



CHANGE THE FORECAST FOR WILDLIFE SOLUTIONS TO GLOBAL WARMING

Global Warming and NORTH CAROLINA

North Carolina's diverse coastal and inland ecosystems face a serious threat from global warming. The Environmental Protection Agency estimates average temperatures in the state could rise about 3 degrees Fahrenheit by 2100 if global warming continues unabated. Parts of North Carolina's 3,375 miles of coastal shoreline have already seen a 2-inch rise in sea level over the past century. By 2100, researchers project this level could increase another 12 inches, causing beach erosion, salt-water incursion and damage to coastal development. Inland, North Carolina's Great Smoky Mountains National Park could see drastic changes to forests, as the state's climate becomes more like that of central Florida.



Global warming effects on North Carolina wildlife

North Carolina is home to an incredible diversity of native wildlife species, including 360 birds, 107 mammals, 206 fish, 68 reptiles and 84 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.

- Rising stream temperatures could significantly reduce viable habitat for several species of cold-water fish in North Carolina, including brook trout.
- Just a slight increase in temperature could cause North Carolina's red spruce and Fraser fir populations to be replaced by more heat-tolerant southern pines and oaks, affecting the wildlife that calls those unique mountain forests home.
- The Southeast is home to 70 endangered or threatened species, 27 percent of which live within three miles of the ocean.



Rising sea levels could inundate the habitats of these wildlife species, including the brown pelican, piping plover and loggerhead sea turtle.

- Milder winters in states north of the Carolinas could mean that many of the ducks that migrate to the area during the winter would stay farther north. On top of this, coastal erosion and a loss of marshes due to sea level rise could reduce available waterfowl habitat in North Carolina.

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 North Carolinians?

During the four-year period from 1999-2002, North Carolina's rainfall level matched that of a normal three-year period, creating the worst drought in North Carolina in 100 years. University of North Carolina researchers say 20 percent less rain falls in the summertime than it did a century ago, a trend projected to continue due to global warming. Rain—when it does come—will likely come in more severe downpours that cause flash flooding. These fluctuations are just some of the many issues people could have to deal with in the coming century.

- North Carolina is already losing coastline to rising ocean levels. In 1999, the 132-year-old Cape Hatteras Lighthouse was moved inland 2,900 feet so it wouldn't collapse into the Atlantic. Beach replenishment projects over the next century could cost between \$660 million-\$3.6 billion.
- Research from MIT shows that hurricanes and other major storms have increased in intensity and duration by about 50 percent since the 1970s and are linked to increases in average sea surface temperatures. Moreover, rising sea levels due to global warming will leave beachfront development more vulnerable to storm surges.
- Loss of wildlife and habitat could mean a loss of tourism dollars. In 2001, more than 2.8 million people spent nearly \$2.5 billion on wildlife viewing in North Carolina, which in turn supported 55,500 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.”—

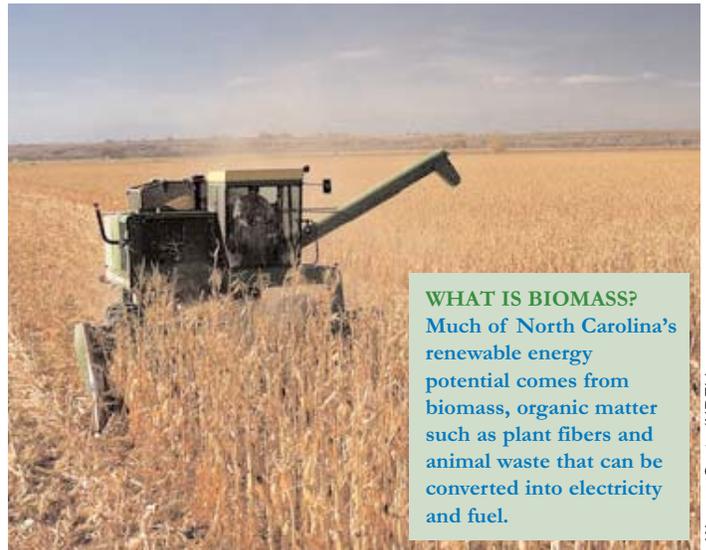
Larry Schweiger
President, CEO
National Wildlife Federation

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 18,000 new energy technology jobs in North Carolina by the year 2020.
- Provide North Carolina with at least \$11.5 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 North Carolina's farmers by rewarding environmentally friendly farming and forestry practices.

For more information, visit:
www.nwf.org/globalwarming.



WHAT IS BIOMASS?
Much of North Carolina's renewable energy potential comes from biomass, organic matter such as plant fibers and animal waste that can be converted into electricity and fuel.

Warren Greiz (NREL)

North Carolina's solutions to global warming

The state has a number of incentive programs for businesses and individuals to become more energy efficient, one of the first steps in addressing global warming.

- The Energy Improvement Loan Program offers low interest loans to people and organizations that want to make energy-efficiency improvements and develop renewable energy systems.
- North Carolina State University's Animal and Poultry Waste Management Center is studying several hog waste management technologies to reduce emissions of methane, a greenhouse gas. Instead of being released directly into the atmosphere, waste methane can be used to generate energy.
- North Carolina has the potential to generate nearly 20 percent of its electricity from renewable sources like wind and biomass.

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.
- **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.

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