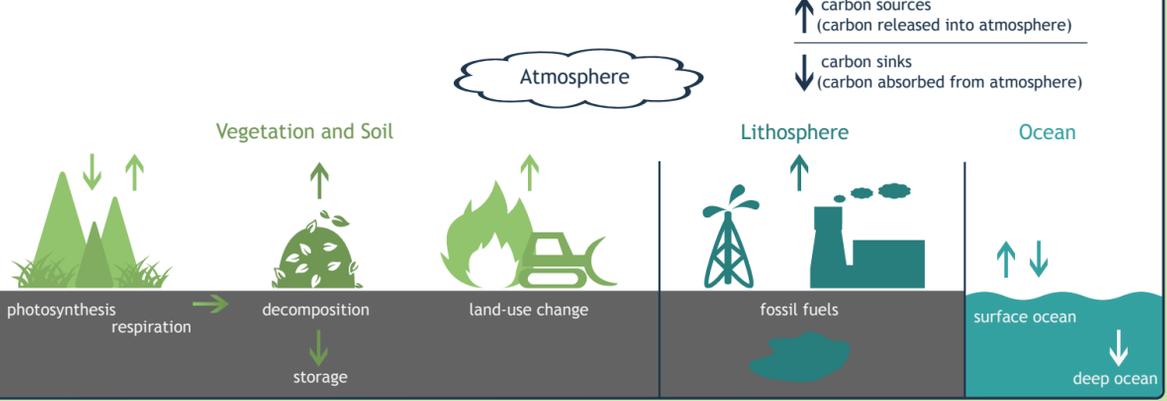


U.S. FORESTS AND CARBON



Carbon Cycle

The movement of carbon through the atmosphere, ocean, vegetation, soil, and lithosphere (Earth's rocky crust and upper mantle) is described by the carbon cycle.



Forests in the United States are an important carbon sink, offsetting nearly 16% of the country's carbon dioxide emissions.

INTERESTED IN LEARNING MORE ABOUT THE GLOBAL CARBON CYCLE?

CHECK OUT THE CCRC'S [CARBON SHORT COURSE VIDEO](#).

Carbon Measurement Scales

a metric ton is 2,204.62 pounds (or 1,000 kilograms)

Global Carbon

1 billion metric tons
a gigaton or petagram

Smaller Scales

1 million metric tons
a megaton or teragram

Carbon Density

TONS per unit space
tons per hectare

Forest Inventory and Analysis

Forest carbon estimates for the United States are based on data from the Forest Inventory Analysis (FIA) Program. The FIA places hexagonal plots across the country and samples 10-20% of these plots each year. Because this is such a large-scale inventory, local carbon data are uncertain, but national carbon data provide a snapshot of forest carbon storage and density across the country.

INTERESTED IN FIA SAMPLING METHODS AND UNCERTAINTY? EXPLORE THE [FIA WEBSITE](#)



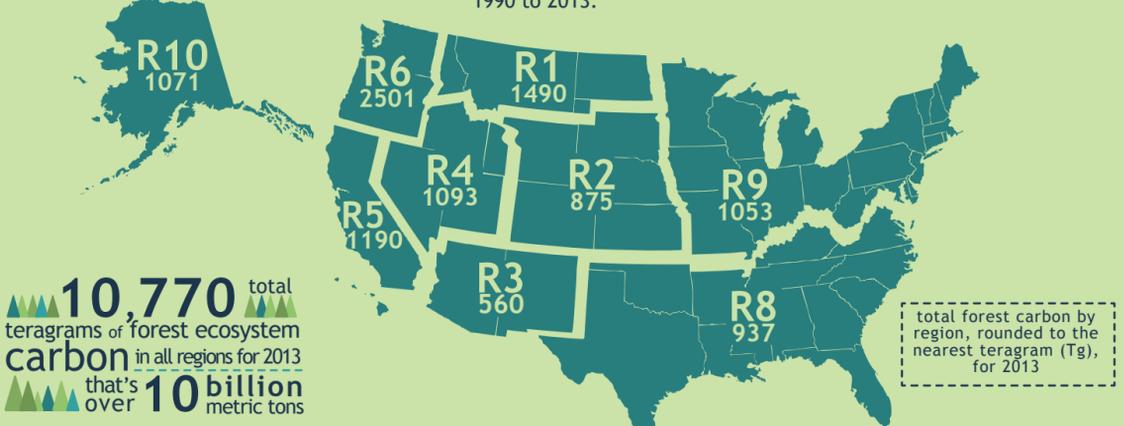
CHECK OUT THE CCRC'S [FIA CARBON SHORT COURSE VIDEO](#).



WANT TO MEASURE CARBON EMISSIONS? TAKE A LOOK AT THE CCRC'S [CLIMATE CHANGE AND CARBON TOOLS](#).

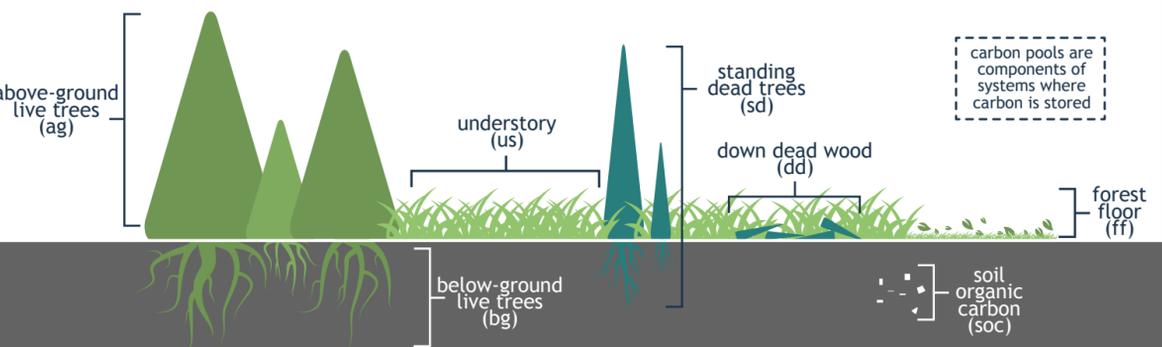
Total Forest Ecosystem Carbon

Forest carbon stocks and trends have been compiled from FIA data for every Forest Service region and national forest from 1990 to 2013.

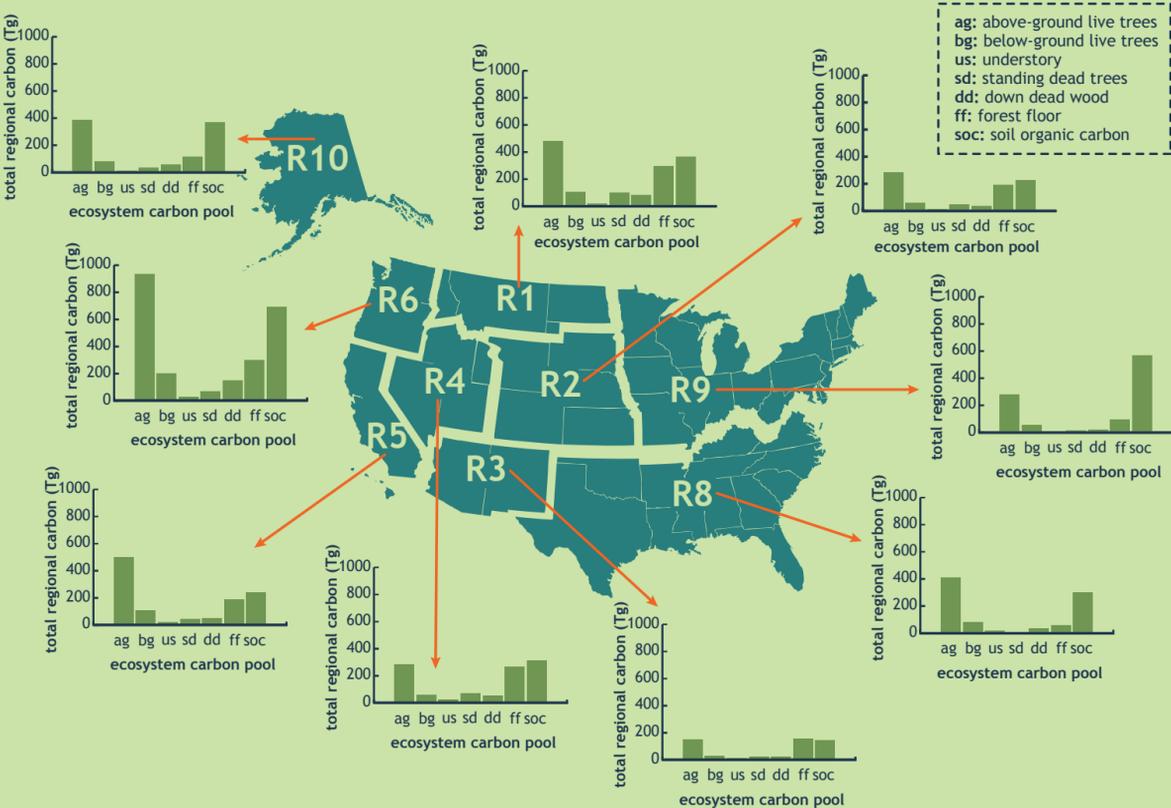


Carbon Pools

Carbon stocks measured by the FIA are contained in seven forest ecosystem carbon pools, and also in harvested wood products (HWP) and landfills. The seven carbon pools are:



Depending on the region, different carbon pools may represent more or less of the forest. Check out the regional graphs of carbon stocks in the seven forest ecosystem carbon pools on national forest lands for 2013.



Long-lived wood products, such as lumber and furniture, transfer ecosystem carbon to the harvested wood products (HWP) pool. Carbon remains stored in HWP and does not contribute to greenhouse gas emissions.

TO LEARN MORE ABOUT SAMPLING CARBON POOLS, CHECK OUT THE [FIA WEBSITE](#).

Carbon Density



Carbon density is an estimate of forest carbon stocks per unit area and varies greatly by region and forest.

Check out the carbon density in Forest Service regions for 2013.

Carbon Sequestration

31 teragrams carbon/year
net sequestration of the National Forest System (forest and harvested wood products)

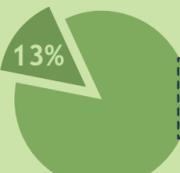
0.37 teragrams carbon in 2013
total greenhouse gas emissions for the Forest Service

National Forest System sequestration is more than **80x** the Forest Service's total annual agency greenhouse gas emissions from operations in 2013 (building energy, fleet, travel, commuting, other)

236 teragrams carbon/year
total net sequestration of forests in the United States

an average vehicle emits **4.7** metric tons carbon/year (and one million metric tons is a teragram)

United States forest sequestration offsets emissions from over **50 million** vehicles from over **10 million** vehicles each year



THE NATIONAL FOREST SYSTEM REPRESENTS 13% OF THE TOTAL NET SEQUESTRATION OF ALL FORESTS IN THE UNITED STATES.

Climate change effects on forests may alter carbon sequestration rates

INTERESTED IN LEARNING MORE ABOUT CARBON SEQUESTRATION AND CLIMATE CHANGE? CHECK OUT [THESE VIDEOS](#) FROM THE CCRC'S [CARBON SHORT COURSE](#).

Forest Carbon Management

Emissions Avoidance



Sequestration



Substitution



INTERESTED IN FOREST CARBON MANAGEMENT?

CHECK OUT THE CCRC'S [CARBON SHORT COURSE VIDEO](#).

FOR MORE INFORMATION ON U.S. FORESTS AND CARBON, CHECK OUT THE FOREST SERVICE CCRC [FOREST AND CARBON TOPIC PAGE](#).

