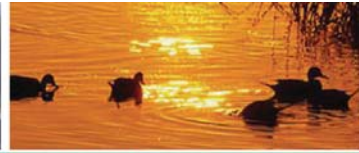




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# CHANGE THE FORECAST FOR WILDLIFE

## SOLUTIONS TO GLOBAL WARMING

## Global Warming and VIRGINIA

Virginia's diverse coastal and inland ecosystems face a serious threat from global warming. By 2100, the Environmental Protection Agency estimates average temperatures in the state could rise about 3-4 degrees Fahrenheit. Precipitation patterns are projected to change, with the likelihood of more extreme weather events such as floods and droughts. Additionally, sea level rise along Virginia's 3,300 miles of coast will have a significant impact on the state's coastal marshes and other critical wildlife habitat.



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### Global warming effects on Virginia wildlife

Virginia is home to an incredible diversity of native wildlife species, including 322 birds, 80 mammals, 202 fish, 60 reptiles and 74 amphibians. Rising temperatures and sea level in the state will likely change the makeup of entire ecosystems, forcing wildlife to shift their ranges or adapt.

- Warmer water temperatures due to global warming could lead to as much as a 61 percent decline in trout in the Appalachian region, as well as a 90 percent loss of habitat for brook trout in headwater streams.
- At the rate temperatures are increasing, the Fraser fir and red spruce forests in Shenandoah National Park could be replaced with southern pines and oaks in the next 30-80 years, greatly affecting the animals and vegetation that call these unique mountain forests home.
- Chesapeake Bay historically has been an important waterfowl wintering ground, but sea level rise within the bay is



changing the makeup of salt marshes, making them less attractive to many ducks and geese. Projections for the region suggest sea level rise will further reduce shallow water waterfowl habitat.

### 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 Virginians?

Those who have lived in Virginia for any amount of time 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 the air we breathe and water we drink to the revenues brought in by tourism.

- Warmer water temperatures due to global warming could encourage the spread of diseases among oysters in the Chesapeake Bay, threatening the state's oyster fishery, which is the lifeblood of some local rural communities.
- The EPA estimates sand replenishment for Virginia's coastline could cost \$200 million-\$1.2 billion in the next century to compensate for a possible 20-inch sea level rise.
- Warmer average temperatures could increase concentrations of ground-level ozone, which is known to aggravate respiratory problems such as asthma, especially in children and seniors.
- Loss of wildlife and habitat could mean a loss of tourism dollars. In 2001, more than 3 million people spent nearly \$1.9 billion on hunting, fishing and wildlife viewing in Virginia, which in turn created 43,014 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 15,500 new energy technology jobs in Virginia by the year 2020.
- Provide Virginia with at least \$9.9 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 Virginia's farmers by rewarding environmentally friendly farming and forestry practices.

Visit [www.nwf.org/globalwarming](http://www.nwf.org/globalwarming) or [www.climatenetwork.org/csa](http://www.climatenetwork.org/csa) for more information.



John Thornton (NREL)

## Virginia's solutions to global warming

The state has a number of incentives to encourage businesses and individuals to become more energy efficient and expand renewable energy sources such as wind and solar power, a key step to reducing harmful carbon pollution.

- Virginia offers property tax exemptions for any solar energy or recycling equipment on residential, commercial or industrial property.
- Virginia's Solar Manufacturing Incentive Grant Program was created in 1995 and offers up to \$4.5 million per year to encourage production of photovoltaic panels in the state.

**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 can reduce your annual heating and cooling costs by an average of 40 percent.
- **Convert to compact fluorescent bulbs:** If every household in America replaced its next burned out light bulb with a compact fluorescent, we would prevent more than 13 billion pounds of carbon dioxide from being emitted.
- **Become a Green Tag subscriber:** Many states now offer options for homeowners to buy electricity from clean, renewable sources such as wind, solar and biomass that produce little or no global warming pollution. Green energy can also be purchased through the National Wildlife Federation by visiting [www.nwf.org/energy](http://www.nwf.org/energy).
- **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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