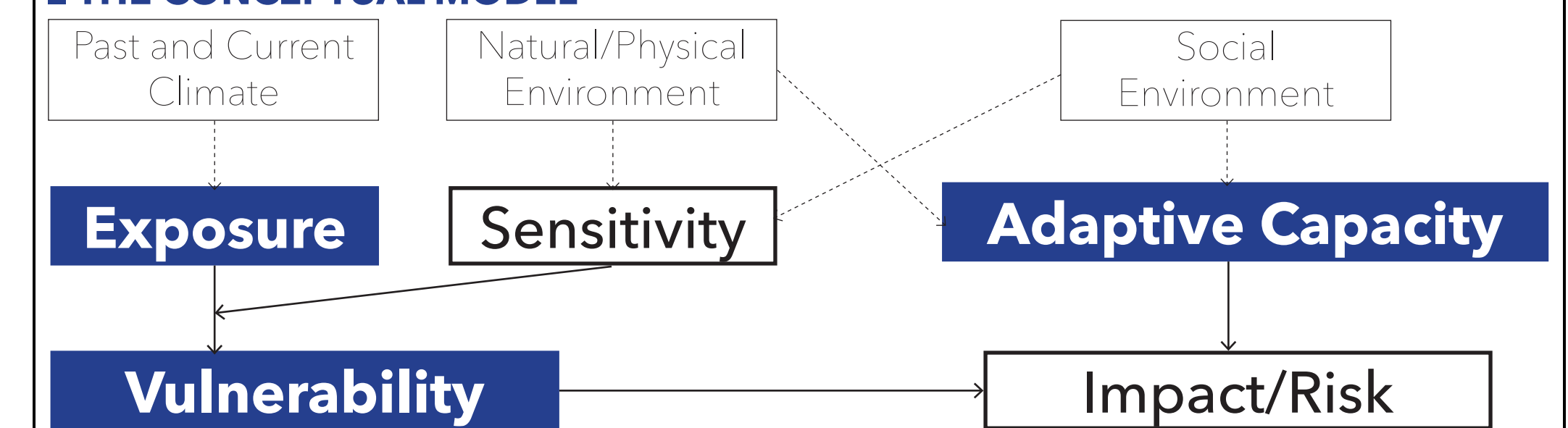
SOCIAL IMPACTS

THE CONSEQUENCES

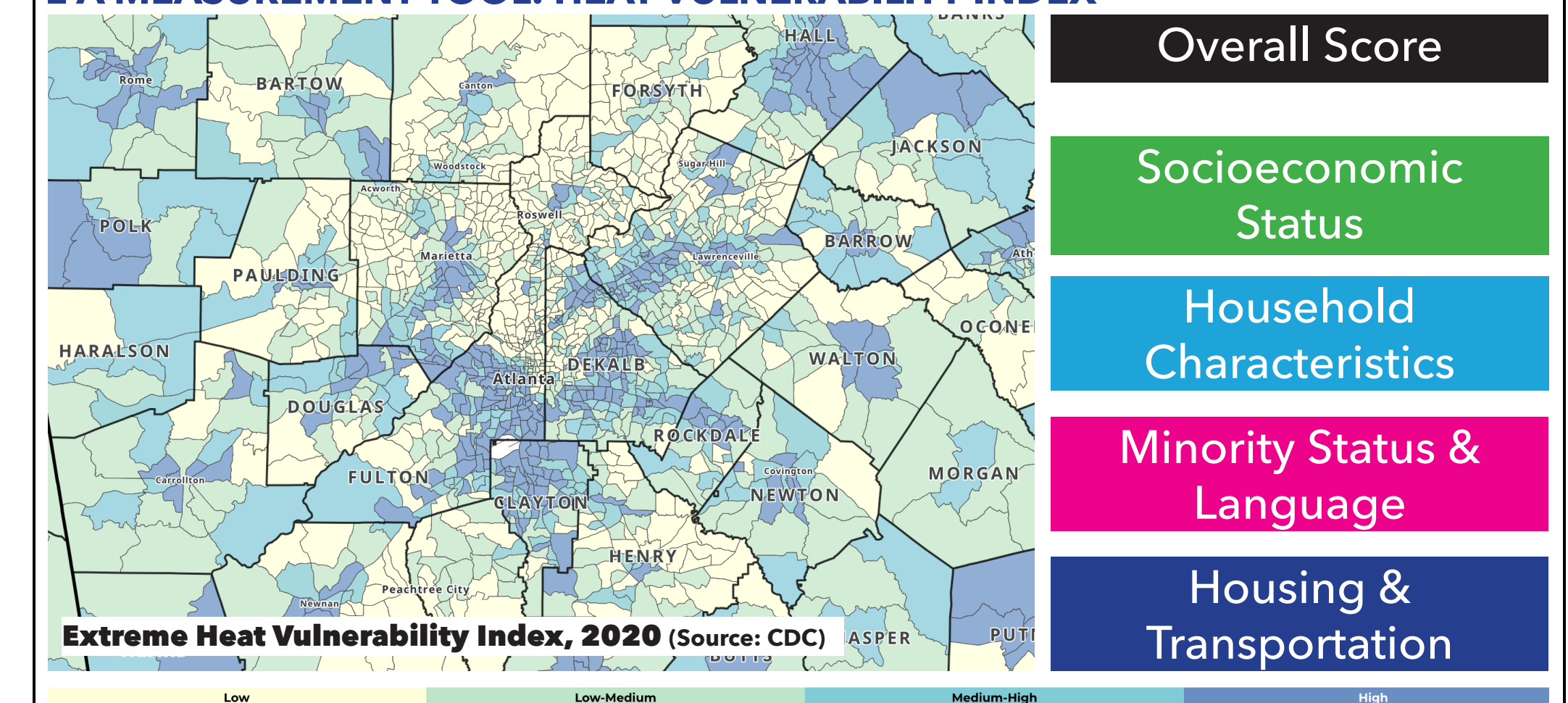


The social impacts of climate change result from a combination of **climate exposure, population vulnerability**, and **adaptive capacity**. Proper planning, education, and action are essential to heat-related illnesses prevention.

THE CONCEPTUAL MODEL



A MEASUREMENT TOOL: HEAT VULNERABILITY INDEX



CASE STUDY: HOUSING CONDITION AND HEAT VULNERABILITY IN ATLANTA

