



## Hectares of Cotton Crops

This EnviroAtlas national map displays the hectares of land used to grow cotton within each 12-digit hydrologic unit (HUC). It is based on the United States Department of Agriculture's 2010 Cropland Data Layer (CDL).

### Why is the area farmed for cotton important?

Hectares of cotton is one measure of agricultural land use within a 12-digit HUC. Information about the location of crops can be useful for understanding land use. For example, much of the rural land that has been converted to urban uses was previously farmland, and farmland that is located near residential areas is often under development pressure. The area of cropland in the U.S. has been decreasing since the mid-twentieth century due to former cropland being converted for grazing, forest land uses, and urban development; but about half of U.S. land area is still used for agriculture. Proximity to urban areas can also affect farmers' decisions about what crops to grow or what production methods to use.

Cotton is a significant crop; it is the most commonly used natural fiber, and it accounts for one third of the world's fiber demand. In addition to providing fiber, cotton seeds are used as animal feed and to produce an edible oil. Total cotton production increased for many decades due to changes in technology and farming practices, but it has begun to decline in the past decade due to changes in the global marketplace and other, relatively more valuable crops replacing cotton. However, the US is still one of the leading cotton producers and the leading cotton exporter, and cotton yields per hectare have been increasing. Since the late 1990s, the use of cotton by US textile mills has been declining, but cotton is increasingly exported to textile mills in other countries.<sup>1</sup>

The total amount of land used for cotton farming had been rising for several decades, but since 2006 cotton acreage has fallen as other crops have become relatively more valuable. The value of cotton can change quickly; because most cotton is now exported, it is sensitive to global economic changes and trade policies. As with many crops, cotton farming has become increasingly specialized and concentrated on larger farms, with the number of small cotton farms decreasing while cotton acreage per farm increases.

Understanding cotton production for a HUC can be useful for analyzing the economic impacts of agriculture in a region.



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-metro areas tend to have higher poverty rates than metro areas, and many rural counties that have the highest rates of job growth also have a high percentage of agricultural jobs.<sup>2</sup> The cotton industry, including textile manufacturing as well as farming, generates around 200,000 jobs per year.<sup>1</sup>

### How can I use this information?

This map, Hectares of Cotton, is one of several maps that provide information about the agricultural productivity of each 12-digit HUC. Additional EnviroAtlas maps show fruit, vegetable, cotton, and grain yields; the number of types of fruits, vegetables, and grains grown; the hectares of land used for fruit, vegetable, and grain crops; and the value of cotton and grain produced.

This map can be used to analyze agricultural land use in the contiguous U.S. The data presented in this map could be used to estimate the economic impacts of agriculture in a region. The data could also be used in conjunction with other maps in the EnviroAtlas. For example, it could be compared with maps showing nitrogen deposition or stream impairments to see how cotton production may affect air and water quality.

## How were the data for this map created?

The land area used to grow cotton within each 12-digit HUC was estimated using the CDL, a map showing locations and types of crops.

For detailed information on the processes through which these data were generated, see the [metadata](#).

## 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.

Farms also do not necessarily produce the same crops every year; this map might not reflect the current hectares of cotton for a 12-digit HUC. For more technical details about the limitations of these data, refer to the metadata. Accuracy information for the CDL can be found on its web site.

## 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](#)) is available from the U.S. Department of Agriculture.

## Where can I get more information?

There are numerous resources available on cotton 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 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](#).

## Acknowledgments

The data for this map were generated by Megan Culler, EPA Student Services Contractor. This fact sheet was created by Megan Culler, EPA Student Services Contractor.

## Selected Publications

1. Meyer, L., S. MacDonald, and J. Kiawu. 2013. [Cotton and wool](#). U.S. Department of Agriculture, Economic Research Service. Accessed September, 2015.
  2. Kusmin, L. 2012. [Rural America at a glance: 2012 edition](#). Economic Brief No. 21 (EB-21). U.S. Department of Agriculture, Economic Research Service, Washington, D.C.
- Dorminey, B. 2012. [Dryland farmers work wonders without water in the U.S. West](#). Environmental Health Sciences, *The Daily Climate*. Accessed May 2016.
- Fuglie, K. O., E. Ball, and J. M. MacDonald. 2007. [Productivity growth in U.S. agriculture](#). Economic brief number 9. Economic Research Service, U.S. Department of Agriculture.
- Nordstrom, K.F., and S. Hotta. 2004. [Wind erosion from cropland in the USA: A review of problems, solutions, and prospects](#). *Geoderma* 121: 157–167.
- 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](#). U.S. Department of Agriculture, Economic Research Service, Washington, D.C.
- Statista. 2016. [Leading 10 U.S. states for cotton production in 2015](#). Accessed May 2016.