To Nest, or Not to Nest, That is the Quest

May 12, 2022

James Castagneri
U.S. Census Bureau, Geographer, Denver Regional Office
James.d.castagneri@census.gov

Lacey Loftin
U.S. Census Bureau, Data Dissemination and Training Branch
Lacey.e.loftin@census.gov
Meet Your Instructors

Jim Castagneri is a Denver-based Geographer at the U.S. Census Bureau with over 35 years’ experience. He conducts geographic outreach programs for twelve states from Canada to Mexico. Early in his career, Jim was involved in the creation of the TIGER system. More recently, Jim has played a pivotal role in bringing geospatial analysis to survey management and census field operations. He currently specializes in census statistical geography and Geographic Information Systems.

Lacey Loftin is a statistician with the United States Census Bureau. In the 19 years that she has been with the agency, she has served as an Analyst for the Economic Census, supervised data collection operations, acted as a congressional liaison during the 2010 Census, and worked to create the Statistics in Schools program. Lacey’s time is now focused on outreach to organizations and governments, sharing data, tools and useful applications.
Data Dissemination and Training

 ✓ Bring our data experts to you.
   Request a free data training for your organization.

 ✓ Receive our Data Gems.
   These short “how-to” videos are an easy and quick way to increase your knowledge of Census data. Get them in your inbox!

 ✓ Get access to our Courses.
   You will learn-at-your-own-pace with these video-tutorials designed for different skill levels.

 ✓ Interact with our instructors via Webinars.
   Learn about our data releases and tools while attending these live virtual classes.

Contact us:
Census.askdata@census.gov
1-844-ASK-DATA

Share your ideas and feedback at census.academy@census.gov
Objectives

✓ Understand the basics of Census Geography
✓ Discuss the requirements for Census Tracts, Block Groups and Blocks
✓ Review examples of nesting geography
✓ Evaluate Census Tract changes over time
✓ Learn to access data in data.census.gov
Overview of Census Geography

Two main types of Census geography:

• Legal or Administrative
• Statistical
Basics of Legal or Administrative Geography

• Governing body
• Boundaries change at the will of the governing body
• New geographies can be formed by a new incorporation
Examples of Legal or Administrative Geography

- States
- American Indian Reservations
- Counties
- Places
- Congressional Districts
- School Districts
- Voting Districts
Basics of Statistical Geography

• No gaps and no overlaps
• Boundaries are created and maintained by the U.S. Census Bureau
• Are created and updated only for statistical purposes
• The U.S. Census Bureau is the geographical data steward for the U.S. Government
Examples of Statistical Geography

- Census Tract
- Census Block Group
- Census Block
## Census Tracts

<table>
<thead>
<tr>
<th>Statistical area</th>
<th>Primary purpose</th>
<th>Nationwide wall-to-wall coverage</th>
<th>Geography nests within</th>
<th>2020 Census population criteria</th>
<th>2020 Census housing unit criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard census tract</strong></td>
<td>Boundary continuity. Data comparability.</td>
<td>Yes</td>
<td>County</td>
<td>Optimum: 4,000 Minimum: 1,200 Maximum: 8,000</td>
<td>Optimum: 1,600 Minimum: 480 Maximum: 3,200</td>
</tr>
</tbody>
</table>
| **Special use**            | Distinguish areas of little or no population that have a specific type of land use. Large water bodies. | No                               | County                 | Population Threshold = Little/None or must be within the standard census tract threshold. Area Measurement Thresholds:  
  - Within Urban Area = 1 sq. mile.  
  - Outside Urban Area = 10 sq. miles.  
  - Inland water body = 100 sq. miles.  
  - Water body not coextensive with a water only census tract = none. |
## Block Groups

<table>
<thead>
<tr>
<th>Statistical area</th>
<th>Primary purpose</th>
<th>Nationwide wall-to-wall coverage</th>
<th>Geography nests within</th>
<th>2020 Census population criteria</th>
<th>2020 Census housing unit criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard block group</td>
<td>Form the geographic framework within which census blocks are numbered. Smallest area for which demographic characteristics are produced from the American Community Survey (ACS).</td>
<td>Yes</td>
<td>Census Tract</td>
<td>Minimum: 600</td>
<td>Maximum: 1,200</td>
</tr>
</tbody>
</table>
Country
State within the Country
County within the State
Tract within the County

State: 48
County: 453
Tract: [Blank]
Block Group: [Blank]
Block: [Blank]
Block Group within the Tract

State: 48
County: 453
Tract: 036000
Block Group: 
Block: 

Map with regions and numbers.
Block

State: 48
County: 453
Tract: 036000
Block Group: 1
Block: 1006
State within the Country

[Map of North America highlighting the state of Texas]

- State
- County
- Tract
- Block Group
- Block
Tract within the County

48 439

State  County  Tract  Block Group  Block
Block Group within the Tract

State: 48
County: 439
Tract: 001017
Block Group: 
Block: 

Map showing the block group within the tract.
Block within a Block Group
Block

- State: 48
- County: 439
- Tract: 001017
- Block Group: 2
- Block: 2036
Block
Tracts over Time

• First used in the 1910 large urban areas
• Full coverage for the 1990 Decennial

• As the population in an area grows, how do tracts change while maintaining comparability?
2000 Census
2010 Census
What is TIGER?
Digital Network of Lines
Recap

- Census Tracts, Block Groups, and Blocks
- Changes to Census Tracts over time
- TIGER
- Using data.census.gov
THANK YOU