NUMBER OF PEOPLE BELOW POVERTY LINE

USACE CLIMATE PREPAREDNESS AND RESILIENCE

Background

- This indicator represents the number of people below the poverty line. People below the poverty line have very limited financial resources available to address hardships from the effects of climate change (e.g. heat waves and other extreme weather events).[1]
- Poverty thresholds are determined annually by the US Census Bureau and are based on the annual amount of cash income required to support families of various sizes.[2]
- Indicator values are projected into future epochs using EPA's Integrated Climate and Land Use Scenarios (ICLUS).[3]
- Higher values suggest higher vulnerability relative to other watersheds.

THIS INDICATOR MEASURES THE NUMBER OF PEOPLE LIVING BELOW THE POVERTY LINE.

Data Sources

Data Source	Description	Spatial Resolution	Temporal Resolution
U.S. Census Bureau – 2012 American Community Survey 5-year Estimates, Poverty Status	Number of people under poverty by Census tract	Census block group	Previously every 10 years; now updated annually*
U.S. Census Bureau – Census block groups	Shapefiles of Census 2010 Census block groups	Census block group	Every 10 years; minor revisions yearly
EPA – ICLUS Version 1.3.2 2013	Population projections by county for years 2005, 2010, 2050, and 2090 from the A1 scenario	US County	2000-2100; data available at 5-year intervals

* At the time these metrics were produced, the Decennial Census was the only source that provided these data for all U.S. Census tracts.

This Indicator Was Used to Assess the Vulnerability of One of USACE's Eight Business Lines

Business Line	Importance Weight (Varies from 1 to 2 for USACE)
Emergency Management	1.4

Calculation

- Within a GIS, join the poverty population data table to the Census block group boundaries.
- For the base epoch, tabulate the number of people living in poverty within each HUC-4 watershed using counts from Census block groups within the watershed. For Census block groups which cross multiple HUC-4 watersheds, poverty populations were allocated proportionally to the intersecting HUC-4 watersheds based on area.
- For future epochs, ICLUS population projections were used to project the number of people living in poverty in 2050 and 2090.
    - For each US county, a population coefficient was calculated for 2050 and 2090. This coefficient projected the ratio of population increase (or decrease) from 2010 to 2050, and 2010 to 2090.
    - The 2008-2012 ACS poverty data (at the Census block group level) was multiplied by the 2050 and 2090 population coefficients.
    - The projected 2050 and 2090 population living in poverty was aggregated to the HUC-4 level, similarly to the base epoch.

[1] Balica, S.F., Douben, N., and N.G. Wright. 2009. Flood Vulnerability Indices at Varying Spatial Scales. Water Science & Technology. 60(10): 2571-2580.
[2] National Poverty Center. 2014. Poverty in the United States FAQ. Available online at: http://www.npc.umich.edu/poverty/
[3] This indicator uses population projections generated by ICLUS, which models population distributions using demographic and land cover data.
[4] Sherman, A. and I. Shapiro. 2005. Essential Facts about the Victims of Hurricane Katrina. Center on Budget and Policy Priorities. Available online at: http://www.cbpp.org/files/9-19-05pov.pdf

HIGH INDICATOR VALUE

Communities with a large number of people below the poverty line will be less resilient. They may incur greater financial losses and fatalities. For example, during Hurricane Katrina, many people had few resources for acquiring food, shelter, transportation, or medical assistance.[4]

HIGH

New Orleans, LA - Courtesy of FEMA