How to Use American Community Survey (ACS) Geodatabase Files and ArcMap

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Outline

- **American Community Survey (ACS) basics**

- Location of Census Geodatabases

- Downloading Geodatabase

- Joining feature class to tables

- Using metadata tables to identify full descriptions

- Stay in touch

- Questions

United States™ Census Bureau

U.S. Department of Commerce
Economics and Statistics Administration
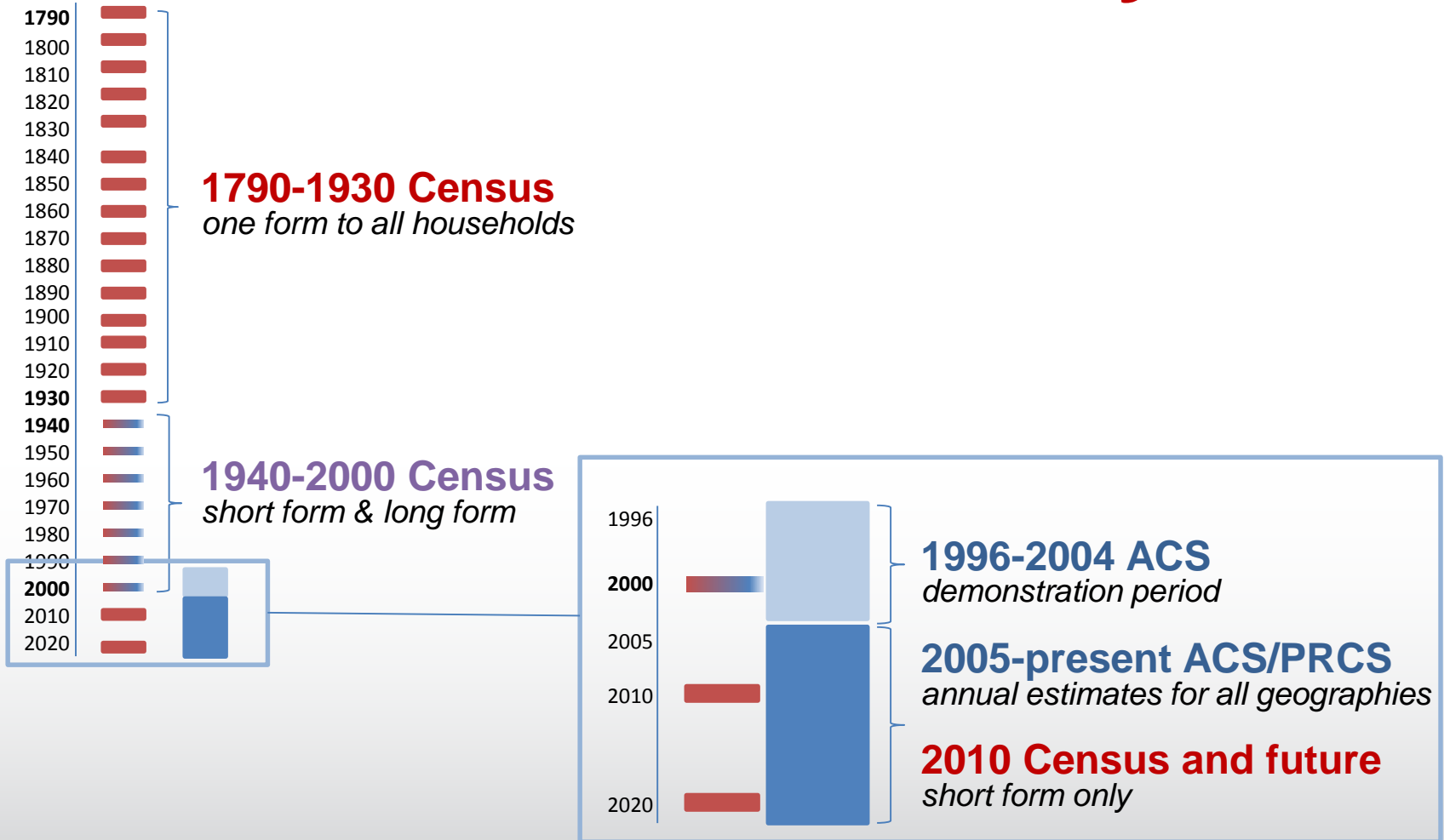U.S. CENSUS BUREAU
census.gov

ACS Basics

- Ongoing monthly survey sent to 3.5 million addresses per year to produce detailed population and housing estimates each year

  - Visit 20,000 Group Quarter facilities and sample approximately 194,000 residents each year

- Designed to produce *critical information on small areas and small population groups* previously collected on the decennial long form

- Covers 35+ topics and supports over 300 known Federal Government uses

- Data released annually

  - 1-year estimates (12 months of data)

  - 5-year estimates (60 months of data)

Census / ACS History

1790
1800
1810
1820
1830
1840
1850
1860
1870
1880
1890
1900
1910
1920
1930

1790-1930 Census
one form to all households

1940
1950
1960
1970
1980
1990
2000
2010
2020

1940-2000 Census
short form & long form

1996
2000
2005
2010
2020

1996-2004 ACS
demonstration period

2005-present ACS/PRCS
annual estimates for all geographies

2010 Census and future
short form only

How is the ACS Different from a Census?

	ACS	**2010 Census**
purpose	Sample estimates	Official counts
produces	Population characteristics	Population totals
new data every	Year	10 years
data reflect	Period of time	Point in time

ACS Data Collection Process

Online   **Mail**   **Telephone**   **Personal Visit**

Self-Response Modes   Non-Response Modes

ACS Content

Social

Ancestry
Citizenship Status
Disability Status
Educational Attainment &
School Enrollment
Fertility
Grandparents as Caregivers
Language Spoken at Home
Marital History; Marital Status
Migration/Residence 1 Year
Ago
Period of Military Service
Place of Birth
Undergraduate Field of
Degree
Veteran Status
Year of Entry

Demographic

Age
Hispanic or Latino Origin
Race
Relationship to Householder
Sex

Economic

Commuting (Journey to Work)
& Place of Work
Employment Status
Food Stamps/SNAP
Health Insurance Coverage
Income and Earnings
Industry, Occupation, & Class
of Worker
Poverty Status
Work Status Last Year

Housing

Bedrooms
Computer and Internet Use
House Heating Fuel
Kitchen Facilities
Occupancy/Vacancy Status
Occupants Per Room
Plumbing Facilities
Rent
Rooms
Selected Monthly Owner Costs
Telephone Service Available
Tenure (Owner/Renter)
Units in Structure
Value of Home
Vehicles Available
Year Householder Moved into Unit
Year Structure Built

35+ Topics ➡ **1000+ Tables** ➡ **11 Billion Estimates**

Table IDs

B 17 001 A

Poverty Status in the Past 12 Months by Sex by Age (White Alone)

- B=Table Type
  - Detailed Table/Base Table
- 17=Subject
  - Poverty Status
- 001=Sequential Number
- A=Race Iteration (Selected Tables)
  - White Alone

census.gov/programs-surveys/acs/guidance/which-data-tool/table-ids-explained.html

Selected Census Geographic Concepts

Nation

Metropolitan and Micropolitan Areas

Urban Areas

Regions

American Indian Areas/ Alaska Native Areas/ Hawaiian Home Lands

Zip Code Tabulation Areas

States

Congressional Districts

School Districts

Places

Counties

Public Use Microdata Areas (PUMAs)

Alaska Native Regional Areas

State Legislative Districts

Census Tracts

Block Groups

930,000 Geographic Areas

35,000+ Communities

Availability of ACS Data Products

Estimated Population of Geographic Area	1-Year Estimates	1-Year Supplemental Estimates	5-Year Estimates
65,000 or more	X	X	X
20,000 to 64,999		X	X
Less than 20,000			X
Planned Release Date	September 14	October 19	December 7

census.gov/programs-surveys/acs/news/data-releases.html

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Background Information

- Geodatabases bring together geography from the 2015 TIGER/Line Shapefiles and data from the 2011-2015 American Community Survey (ACS) 5-year estimates

- The public and Census partners wanted an easier way to join ACS data to geographic boundaries

Census.gov

TIGER Products

TIGER/Line with Selected Demographic and Economic Data

Product	Best For...	File Format	Type of Data	Level of Detail	Descriptive Attributes	Vintages Available
TIGER/Line Shapefiles	Most mapping projects--this is our *most comprehensive dataset*. Designed for use with GIS (geographic information systems).	Shapefiles (.shp) and database files (.dbf)	Boundaries, roads, address information, water features, and more	Full detail (not generalized)	Extensive	2006 - 2016, CD 113
TIGER Geodatabases	Useful for users needing national datasets or all major boundaries by state. Designed for use in ArcGIS. Files are extremely large.	Geodatabase (.gdb)	Boundaries, roads, address information, water features, and more	Full detail (not generalized)	Limited	2013-2016
TIGER/Line with Selected Demographic and Economic Data	Data from selected attributes from the 2010 Census, 2006-2010 through 2010-2014 ACS 5-year estimates and County Business Patterns (CBP) for selected geographies. Designed for use with GIS.	Shapefiles (.shp) and Geodatabases	Boundaries, Population Counts, Housing Unit Counts, 2010 Census Demographic Profile 1 attributes, 2006-2010 through 2010-2014 ACS 5-year estimates data profiles, CBP data.	Full detail (not generalized)	Limited	2012 CBP, 2010, 2006-2010 to 2011-2015 ACS 5-Year Estimates
Cartographic Boundary Shapefiles	Small scale (limited detail) mapping projects clipped to shoreline. Designed for thematic mapping using GIS.	Shapefiles (.shp)	Selected boundaries	Less detail (generalized)	Limited	2013-2016, 2010, 2000, 1990
KML - Cartographic Boundary Files	Viewing data or creating maps using Google Earth, Google Maps, or other platforms that use KML.	KML (.kml)	Selected boundaries	Less detail (generalized)	Limited	2013-2016
TIGERweb	Viewing spatial data online or streaming to your mapping application.	Interactive viewer, HTML data files, plus REST and WMS map services	Boundaries, roads, address information, water features, and more	Detailed	Extensive	Current, 2015 ACS, 2014 ACS, 2010 Census

2011 – 2015 Detailed Tables

www.census.gov/geo/maps-data/data/tiger-data.html

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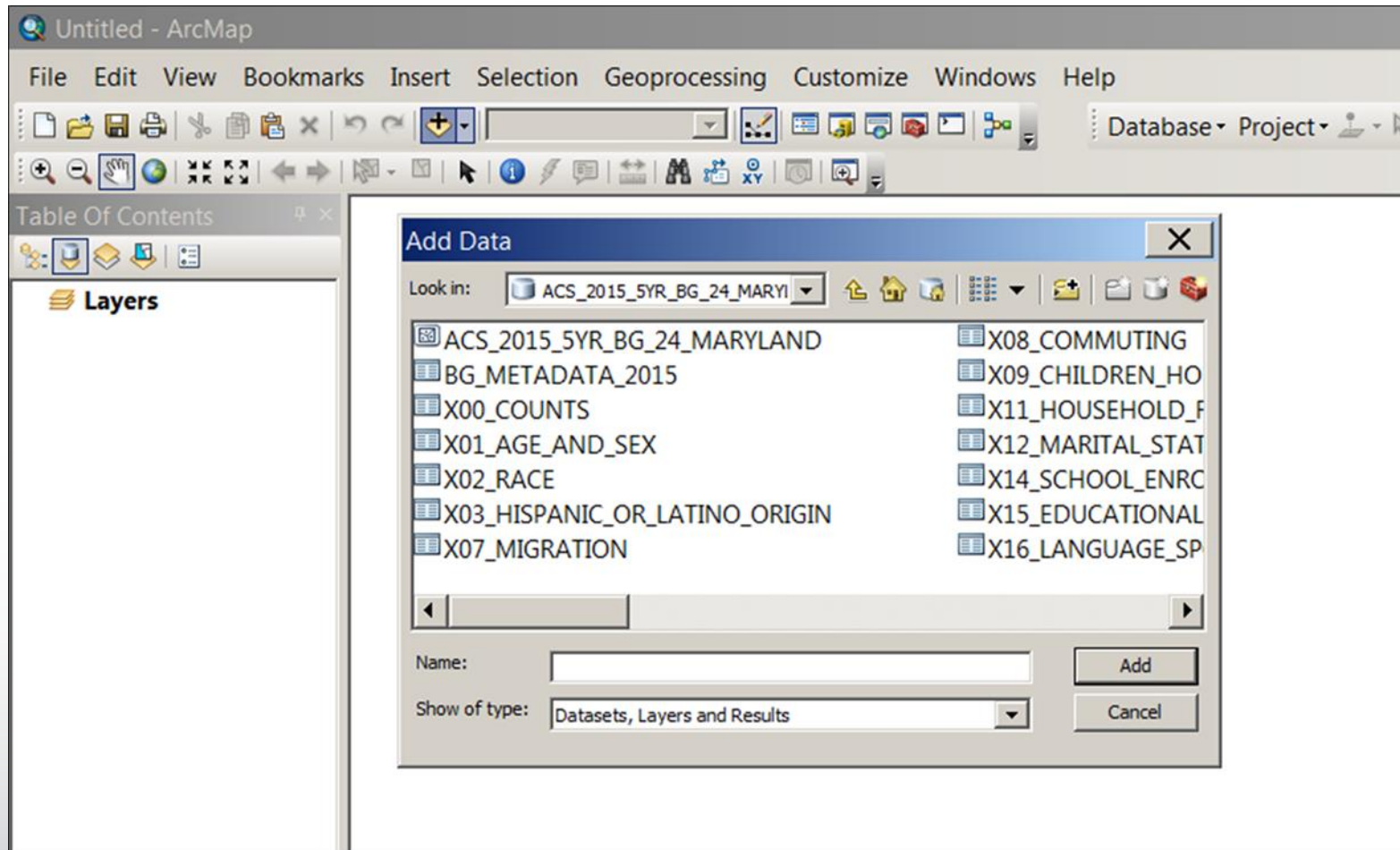- Joining feature class to tables

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Choose Census Geography of Your Choice

TIGER/Line® with Selected Demographic and Economic Data

A limited set of TIGER/Line Shapefiles are available pre-joined with data in geodatabase and shapefile format.

American Community Survey 5-Year Estimates — Geodatabase Format

▾2011 - 2015 Detailed Tables

These geodatabases bring together geography from the 2015 TIGER/Line Shapefiles and data from the 2011-2015 American Community Survey (ACS) 5-year estimates.

Download the Geodatabases

- American Indian Areas
  - American Indian/Alaska Native/Native Hawaiian Area
  - Alaska Native Regional Corporation
  - Tribal Block Group
  - Tribal Census Tract
- Block Group - select a state:
  [Select a State ▾] [GO]
- Census Tract - select a state:
  [Select a State ▾] [GO]
- Congressional District (114th Congress)
- Core Based Statistical Areas (CBSAs)
  - Metropolitan/Micropolitan Statistical Area
  - Metropolitan Division
  - Combined Statistical Area
  - New England City and Town Area
  - New England City and Town Area Division

Zipped Files Once Download is Complete

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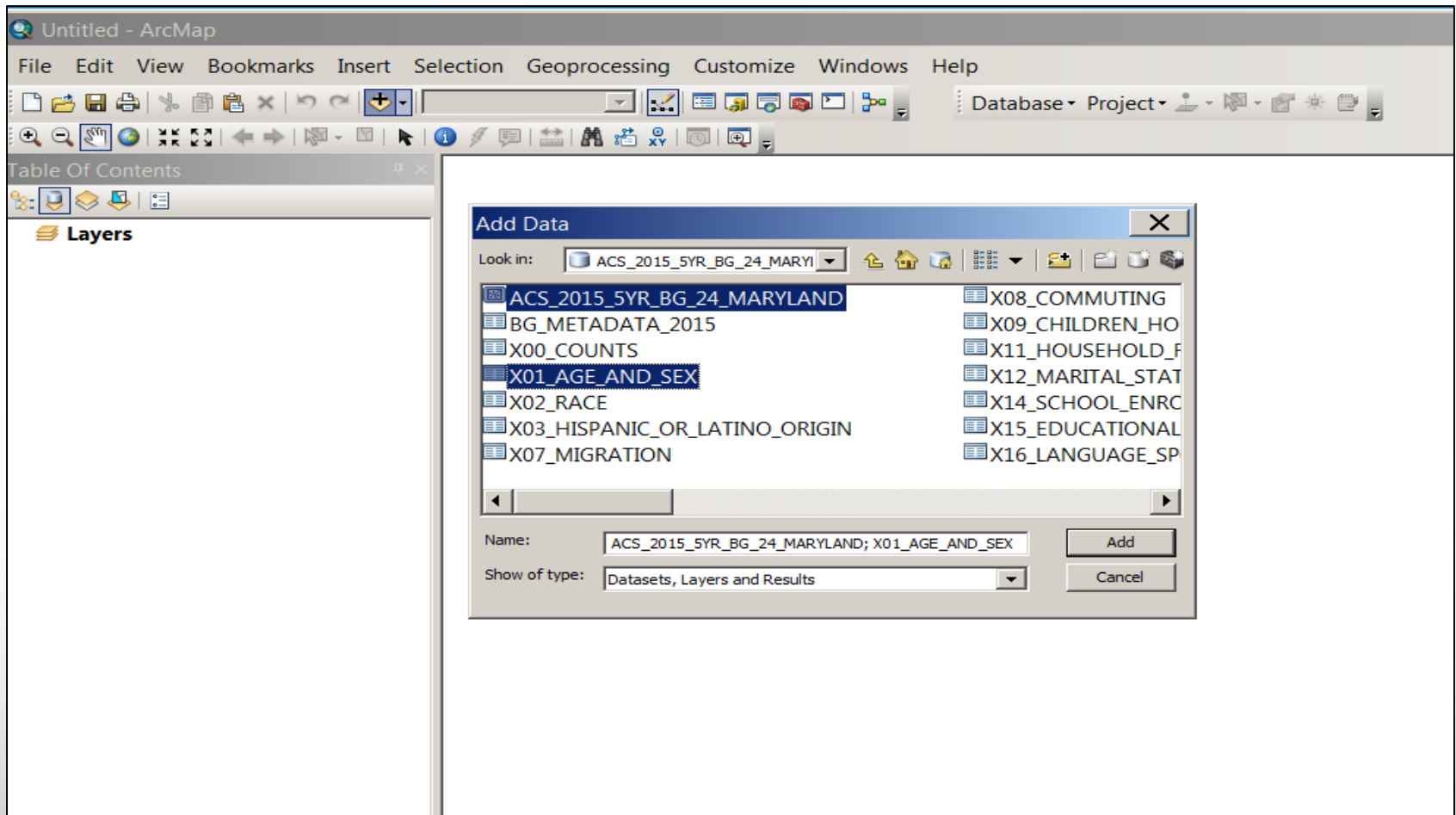- Stay in touch

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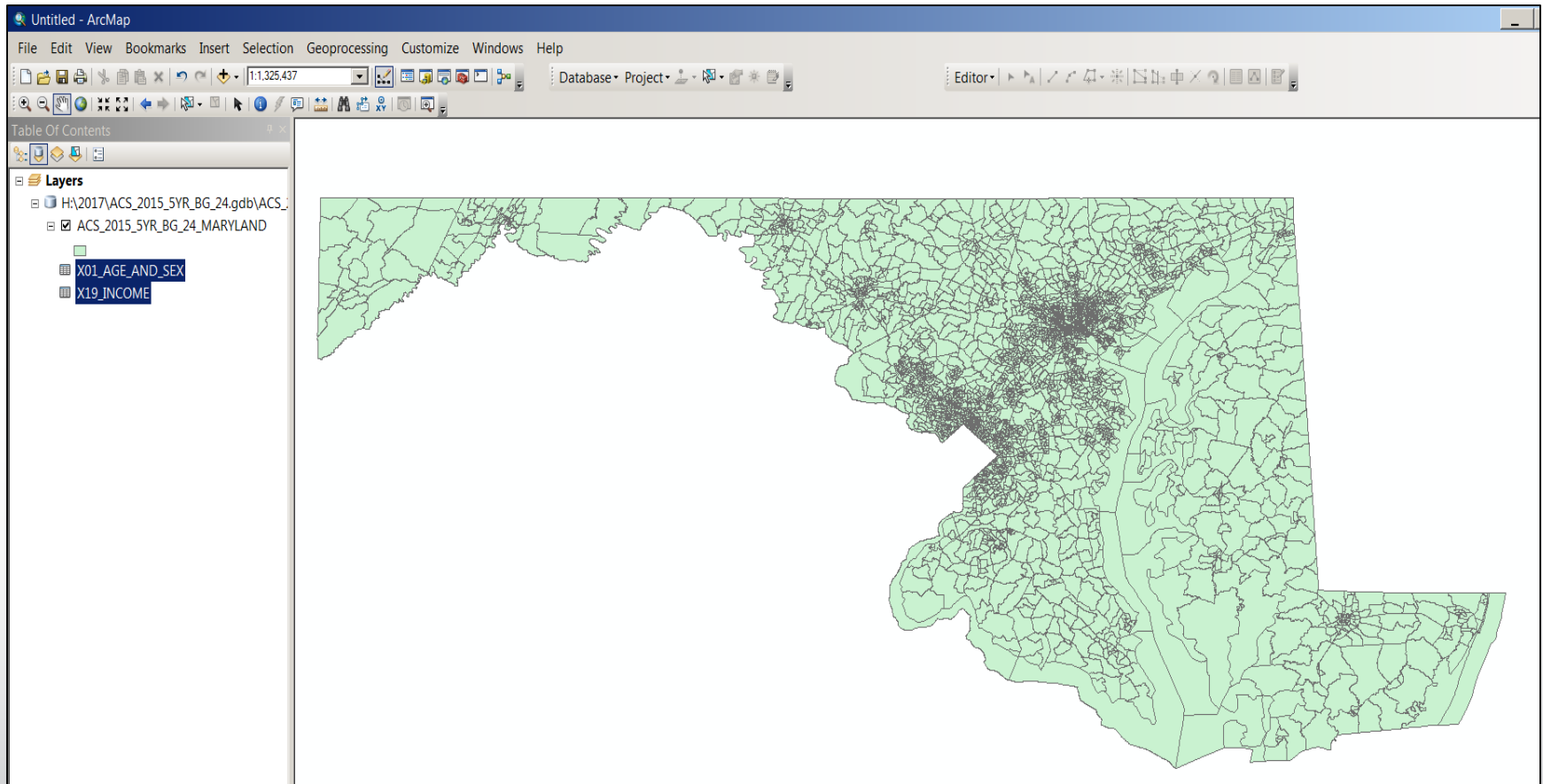# Add to Upload GDB
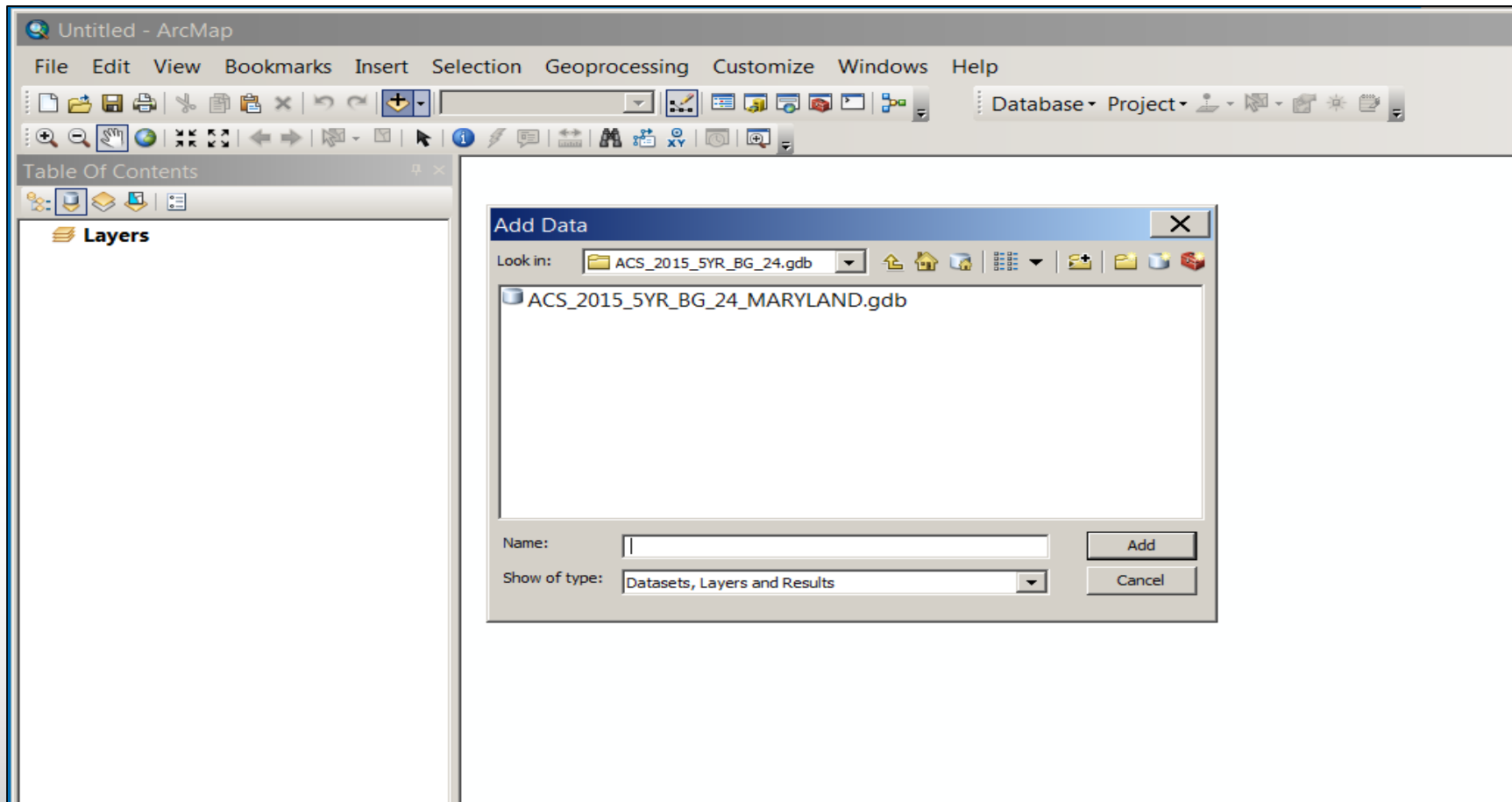
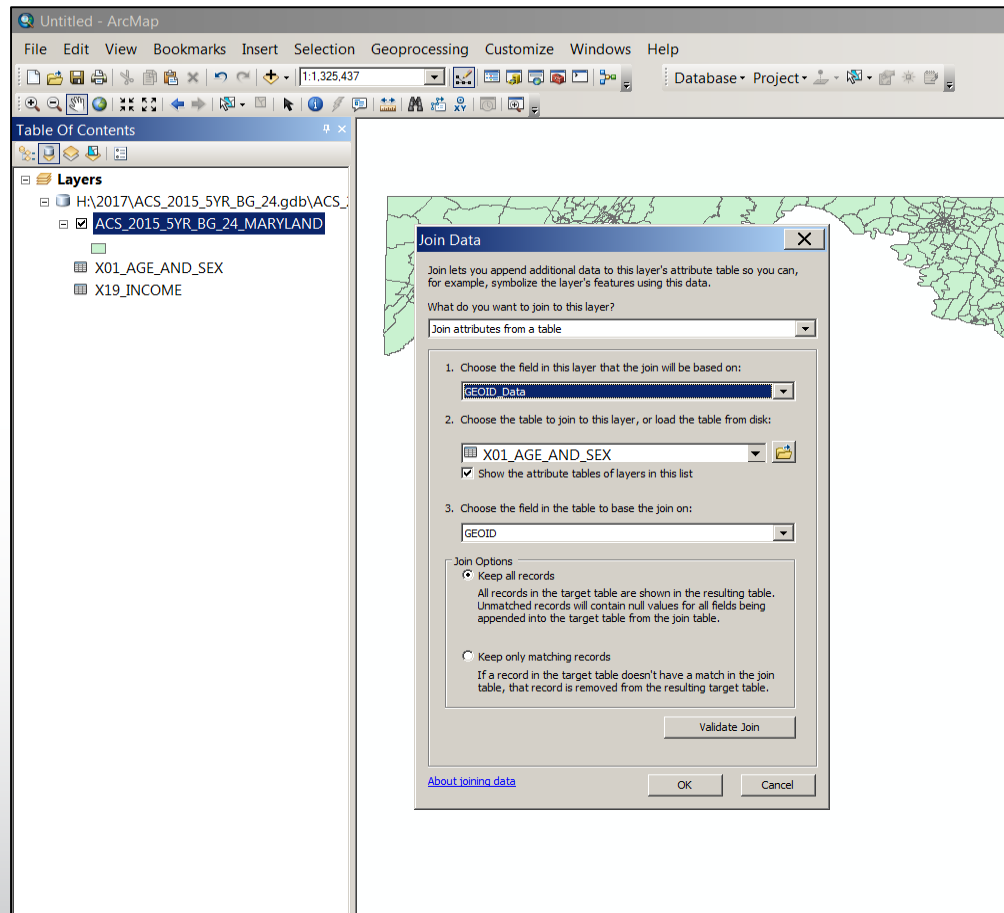# Choose Feature Class and Tables

www.census.gov/geo/reference/mtfcc.html
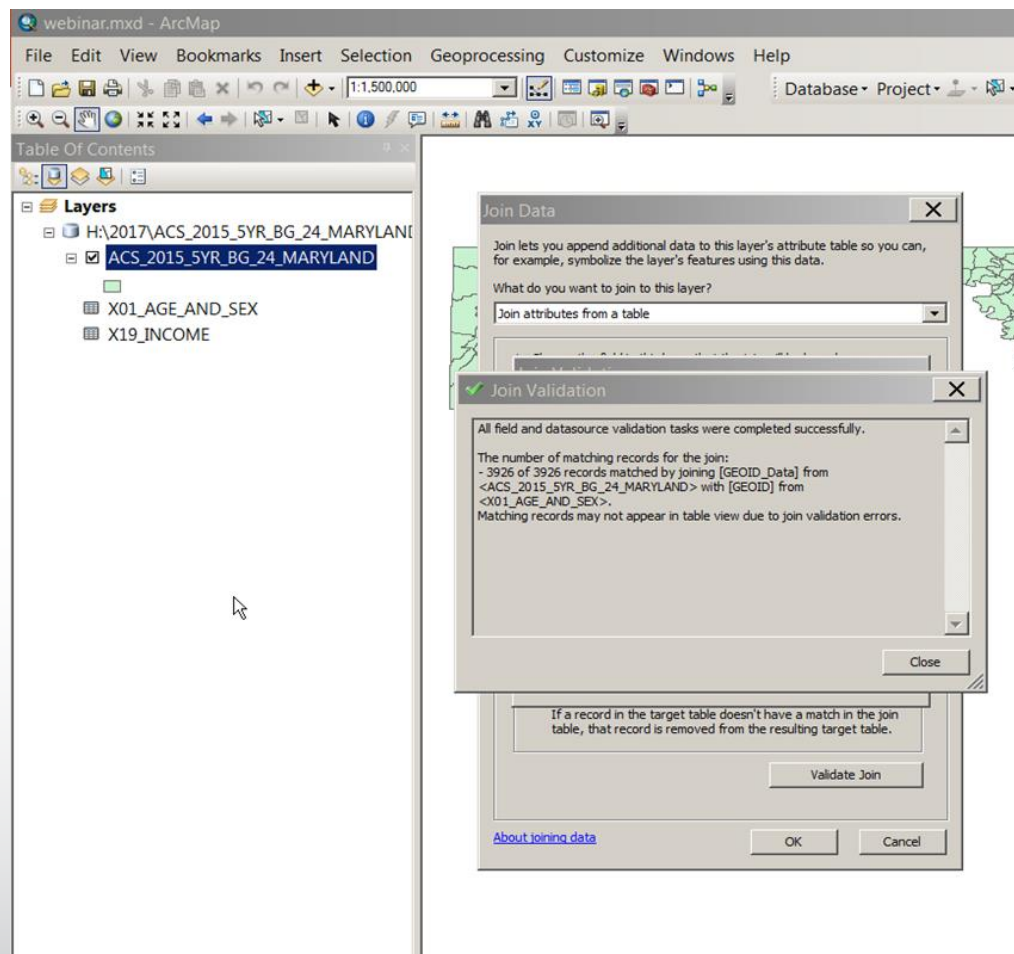
Feature Class, Age and Sex, & Income

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View in ArcMap

Joining the Table to the Feature Class

Validation Check

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Attribute Table When Join Successfully Occurs

ACS_2015_5YR_BG_24_MARYLAND

GEOID *	B01001e1	B01001m1	B01001e2	B01001m2	B01001e3	B01001m3
15000US240010001001	528	158	257	96	0	12
15000US240010001002	1907	229	879	154	69	61
15000US240010001003	1007	250	515	137	13	20
15000US240010002001	862	184	410	93	0	12
15000US240010002002	833	175	427	112	0	12
15000US240010002003	2590	383	1998	315	122	126
15000US240010003001	1658	272	846	195	45	42
15000US240010003002	622	202	373	150	12	21
15000US240010003003	346	110	170	51	0	12
15000US240010004001	701	163	318	108	23	33
15000US240010004002	1382	345	780	241	16	18
15000US240010004003	740	267	308	128	10	15
15000US240010005001	1676	230	936	171	48	48
15000US240010005002	867	229	414	109	0	12
15000US240010006001	2141	307	950	191	57	54
15000US240010006002	627	185	285	105	25	29
15000US240010007001	1499	266	592	157	108	76
15000US240010007002	1965	397	1024	201	135	63
15000US240010008001	1155	183	609	127	51	55
15000US240010008002	1102	247	491	133	83	48

Metadata – Example 1

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Metadata – Example 2

Tips

- When joining tables to the feature class, use the GEOID_Data field *not* the GEOID field

- Metadata can be viewed as a table or text document

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#CensusGeo #ACSdata

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USCENSUS/subscriber/new

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More information online:
https://www.census.gov/geography.html
http://www.census.gov/acs

youtube.com/user/uscensusbureau

instagram.com/uscensusbureau

(800) 923-8282 (Census)
(301) 763-1128 (Geography questions)
(301) 763-1405 (ACS questions)

pinterest.com/uscensusbureau

geo.tiger@census.gov
acso.users.support@census.gov

linkedin.com/company/us-census-bureau

Questions?

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- Purpose:
  - Improve understanding of the value and utility of ACS data
  - Promote information sharing among data users about key ACS data issues and applications
- Membership is free and open to all interested ACS data users
- 2017 ACS Data Users Conference, May 11-12
- Webinars and special sessions at professional meetings planned
- Users group website and online community

acsdatacommunity.prb.org

Need Local Stats?

- Assistance Near You!

  Our regional data staff can help you access local statistics from the ACS or offer training to help build your skills. Contact us at:

  1-844-ASK-DATA

  (1-844-275-3282)

  census.askdata@census.gov