



How do we know the climate is changing?

Using historical and natural records, scientists have been able to measure the Earth's past climate. People have measured the Earth's temperature and amount of rainfall since the mid-1800s, providing a snapshot of the climate for the last 150 years. For climate measurements prior to this, researchers must obtain measurements from indirect sources, including core samples from ice, sediment, and trees.

[Learn more about why know the climate is changing](#)

How does climate change affect forests and grasslands?

Over the next century, the average global temperature is expected to rise, with variations by season and location. Within the United States, the average temperature is expected to increase between 3 and 10 degrees Fahrenheit. Under current projections, winters are likely to be less cold and snowy while summer high temperatures are likely to continue to rise. Changes in rainfall are more difficult to project, but precipitation is expected to decrease across the Southwest while extreme rainfall episodes are projected to increase in the Northeast, Midwest, and Great Plains regions.

[Learn more about the impacts of climate change](#)

How is the Forest Service adapting to climate change?

To stay healthy and vigorous, our National Forests and Grasslands will need to adapt quickly to the changing climate. The Forest Service is incorporating the best ecological and climate science into its management to ensure that National Forests continue to produce the benefits that the American people enjoy. Healthy forests and grasslands will also help mitigate climate change by removing carbon dioxide from the atmosphere and storing it in plants and soils. In addition to our work on public lands, the Forest Service works with private landowners, non-governmental organizations, and tribal governments to foster climate-informed, sustainable land management.

[Learn more about how the Forest Service is adapting to climate change](#)

To read the online article, click [here](#) or go to:

<https://www.fs.usda.gov/science-technology/climate-change>

What are the Impacts?

Around the world, the effects of climate change continue to be felt. Changes include a global decrease in the size of glaciers, a decrease in snow cover for many regions in the Northern Hemisphere, warmer ocean and surface temperatures, and rising sea levels.

Here in our National Forests and Grasslands, these shifts include:

- More frequent wildfires that burn larger areas
- More severe problems with insects, pests, and diseases threatening trees and crops
- Snowpack decline in mountainous regions due to decreased snowfall and shorter winters
- Plant and animal ranges shifting northward to accommodate warmer temperatures
- Threatened watersheds due to more frequent water shortages, increased pest and fire severity, and shifts in ecosystem health

Faced with these complex and serious threats, the Forest Service continues to work to help our Nation's Forests and Grasslands [adapt to climate change](#).

To effectively address these unprecedented challenges, we need to work together. Learn what you can [do to help fight climate change](#).

To read the online article, click [here](#) or go to:

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