



## Number of Vegetable Crop Types

This EnviroAtlas national map displays the number of vegetable crop types produced annually within each 12-digit hydrologic unit (HUC). It is based on the United States Department of Agriculture's 2010 Cropland Data Layer (CDL).

### Why are vegetable crop types important?

Number of vegetable crop types is one measure of the agricultural specialization of a region. Some regions are heavily specialized, while others grow a greater variety of crops. Specialization varies at the level of the individual farm as well. Agricultural specialization can make it easier for farmers to increase yields and reduce their costs, though they may increase the risks to these specialized crops from weather and pests. Specialization can also increase the negative impacts of farming by increasing rowcrop cultivation in a particular region or requiring more fertilizer or pesticide inputs.

Vegetable crops are significant because they can have high economic values and contribute to the economy of a region. Vegetables and fruits generate a high percentage of farm crop cash receipts and export value relative to the amount of land they are grown on, all while receiving few subsidies. Average net income from specialized vegetable and fruit farms more than tripled during the previous decade; the net worth of these farms has also grown.<sup>1</sup> Farms that grow fruits and vegetables are more likely to be in good financial standing compared to other types of farms. Most farm households depend on both farm and non-farm income; however, vegetable and fruit growers receive a greater proportion of their income from the farm than do most farmers, and their average household incomes are well above the national average. When compared to the economic values from grain and soybean production, fruit and vegetable farming have shown greater potential to produce more jobs and higher incomes.

The income from farms affects a wide group of stakeholders, including the farmers themselves, farm laborers, lenders, landlords, and the government. In particular, farms can contribute to the economic well-being of rural communities. Non-metropolitan areas tend to have higher poverty rates than metropolitan areas, and many rural counties that have the highest rates of job growth also have a high percentage of agricultural jobs.



Photo: Eric Vance, EPA

Vegetable crops can also play a role in access to fresh produce. There is evidence that eating vegetables and fruits reduces the risk of heart disease and stroke, improves digestive health, protects eyesight, and might help prevent some kinds of cancer.

The number of vegetable crops within a 12-digit HUC may be one measure of variety of produce available from local sources. Locally and regionally grown produce accounts for a small but growing sector of the U.S. agriculture industry. Some consumers prefer to purchase food grown nearby because of perceived freshness and the opportunity to communicate with the producer. Purchasing local also reduces energy consumption and keeps money in the local economy. However, the fruit crop types produced within a HUC are not necessarily indicative of local access to vegetables. Some or most of the produce may be sold in other parts of the U.S. or exported.

Currently, 15.6% of U.S. energy consumption takes place in the food system.<sup>2</sup> Knowing where food is produced is important because the distance between farms and consumers can affect energy use and greenhouse gas emissions associated with producing and supplying that produce. However, distance is only one part of the equation; other factors like farming techniques or the transportation mode used for shipping can have equal or greater impacts on energy consumption and emissions.

## How can I use this information?

The map, Number of Vegetable Crop Types, is one of nine maps that provide information about the agricultural productivity of each 12-digit HUC. Additional EnviroAtlas maps show vegetable, fruit, cotton, and grain yields, the number of types of fruits and grains grown in each HUC, and the hectares of land used for fruit, vegetable, cotton, and grain crops summarized by 12-digit- HUC.

This map can provide information about the degree of agricultural specialization or diversification across the conterminous United States. The data presented in this map could be used to estimate the economic impacts of agriculture in a region or to analyze foodsheds (the potential sources of food for a region). It could also be used in conjunction with other maps in EnviroAtlas. For example, it could be compared with maps showing nitrogen deposition or stream impairments to see how vegetable crop agriculture affects air and water quality.

## How were the data for this map created?

For each 12-digit HUC, the total number of types of vegetable crops was counted using the Crop Data Layer (CDL), a map showing locations and types of crops.

## What are the limitations of these data?

The CDL is produced using satellite imagery, rather than farmer-reported data, and it is an estimation of the truth based on the best available science. Calculations based on these data are therefore also estimations. Periodic updates to

EnviroAtlas will reflect improvements to nationally available data.

The CDL is updated yearly; however, farms also do not necessarily produce the same crops every year; this map might not reflect the current number of vegetable crop types grown in a 12-digit HUC.

## How can I access these data?

EnviroAtlas data can be viewed in the interactive map, accessed through web services, or downloaded. The Cropland Data Layer ([CDL](#)) and CDL [metadata](#) are available at USDA websites.

## Where can I get more information?

There are numerous resources available on vegetable crops and agriculture in general; a selection of these resources is listed below. For additional information on how the data were created, access the [metadata](#) for the data layer from the layer list drop down menu on the interactive map. To ask specific questions about this data layer, please contact the [EnviroAtlas Team](#).

## Acknowledgments

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## Selected Publications

1. Ali, M. and G. Lucier. 2011. [Financial characteristics of vegetable and melon farms](#). Outlook Report.VGS-342-01, U.S. Department of Agriculture, Economic Research Service, Washington, D.C.
  2. Pirog, R., T. Van Pelt, K. Enshayan, and E. Cook. 2001. [Food, fuel, and freeways: An Iowa perspective on how far food travels, fuel usage, and greenhouse gas emission](#). Leopold Center for Sustainable Agriculture, Ames, Iowa.
- Harvard School of Public Health. 2016. [Vegetables and fruits](#). The Nutrition Source, Harvard T.H. Chan School of Public Health. Accessed April 2016.
- Davis, J.C., A. Rupasingha, J. Cromartie, and A. Sanders. 2022. [Rural America at a glance: 2022 edition](#). Economic Information Bulletin No. 246, U.S. Department of Agriculture, Economic Research Service, Washington, D.C.
- O'Donoghue, E., R. Hoppe, D.E. Banker, R. Ebel, K. Fuglie, P. Korb, M. Livingston, C. Nickerson, and C. Sandretto. 2011. [The changing organization of U.S. farming](#). Economic Information Bulletin Number 88, Economic Research Service, U.S. Department of Agriculture, Washington, D.C.
- Peters, C.J., N.L. Bills, J.L. Wilkins, and G.W. Fick. 2009. [Foodshed analysis and its relevance to sustainability](#). *Renewable Agriculture and Food Systems* 24:1–7.
- Swenson, D. 2006. [The economic impacts of increased fruit and vegetable production and consumption in Iowa: Phase II](#). Iowa State University, Leopold Center for Sustainable Agriculture, Ames, Iowa.
- Weber, C.L., and H.S. Matthews. 2008. [Food-miles and the relative climate impacts of food choices in the United States](#). *Environmental Science & Technology* 42:3508–3513.