2016 PERCENT TCC BY STATE FOR CONUS

2% 45% 89%
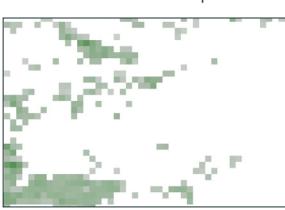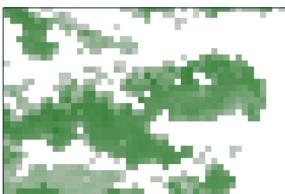
STATES WITH THE MOST PERCENT TCC	STATES WITH THE LEAST PERCENT TCC
1. New Hampshire	48. North Dakota
2. West Virginia	47. Nebraska
3. Maine	46. South Dakota
4. Connecticut	45. Kansas
5. Vermont	44. Nevada

A Central Idaho Wildfire Shows Significant Changes in TCC

PRE-FIRE AERIAL IMAGE SHOWING TREE CANOPY

2011 NLCD TCC Map

POST-FIRE AERIAL IMAGE SHOWING CANOPY LOSS

2016 NLCD TCC Map

About the USDA-FS TCC Project

The U.S. Forest Service (USFS) Geospatial Technology and Applications Center (GTAC) builds and maintains tree canopy cover (TCC) datasets. Scientific support is provided by the Forest Service's Forest Inventory and Analysis program, which is part of USFS Research and Development. Because the TCC datasets are derived for all lands, including federal, state, and private lands, multiple divisions of the USFS contribute funding to the development and production of the TCC datasets and project outputs. These supporting divisions include: National Forest Systems, State and Private Forestry, in addition to USFS Research and Development. The TCC datasets are Landsat-based and available at 30-m resolution for the conterminous United States, coastal Alaska in the southern portion of the state, Hawaii, Puerto Rico, and the U.S. Virgin Islands

Geospatial Technology and Applications Center | GTAC

GTAC is a detached unit of the Washington Office, centrally located in Salt Lake City, Utah. Organizationally, GTAC is aligned under the National Forest System's Engineering, Technology and Geospatial Services staff area and is a component of the Geospatial Management Office (GMO).

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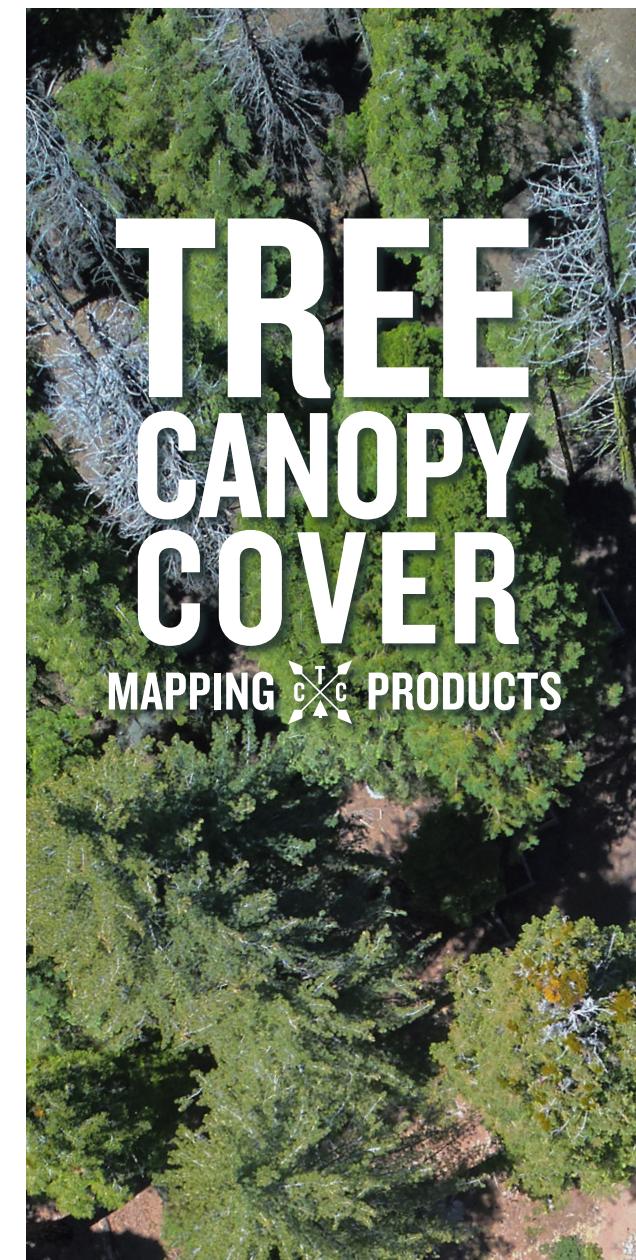
USDA Forest Service
Geospatial Technology and Applications Center
125 South State Street, Suite 7105, Salt Lake City, Utah 84138


TREE CANOPY COVER
MAPPING PRODUCTS
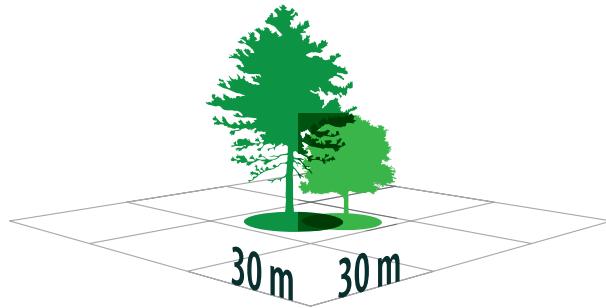
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Mapping Our Future Together

What is Percent Tree Canopy Cover?

Tree canopy cover (TCC) is the layer of tree leaves, needles, branches, and stems that provide tree coverage of the ground, viewed from an aerial perspective. The TCC maps represent canopy cover values, ranging from 0 to 100, for a 30 meter cell.

EXAMPLE
**TCC Value = 65% of 30 meter pixel or cell**

30 m   30 m
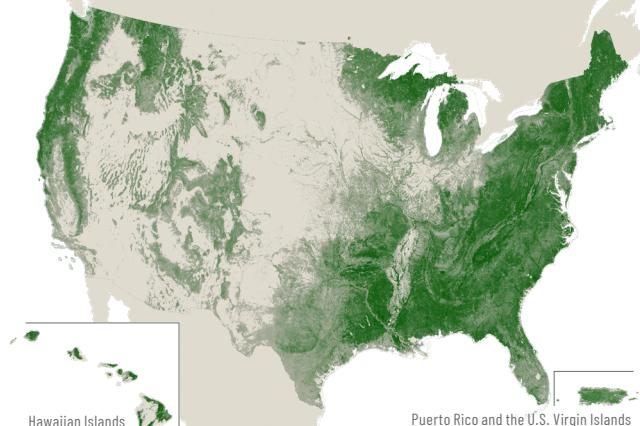
Why is this important?

Vegetation management, including utilization, conservation, restoration, and protection, demands up-to-date information about the current conditions and community distribution. Specifically, tree canopy cover maps provide data for analysis of wildlife habitat, carbon accounting, and fuel loads.

How was Tree Canopy Cover Mapped?

Automated classification techniques were used to produce tree canopy cover estimates on 30-meter cells for the continental United States, coastal Alaska, Hawaiian Islands, Puerto Rico, and the U.S. Virgin Islands for the years 2011 and 2016. A change layer, representing tree canopy cover loss and gain between the years 2011 and 2016, was also produced using the standard error estimates generated during the modeling process.

Hawaiian Islands

Puerto Rico and the U.S. Virgin Islands

Forest Inventory and Analysis (FIA) plots were photo-interpreted for tree canopy cover using high resolution imagery and used to generate over 65,000 reference sites. Approximately 9,000 individual Landsat scenes, their spectral derivatives, harmonic regression coefficients, topographic data, and the reference sites were used as input data in the modeling procedure.

What Data Are Available?

The 2016 product suite was released in 2019 and includes data for the years 2011 and 2016. TCC data are available in three forms which reflect a progression of data refinements.

FS "Analytical" TCC
The raw tree canopy cover predictions and associated standard error values from the model.

FS "Cartographic" TCC
The tree canopy cover values from the analytical versions in which water bodies, non-tree croplands, and pixels with a high standard error are masked as 0% canopy cover.

NLCD TCC
A three-component data stack that includes a change layer and TCC values for each of the nominal years of 2011 and 2016. The NLCD data displays differences between 2011 and 2016 when there is a reasonable confidence of change, otherwise the data is equivalent. (i.e. 2011 TCC + Change = 2016 TCC).

TCC products and more detailed documentation can be found at www.mrlc.gov or scan the QR code.

2016 map product examples:

FS Analytical   FS Cartographic   NLCD TCC