



CHANGE THE FORECAST FOR WILDLIFE

SOLUTIONS TO GLOBAL WARMING

Global Warming and TENNESSEE

From the peaks of the Great Smoky Mountains to the depths of the Cumberland Caverns, Tennessee's diverse forest and river ecosystems face a serious threat from global warming. The Environmental Protection Agency estimates average temperatures in Tennessee could rise about 2-3 degrees Fahrenheit by 2100 if global warming continues unabated. This increase could lead to more extreme weather events like floods and droughts, poorer agricultural harvests and more health problems such as asthma and Lyme disease. Global warming could throw entire ecosystems out of balance, not only harming Tennessee's wildlife habitats but also the people and economies that depend on a healthy environment. For example, the state saw a greatly reduced number of waterfowl in 2001 due to warmer winter temperatures up north that discouraged ducks and geese from flying as far south.



Global warming effects on Tennessee wildlife

Tennessee is home to an incredible diversity of native wildlife species, including 278 birds, 76 mammals, 283 fish, 55 reptiles and 72 amphibians. Rising temperatures in the state will likely change the makeup of entire ecosystems, forcing wildlife to shift their ranges or adapt.

- Global warming could lead to a significant reduction in the abundance and habitat range of trout in the Appalachian region, including a 61 percent decrease in abundance and 90 percent loss of habitat of brook trout in headwater streams.
- The breeding ranges of 34 species of songbirds—including the American redstart and the scarlet tanager—are in danger of disappearing from Tennessee's borders due to global warming.
- Seventy-five percent of the ducks that migrated to Tennessee between 1990-2000 originated from the Prairie Pothole Region, an area in the north-central U.S. and south-central Canada.



Researchers project that global warming could destroy up to 91 percent of these wetlands by 2080, reducing the abundance of breeding ducks by 9-69 percent and seriously affecting Tennessee's waterfowl hunting industry.

What is Global Warming?

When coal, gas and oil are burned, they produce carbon dioxide that builds up in the atmosphere and traps the sun's heat. Much of this greenhouse gas released today remains in the atmosphere after even 100 years, trapping more and more heat.

Since the mid-1800s, emissions of carbon dioxide have skyrocketed, and subsequently global temperatures have risen by about 1 degree Fahrenheit in the last century. Earth has not experienced such a rapid change in temperature in thousands of years.

Unless we reduce the pollution that causes global warming, temperatures could climb between 2-10 degrees Fahrenheit this century. Such a rapid rise in temperature would fundamentally reshape the planet's climate, forever changing the landscape and water resources people and wildlife depend upon.



What's at stake for Tennesseans?

Tennesseans may think they know how to handle the heat, but global warming is something that cannot be ignored. The changes that come are expected to affect everything from air and water quality to tourism and recreation opportunities.

- Warmer, drier conditions not only may cause changes in the makeup of the state's forests, they may also increase the frequency of wildfires, hurting Tennessee's lucrative commercial timber industry.
- More extreme floods and droughts due to global warming could contribute to costly property damage and losses in cash crop production.
- Scientists have found that warmer temperatures caused by global warming can lead to higher concentrations of ground-level ozone pollution, a leading cause of respiratory problems, especially in children and seniors.
- Loss of wildlife and habitat could mean a loss of tourism dollars. In 2001, nearly 2.7 million people spent more than \$1.7 billion on hunting, fishing and wildlife viewing in Tennessee, which in turn supported 35,875 jobs in the state.

“Global warming poses an overriding challenge to our responsibility to protect wildlife for our children's future. We must advance balanced solutions that work for people, wildlife and the economy to overcome this challenge.”—

Larry Schweiger
President, CEO
National Wildlife Federation

THE CLIMATE STEWARDSHIP ACT:

The Climate Stewardship Act is a bipartisan plan of action in Congress that sets achievable goals for reducing global warming pollution in the United States. The bill requires power plants, oil companies and other major sources to collectively reduce emissions of carbon dioxide and other greenhouse gases to what they emitted in the year 2000. The bill also allows businesses to implement their own solutions, using a flexible emissions trading system that has successfully reduced air pollution under the Clean Air Act at a fraction of the anticipated costs. The Act will:

- Create more than 11,500 new energy technology jobs in Tennessee by the year 2020.
- Provide Tennessee with at least \$8.4 million each year in additional wildlife conservation funding to help protect the state's wildlife from the impacts of global warming.
- Provide new income to Tennessee's farmers by rewarding environmentally friendly farming and forestry practices.

Visit www.nwf.org/globalwarming or www.climatenetwork.org/csa for more information.



Warren Gretz (NREL)

Tennessee's solutions to global warming

If Tennessee, North Carolina, Florida and Georgia were considered one country, it would rank seventh in the world for global warming emissions. While serious legislation needs to be enacted to reverse this statistic, action is already being taken by businesses and individuals, who are finding alternative energy solutions not only better for the environment, but also more profitable.

- Tennessee participates in a program called Rebuild America, an organization committed to assisting state and local governments and school systems to implement energy-saving improvements.
- The Tennessee Valley Authority has developed a program called Green Power Switch that enables customers to purchase 150-kilowatt-hour blocks of renewable energy for \$4. The block equals about 12 percent of a typical household's monthly energy use.
- Tennessee has the potential to generate more than a quarter of its energy from renewable sources, the most promising of which is biomass, organic matter such as plant fibers and animal waste that can be converted into electricity or fuel.

Following some simple guidelines, you can cut your global warming pollution, become more energy efficient and give something back to nature.

- **Plant shade trees:** The Department of Energy says planting three trees strategically around your home to block the sun in summer and wind in winter can reduce your annual heating and cooling costs by an average of 40 percent.
- **Act locally:** Contact your mayor and ask that (s)he sign the U.S. Mayors Climate Protection Agreement, committing your city or town to meet or beat the global warming pollution reductions outlined in the Kyoto Protocol.

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