

Neighborhoods at Risk

Data Sources and Methods, Winter 2019



At-Risk Populations

Neighborhoods at Risk uses census tract-level, socioeconomic data from the latest release of the U.S. Census American Community Survey (ACS) 5-year estimates. For each characteristic listed below, the tool provides access to the lower and upper bound estimates using a 90% confidence interval. ACS data on at-risk populations include:

- Percent of families in poverty
- Percent of people without health insurance
- Percent of people with disability
- Percent of housing units that are rentals
- Percent people of color
- Percent minority (including Hispanic and/or people of color)
- Percent of people over 65 years old

Citation:

U.S. Department of Commerce. 2018. Census Bureau, American Community Survey Office, Washington, D.C.; <https://www.census.gov/programs-surveys/acs/>

Flood Hazard

The percent of each census tract that intersects with the 500-year floodplain, which includes all 100-year floodplain areas, was provided by Casey Zuzak, a Risk Analyst with FEMA's Region 3 Mitigation Division.

Citations:

FEMA National Flood Hazard Layer (NFHL). Feb 2018. Flood Risk Database (FRD) Technical Reference; <https://www.fema.gov/national-flood-hazard-layer-nfhl>

Tree Canopy and Impervious Surface

Tree canopy and impervious surface values per census tract were calculated using ArcGIS zonal means based on 30-meter raster files from the 2011 National Land Cover Databases. The 2016 National Land Cover Databases is scheduled for release in December of 2018, and will be used to update the data in Neighborhoods at Risk.

Citations:

Multi-Resolution Land Characteristics Consortium (MRLC), National Land Cover Database 2011; <https://www.mrlc.gov/nlcd2011.php>

Xian, G., Homer, C., Dewitz, J., Fry, J., Hossain, N., and Wickham, J., 2011. The change of impervious surface area between 2001 and 2006 in the conterminous United States. *Photogrammetric Engineering and Remote Sensing*, Vol. 77(8): 758-762.

Homer, C.G., Dewitz, J.A., Yang, L., Jin, S., Danielson, P., Xian, G., Coulston, J., Herold, N.D., Wickham, J.D., and Megown, K., 2015, Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information. *Photogrammetric Engineering and Remote Sensing*, v. 81, no. 5, p. 345-354

Climate History and Projections

Data on climate history and projections were provided by Jim Biard, Laura Stevens, and Liqiang Sun from the North Carolina Institute for Climate Studies (NCSU/CICS-NC) and represent LOCA Scenarios developed for the Fourth National Climate Assessment.

Citations:

North Carolina Institute for Climate Studies (NCSU/CICS-NC); <https://ncics.org/>

Pierce, D.W., D.R. Cayan, and B.L. Thrasher, 2014: Statistical downscaling using Localized Constructed Analogs (LOCA), *J. Hydrometeorology*, 15, 2558-2585. doi:10.1175/JHM-D-14-0082.1

Pierce, D.W., D.R. Cayan, E.P. Maurer, J.T. Abatzoglou, and K.C. Hegewisch, 2015: Improved bias correction techniques for hydrological simulations of climate change. *J. Hydrometeorology*, 16, 2421-2442. doi:10.1175/JHM-D-14-0236.1

Additional Resources

Detailed reports on at-risk populations are also available from Headwaters Economics. Populations at Risk is the companion tool to Neighborhoods at Risk and can be used to generate reports in Excel or PDF format about populations more likely to experience adverse social, health, or economic outcomes due to their race, age, gender, poverty status, or other factors. See:

<https://headwaterseconomics.org/tools/populations-at-risk/>

Further information on understanding local economies can be found at the Economic Profile System (EPS): <https://headwaterseconomics.org/tools/economic-profile-system/about/>

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