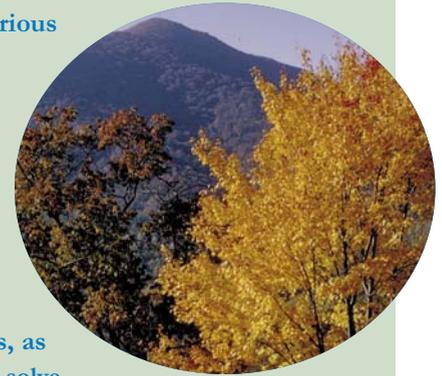




CHANGE THE FORECAST FOR WILDLIFE
SOLUTIONS TO GLOBAL WARMING

Global Warming and NORTH CAROLINA

North Carolina's diverse coastal and inland ecosystems face a serious threat from global warming. The Intergovernmental Panel on Climate Change estimates average temperatures in the state could rise about 5.4 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. We can solve global warming and revitalize our economy by rebuilding America with clean energy.



NPS

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.

Global Warming Pollution

Burning coal, gas and oil produces carbon dioxide, which is a greenhouse gas that warms the planet as it builds up in the atmosphere. Some of the carbon dioxide 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, causing global temperatures to rise by about 1° Fahrenheit in the last century. Earth has not experienced such a rapid change in temperature in thousands of years.

A Global Solution

The U.S. must lead the world by passing global warming legislation at home and working with other nations at the Copenhagen climate summit at the end of 2009 to sign a new climate treaty that keeps further warming below 2° Fahrenheit. With a global solution, we can avoid the worst impacts of global warming.



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 2006, nearly 4.2 million people spent more than \$2.3 billion on wildlife viewing in North Carolina, which in turn supported 49,771 jobs in the state.* (*Jobs are an average of 2001 and 2006 data.*)

“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.”—

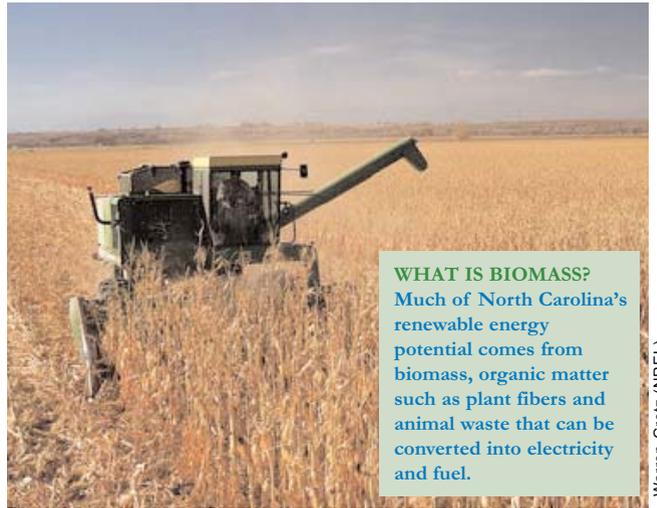
Larry Schweiger
President, CEO
National Wildlife Federation

GLOBAL WARMING NATIONAL POLICY SOLUTION:

A federal legislative solution can drive American ingenuity, create millions of green jobs, and restore America's global leadership on global warming. Legislation should:

- * Include ambitious targets to reduce America's global warming pollution as swiftly and deeply as possible. Scientists say that developed countries as a whole need to reduce their global warming pollution by at least 80% from 1990 levels by 2050 to avoid the worst impacts of global warming.
- * Move America toward a 100% clean electricity future by maximizing energy efficiency, modernizing the electric power grid, expanding power generation from renewable energy resources, and investing in clean transportation infrastructure.
- * Invest in natural resources. Forests, coasts, wetlands, clean air and clean water are already being impacted by global warming. Funding is needed to safeguard the natural resources that are critical to wildlife populations and human health.
- * Lead a worldwide effort to finance clean energy technology, forest conservation, and adaptation to unavoidable impacts of global warming.

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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