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GIS & Mapping Tools

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1. GIS in the library
2. Census geographies refresher
3. Where to explore Census data (& more)

What is GIS?

GIS in the library

“GIS-Lite” tools

- Google Earth & Maps
- StoryMap JS
- Datawrapper & other viz tools

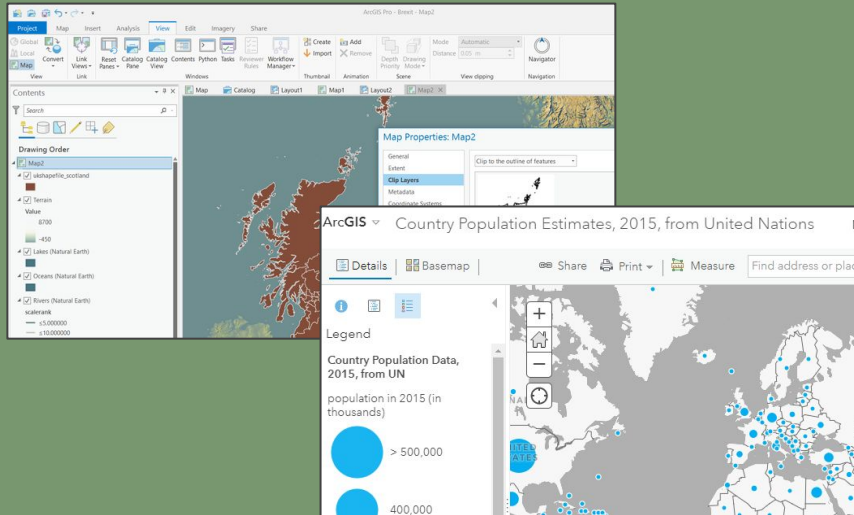
Full GIS tools

Databases w/GIS features



Full GIS tools

Create and view maps
AND
Analyze and manage data



Esri ArcGIS

A suite of GIS software and tools from Esri.

- ArcGIS Online
- ArcGIS Pro (Desktop Software)

QGIS

Free and open-source desktop software



GIS in the library

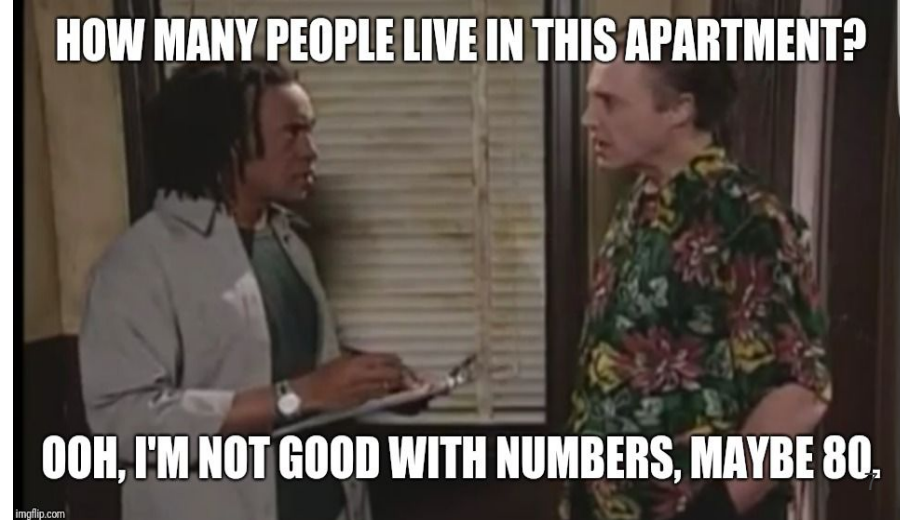
Databases w/GIS features

- Social Explorer
- SimplyAnalytics
- Policy Map
- Data.gov & more!

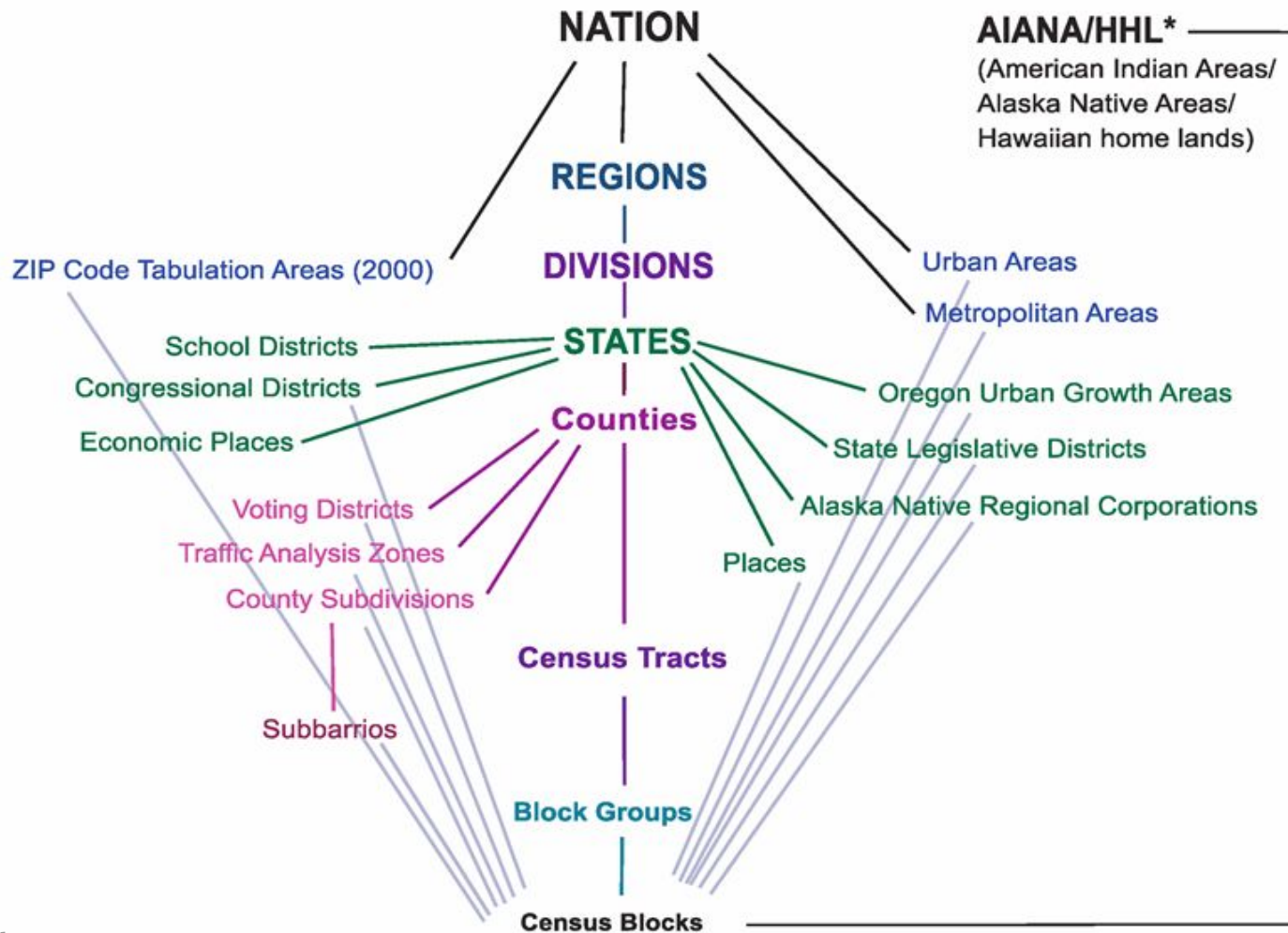
NEW: data.census.gov

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Quick refresher of Census geographies

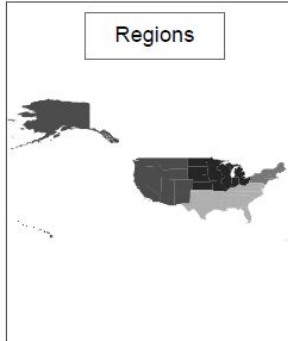


Basic Census Geographies



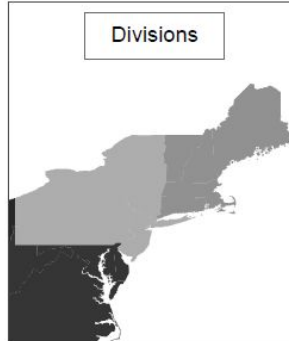
Census Bureau Geographies Part 1

These geographies are the most commonly used for mapping census data. They cover the entire area of the US and are nested, which means that smaller features fit within larger features and boundaries do not overlap.



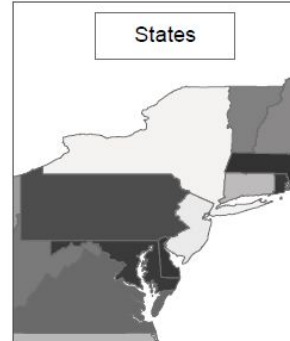
Regions

Large areas composed of several states, which are often used to describe national economic trends.



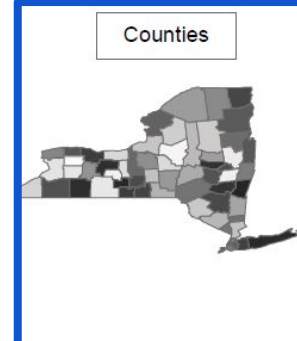
Divisions

Sub-regions that are also frequently used to describe regional differences in national trends.



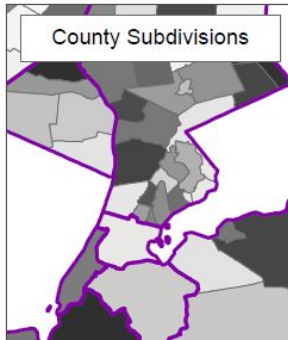
States

States are the largest legal entities within the U.S. Appropriate for mapping differences between states but not for national distributions.



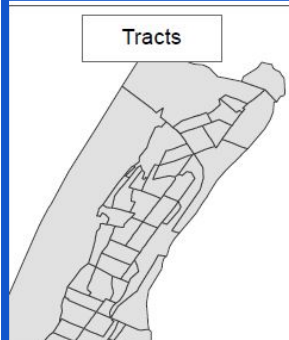
Counties

Counties are the largest legal entities within states. Good for mapping national or local patterns.



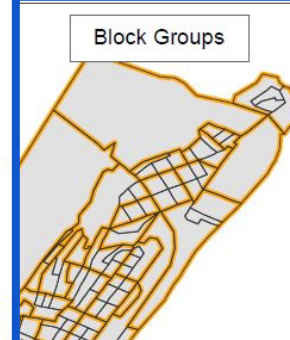
County Subdivisions

Consists of two entities: Municipal Civil Divisions (MCDs) which are legal entities within counties, and Census County Divisions (CCDs) which are statistical areas created by the bureau in states that lack MCDs.



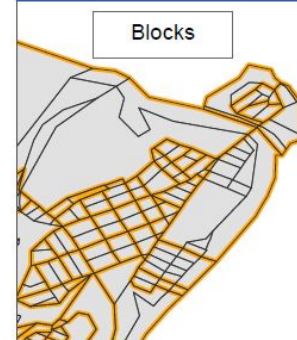
Tracts

Relatively permanent statistical divisions that were designed to have between 1500 and 8000 people, with an ideal size of 4000.



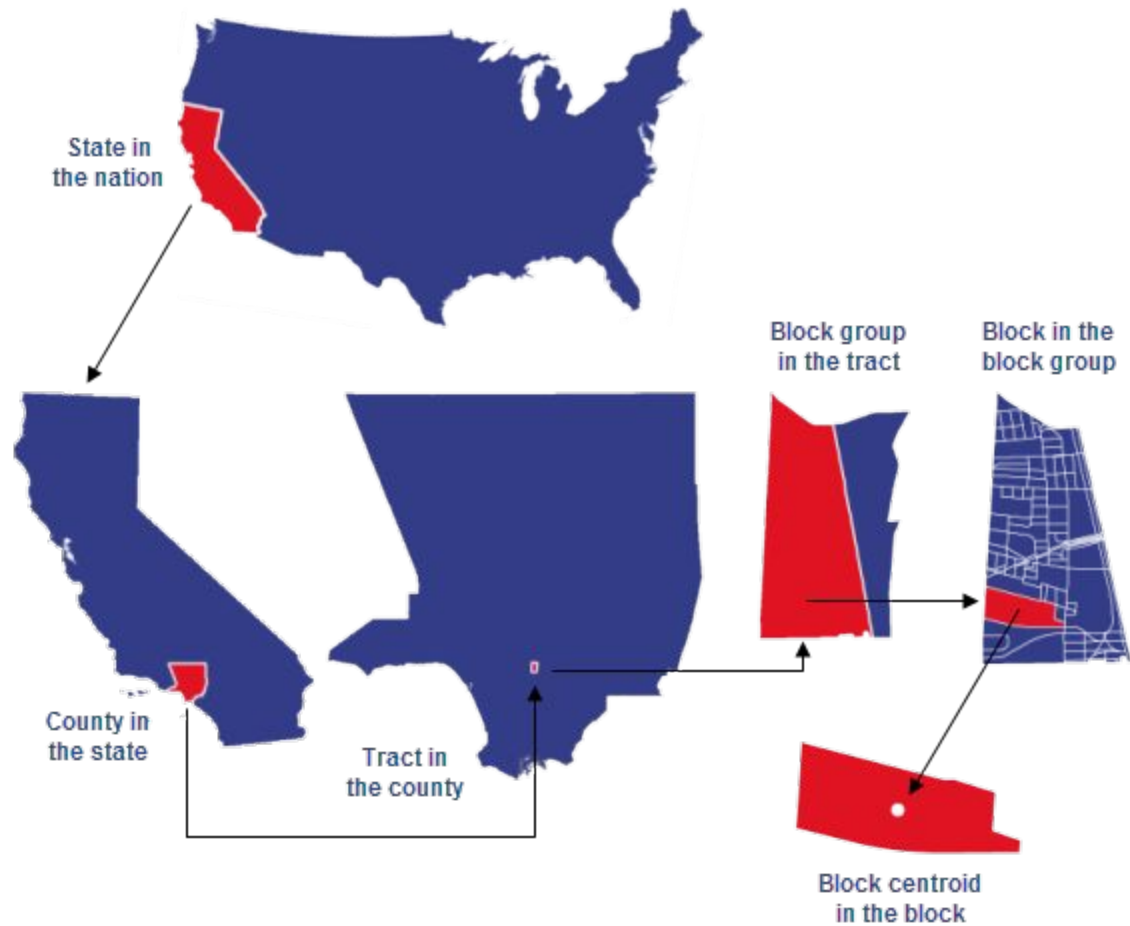
Block Groups

A cluster of census blocks. Block groups generally have a population between 600 and 3000 people, with an ideal size of 1500.



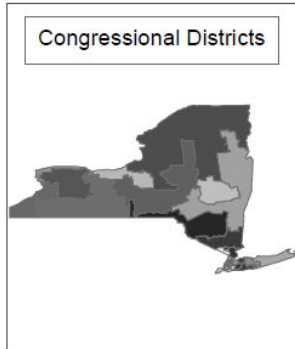
Blocks

The smallest census geographic unit. Blocks are bounded on all sides by visible features (roads, rivers, railroad tracks) and by invisible boundaries (property lines, administrative boundaries).



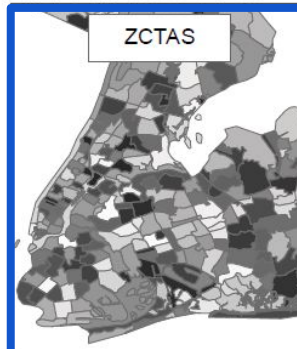
Census Bureau Geographies Part 2

These geographies are not as commonly used for mapping census data. They may or may not cover the entire area of the US and do not always nest with other layers, meaning that their boundaries may overlap with other boundaries.



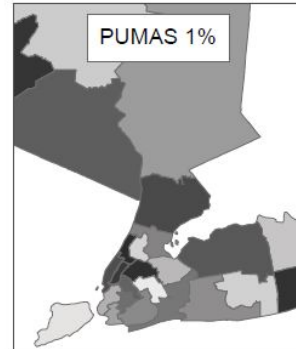
Congressional Districts

435 areas from which legislators are elected to the US House of Representatives; the boundaries are updated every two years. Generally not practical for thematic mapping.



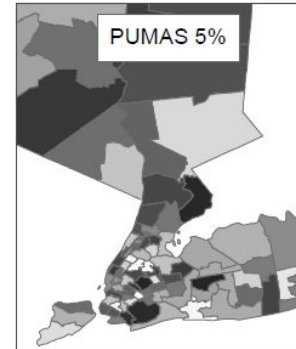
ZCTAS

Zip Code Tabulation Areas were created by the Census Bureau to approximate USPS Zip Codes, which are difficult to map. Commonly used for mapping marketing data.



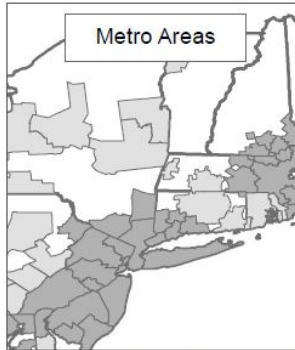
PUMAS 1%

Statistical entities created for mapping microdata (individual census records). 1% PUMAS have at least 400,000 people and are aggregations of the smaller 5% PUMAS.



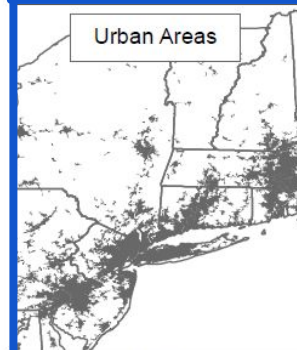
PUMAS 5%

Statistical entities for mapping microdata. They contain at least 100,000 people and are aggregations of census tracts.



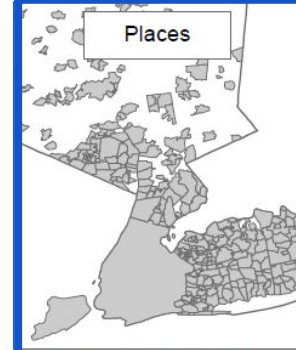
Metro Areas

Aggregations of urban counties. Metro Statistical Areas (MSAs) contain places with a minimum population of 50,000. Consolidated Metro Areas (CMSAs) have over 1 million people. Primary Metro Areas are subdivisions of CMSAs.



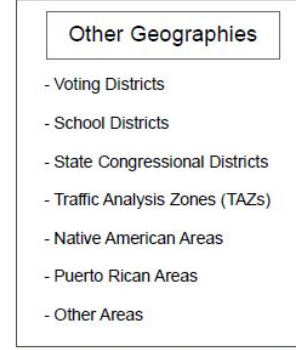
Urban Areas

A central place and adjacent areas with a density of at least 1,000 people per square mile that together have a minimum population of at least 50,000.



Places

Discrete areas that include incorporated places, consolidated cities, and census designated places (CDPs). The first two are legal entities, while CDPs are statistical areas that provide data for concentrated areas of population that are identifiable by name but are not legally incorporated.



Other Geographies

- Voting Districts
- School Districts
- State Congressional Districts
- Traffic Analysis Zones (TAZs)
- Native American Areas
- Puerto Rican Areas
- Other Areas

There are several other areas that the Census Bureau tabulates data for. Some span the entire country while others exist in specific parts of the country.

Where to explore Census data

Social Explorer

- Tool for analyzing historical demographic data and social characteristics like religion, voting, and health
- Provides data to census tract and some to block group level
- Includes some international data
- [Social Explorer access through UNCG Library](#)

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SimplyAnalytics

- Tool for analyzing demographic and marketing data
- Provides data to census tract and some to block group level
- Creates basic and specialized reports and maps for the US
- [SimplyAnalytics access through UNCG Library](#) via NC LIVE*

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PolicyMap

- Tool for analyzing demographic, social, and quality of life data
- Provides data to city or county and some to census tract and block group level
- Generate reports and view suggested datasets
- **IMLS Public Library Survey Data**
- [PolicyMap access through UNCG Library](#)

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Related Resources @ UNCG

- [UNCG GIS Libguide](#)
- [UNCG Data Libguide](#)
- [Library Database Tutorials for Demographic Data and Statistics on YouTube](#)

Let's look at some examples!

Questions?

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Need help with GIS or data?

[Schedule an appointment with me](#)