Percentage of Households below the Quality of Life Threshold Income

This EnviroAts map layer estimates the percentage of households with incomes below the adjusted threshold for quality of life in each U.S. Census Block Group across the U.S. This map layer was created from U.S. Census American Community Survey (ACS) 5-year Summary Data for 2008–2012.

Why are data on households below the quality of life income threshold important?

From a city planning perspective, knowing the distribution of income levels, jobs, transit, and housing in a region is prerequisite to planning for equity and quality of life in urban neighborhoods. A common benchmark states that housing and transport should together consume less than 45% of total family income. Research has shown that the proportion of household budgets devoted to housing and transportation tends to be larger proportion of the total at lower income levels. In addition, environmental hazards, job risks, and limited access to health care create higher stress levels and poorer health outcomes in lower income communities.

Money may not buy happiness, but it may be a necessary ingredient to achieve higher living standards. Higher economic wealth can improve access to quality education, health care, and housing. One might argue then that greater economic wealth does influence the mental and physical health of people to some degree. While most research has focused on how income affects psychological well-being, other studies have found that happier individuals are more likely to perform better financially.

A recent study refined these results to distinguish satisfaction with one’s economic position in life (life evaluation) from emotional well-being. Researchers found that life evaluation continued to increase steadily with household income, but emotional well-being stopped increasing once annual income exceeded $75,000 (in 2009 dollars). These results suggested that a $75,000 annual household income may represent a threshold to a positive quality of life and accompanying emotional well-being. At such a threshold, the basic needs of life (food, shelter, health care, leisure time) have been met and some of life’s major stresses reduced.

Of course, an income threshold may be affected by many variables—family size, inflation, personal debt, and regional cost of living. A more refined well-being or happiness threshold might be adjusted by the local cost of living, which is highly variable across the country. For example, when adjusted figures are examined, the $75,000 income equivalent for Mississippi vs. Hawaii is $61,600 vs. $107,000 (in 2015 dollars).

This EnviroAts Quality of Life Threshold Income metric was developed based on existing studies to calculate the percentage of families in each census block group that had an annual household income below the regionally-adjusted threshold of $75,000. The data were adjusted by a county-level cost of living index developed by the Council for Community and Economic Research (C2ER).

How can I use this information?

This map, Threshold Income for Quality of Life, is one of a group of 5 EnviroAts maps that examine a range of income categories surrounding the quality of life threshold income value of $75,000 per year. Quality of life income threshold data can be used in conjunction with other EnviroAts income-related demographic information to explore the density and distribution of various income levels relative to the presence of risk factors and beneficial ecosystem services. This map layer describes patterns of economic wealth, which could facilitate healthy community development and research from several aspects. Federal, state, and local governments can use it to investigate the living standard and evaluate well-being of the community, as well as identify places that might benefit disproportionately from improved access to quality education, health care, and housing. Income data can be overlaid with other EnviroAts national demographics data, such as percent other than non-Hispanic white population. Planners may focus on census block groups or tracts with the
highest number of people who would be served by additional resources. Other pertinent national EnviroAtlas data layers relate to air and water pollution, near road environments, and engagement with the outdoors.

How were the data for this map created?
This map layer was created from U.S. Census American Community Survey (ACS) 5-year Summary Data for 2008–2012. Table B19001, Household Income Categories, was used to extract household income data for each census block group. The table lists 16 income categories in intervals. An IPython scripting tool was used to process the data. The $75,000 threshold was regionally adjusted by the equation:

$$ \text{Adjusted threshold} = \$75,000 \times \text{cost of living index} $$

The data were adjusted by a 2011 county-level cost of living index developed by the Council for Community and Economic Research (C2ER).

The percent of households below the adjusted quality of life threshold income was calculated based on the equation below:

$$ \text{Metric} = \frac{\text{Sum of Households with Income under the Threshold}}{\text{Total Households}} $$

The first equation is the basis for the metric Threshold Income for Quality of Life; the second equation represents the calculation of the metric, Percentage of Households below the Quality of Life Threshold Income.

What are the limitations of these data?
The accuracy of this data layer is linked to the accuracy of the ACS Survey, which could be limited by its multiple data collection agencies, methods, and calculations. Accuracy of ACS data increases with the use of multiple-year summary data (e.g., 2008–2012 summary data) and the use of percentages of household characteristics rather than numbers.

These data are presented at the census block-group scale. A block group is a collection of census blocks, the smallest areas mapped by the U.S. Census Bureau. Population and household data are aggregated by census blocks to preserve the privacy of individuals. It is important to remember that residences are not distributed evenly throughout the area of a block group. For more information on American Community Survey data accuracy and weighting procedures, see the technical documentation section on the ACS website.

How can I access these data?
EnviroAtlas data can be viewed in the interactive map, accessed through web services, or downloaded. Data from the 2010 U.S. Census may be viewed and downloaded from the census website.

Where can I get more information?
A selection of resources on income, quality of life, and well-being is listed below. For additional information on the data creation process, access the metadata for the data layer from the drop-down menu on the interactive map table of contents and click again on metadata at the bottom of the metadata summary page for more details. To ask specific questions about this data layer, please contact the EnviroAtlas Team.

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Selected Publications
1 Litman, T. 2014. Affordable-accessible housing in a dynamic city: Why and how to increase affordable housing development in accessible locations. Victoria Transport Policy Institute, Victoria, B.C.


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