End hunger, achieve food security and improve nutrition and promote sustainable agriculture

THE GLOBAL GOALS
For Sustainable Development

Target

End hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants to safe, nutritious and sufficient food all year round.
Ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production.
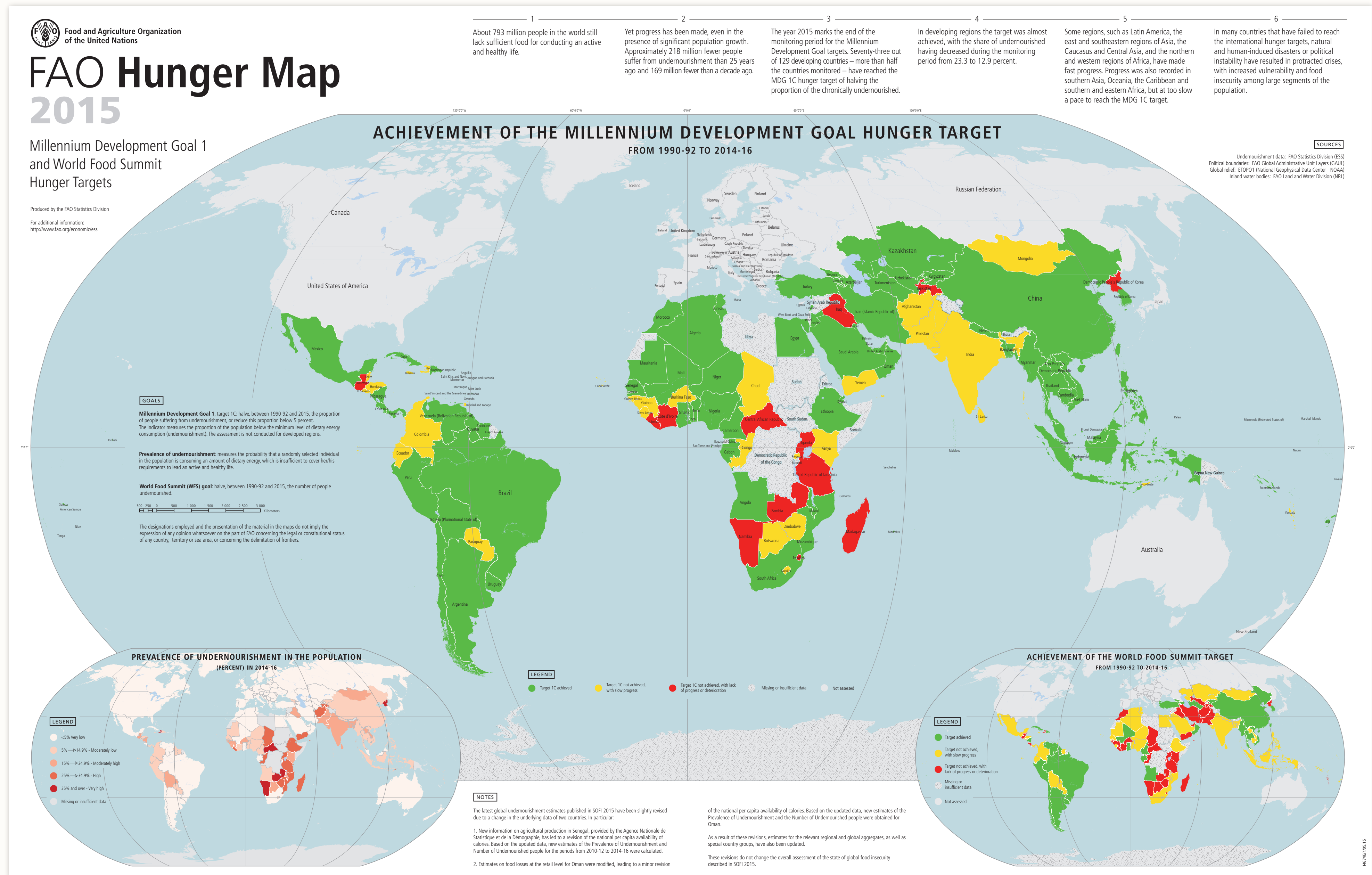
Indicator

Prevalence of Undernourishment (PoU)
Prevalence of popuation with moderate or severe food insecurity
Emissions of greenhouse gasses in agriculture (per hectare of land and per unit of output).

Maps communicate spatial patterns and spatio-temporal analysis results effectively

FAO **Hunger Map** 2015

Mapping the reality of food insecurity in the World

The prevalence of undernourishment (PoU) is analyzed for each country and visualized in the world map. Changes of PoU have been monitored and visually presented in the map. It is shown that the progress of reduction in number of undernourished has been made in all world regions, but at different rates.

Between the monitoring period of 1990-2015, more than 50% of the developing countries have at least halved the propoportion of the chronically undernourished. But the map also shows that many countries still have not reached the international hunger target, with increased vulnerability and food insecurity among large segments of the population.
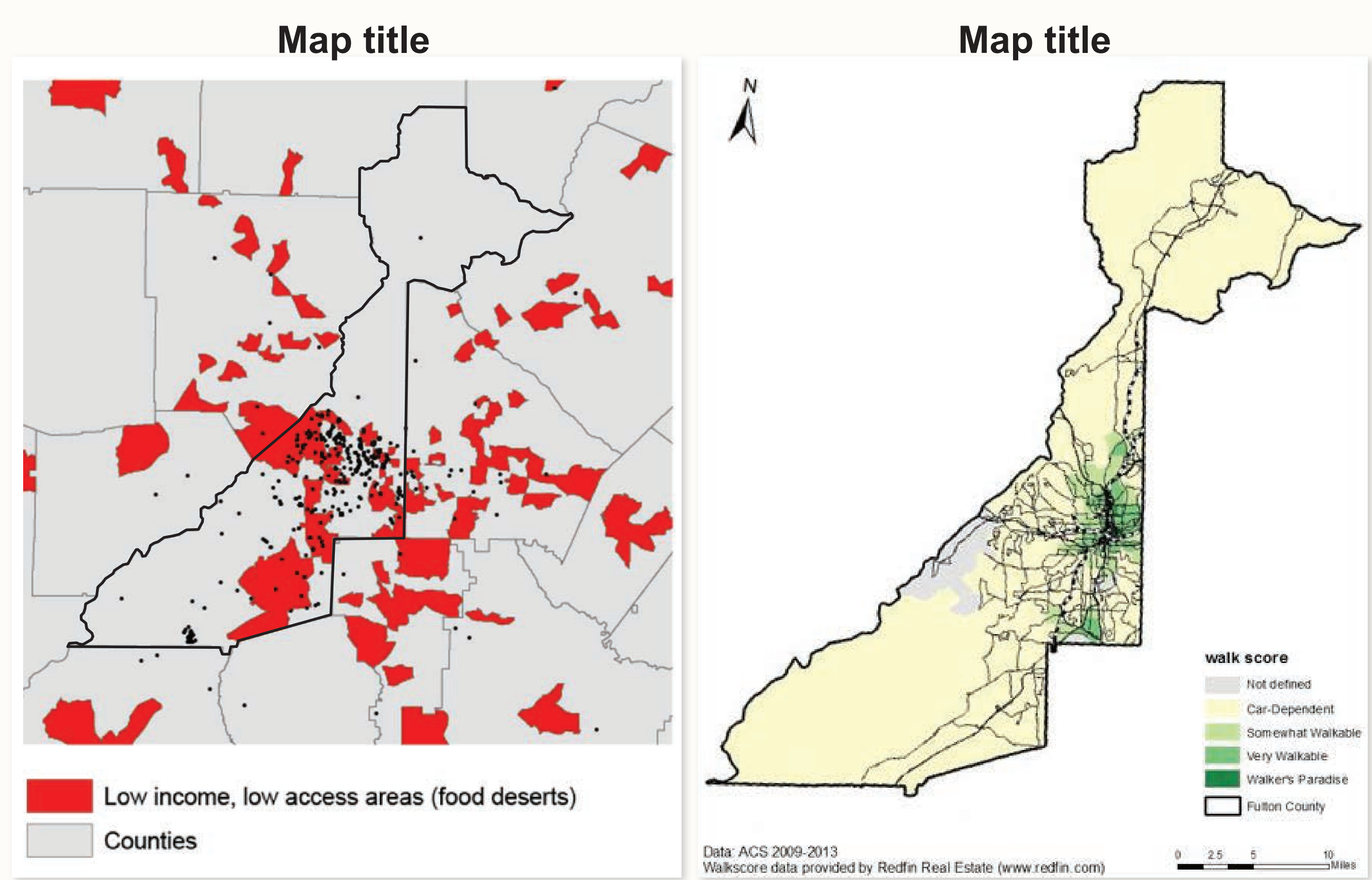
Sustainable agriculture

GIS and mapping have been used as enabling technology for sustainable agriculture and food production. The GIS and GPS-enabled mobile device technologies allow planners, agronomists and farmers to research and devise for resilient agricultural practices and better productivity.
For example, emissions of greenhouse gasses per hectare of land and per unit of output can be accurately estimated based on precise geolocation, observation, and measurement.

Map source: Esri book
GIS for sustainable agriculture

Prevalence of population with moderate or severe food insecurity at fine urban and regional scales

The prevalence of food insecurity also needs to be studied at the local level. This is often done with special consideration of the income level and people's spatial accessibility to healthy food. The mapping of the analysis results helps to identify areas where improvements are urgently needed. The maps below show such areas in Atlanta, USA.

Map title

Low income, low access areas (food deserts)
Counties

Map title

walk score
Not defined
Car-Dependent
Somewhat Walkable
Very Walkable
Walker's Paradise
Fulton County

Data: ACS 2009-2013
Walkscore data provided by Redfin Real Estate (www.redfin.com)

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The ICA **Commission on Geospatial Analysis and Modeling** focuses on spatial analysis, modeling and data mining, often with links to the geovisualization and visual analytical approaches. The commission encourages consorted efforts on cutting-edge or emerging research directions related to geospatial data and problems.

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