Green Space per Capita

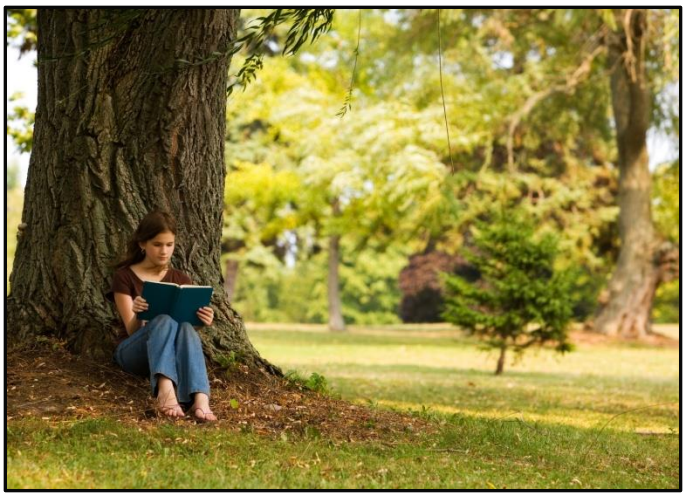
This EnviroAtlas community map illustrates the square meters of total land per person within each census block group that is covered by vegetation, or green space. Green space may include trees, lawns and gardens, crop land, and wetlands.

Why is green space important?

People often recreate in green space, which provides opportunities to socialize with others, participate in physical activity, and engage with nature. These vegetated areas provide cooling effects that help stabilize both micro- and macro-climates. Green spaces also act as sponges that absorb and slowly release water, helping to mitigate natural hazards such as floods.

People prefer to spend time outdoors in green rather than barren areas because they are more aesthetically pleasing and often more hospitable on hot days. Those who live close to green spaces may use them more and increase their time spent in physical activity. This outcome positively affects health by increasing physical fitness, reducing depression and anxiety, and improving cognitive function, among other benefits. People who frequent common green spaces close to their homes can have increased social ties and are more likely to participate in neighborly activities. Green spaces also provide opportunities to engage with nature through window views. Simply viewing nature through a window may lower stress levels, increase cognitive performance, and aid in healing.

Green spaces are generally cooler and more shaded than other areas in the same vicinity and thus can offer a reprieve from extreme summer temperatures. This cooling effect is created by shading and evapotranspiration and often extends beyond the green space itself, increasing with parcel size and the amount of woody vegetation. During heat events, some green spaces can significantly reduce local ambient air temperatures, helping to reduce stress, hospital admissions, and mortality associated with extreme heat.



In addition, green space helps to regulate the flow of water through a watershed by intercepting, absorbing, and slowly releasing water. This "sponge" effect can reduce adverse impacts of stormwater runoff such as stream bank erosion, sediment transport, and the frequency and severity of floods and drought. The lack of significant green space in and around communities can result in more frequent and/or severe flooding, potentially resulting in adverse health effects associated with these events.

More information on the natural benefits provided by green spaces can be found in the Riparian, Tree, Wetland, and Park fact sheets.

How can I use this information?

The map, Green Space per Capita, can be used by citizens, planners, and public health professionals to identify neighborhoods that have a high level of green space overall and those that are underserved and may benefit from enhancement. EnviroAtlas data can provide a baseline for the area of green space per capita in any given block group in the greater community.

When overlaid with these maps, socioeconomic layers within EnviroAtlas can highlight the distribution of green space for disproportionately vulnerable groups. The documented benefits of physical and visual access to green space are particularly important to children and the elderly for health protection and promotion; neighborhood green space may be particularly beneficial to populations with limited outdoor access beyond their residential settings.

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How were the data for this map created?

This map is based on the land cover data derived for each EnviroAtlas community. The land cover data was created from one-meter aerial photography through remote-sensing methods. Land cover considered to be green space includes all land that is vegetated; it excludes barren land, water, and impervious surfaces. This calculation was summarized by 2010 U.S. Census block group boundaries.

What are the limitations of these data?

All of the EnviroAtlas community maps that are based on land cover use remotely-sensed data. Remotely-sensed data in EnviroAtlas have been derived from imagery and have not been verified. These data are estimates and are inherently imperfect. This map is not meant to be used for inferring numbers or types of residents that are at risk for developing specific health conditions. It is not currently known what percent of green space is ideal or what represents the minimum percent required to provide various ecosystem services. For more information on the limitations of the underlying land cover data, please see the metadata associated with the land cover map for each relevant community.

How can I access these data?

EnviroAtlas data can be viewed in the interactive map, accessed through web services, or downloaded. To find the EnviroAtlas 1-meter land cover grids created for each community, enter *land cover community* in the interactive map search box.

Where can I get more information?

There are numerous resources on green space and its potential health benefits; a selection of these resources is listed below. In-depth information on the relationships between urban ecosystems, such as green space, and human health and well-being can be found in EPA's Eco-Health Relationship Browser. For additional information on data creation, access the metadata found in the drop-down menu for each map layer listed in the EnviroAtlas table of contents and click again on metadata at the bottom of the metadata summary page for more details. To ask specific questions about these data, please contact the EnviroAtlas Team.

Acknowledgments

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Selected Publications

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