



CHANGE THE FORECAST FOR WILDLIFE
SOLUTIONS TO GLOBAL WARMING

Global Warming and MISSISSIPPI

Mississippi's diverse coastal and inland ecosystems face a serious threat from global warming. The Union of Concerned Scientists and the Ecological Society of America estimate that by 2100, average summer temperatures in the state could increase between 3-7 degrees Fahrenheit depending on the extent to which greenhouse gas emissions are curbed. The warmer climate is expected to cause more extreme fluctuations in precipitation across the region, contributing to heavier rainfall and flooding events as well as more severe drought conditions. Hurricane Katrina offers an example of the type of severe storm that scientists expect to become more common because of global warming. Projections also indicate sea level along Mississippi's coast could rise 15 inches in the coming century, contributing to coastal erosion and a loss of important wetland ecosystems, as well as leaving beaches more vulnerable to damage from hurricanes and other storms.



NPS

Global warming effects on Mississippi wildlife

Mississippi is home to an incredible diversity of native wildlife species, including 301 birds, 56 mammals, 209 fish, 82 reptiles and 58 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.

- Global warming could cause the breeding ranges of 17 songbird species, including the American goldfinch and scarlet tanager, to shrink or shift out of Mississippi.
- By 2080, a warmer, drier climate could reduce up to 91 percent of the wetlands in the Prairie Pothole Region, an area in the northern Great Plains on both sides of the U.S./Canadian border

that is one of the most important waterfowl breeding grounds in North America. This could lead to a 9-69 percent decline in the number of ducks breeding in the region, significantly affecting the Mississippi and Central Flyway populations of mallards, gadwall, blue-winged teal and northern pintails.

- Hotter, drier conditions could alter the composition of the state's forest ecosystems, with forested area giving way to grasslands.



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 Mississippians?

Changes from global warming threaten to not only degrade the natural forest and aquatic ecosystems of Mississippi but also the health and economy of the state.

- The coast of Mississippi was hit hard by Hurricane Ivan in 2004 and Hurricane Katrina in 2005, costing millions of dollars in damage and turning many counties into disaster areas. 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. Rising sea levels will leave beachfront development more vulnerable to storm surges and erosion.
- The EPA estimates sea level along the beaches of Pass Christian, Miss., could rise another 15 inches by 2100. Prior to Hurricane Katrina, estimates to protect this and the rest of the state's 360 miles of coastline were figured between \$70-\$140 million.
- Warmer, drier conditions could not only change the makeup of Mississippi's forests, they could increase the frequency of wildfires, hurting the state's lucrative commercial timber industry.
- Loss of wildlife and habitat could mean a loss of tourism dollars. In 2001, more than 1 million people spent nearly \$974 million on hunting, fishing and wildlife viewing in Mississippi, which in turn created nearly 19,000 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

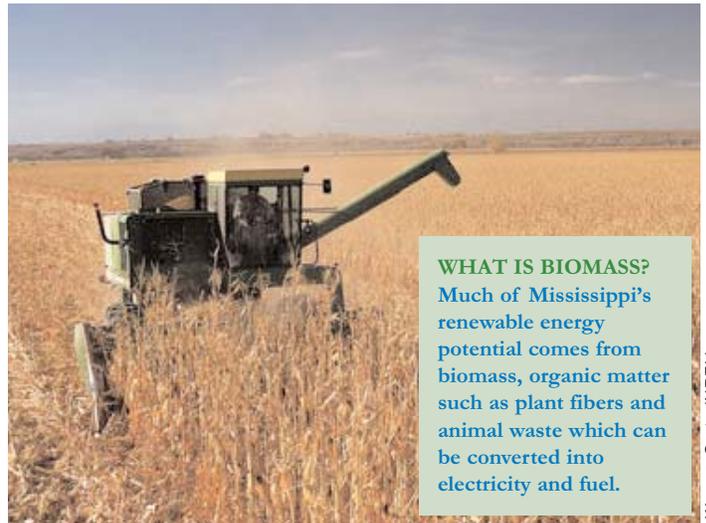
THE CLIMATE STEWARDSHIP ACT:

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 5,000 new energy technology jobs in Mississippi by the year 2020.
- Provide Mississippi with at least \$5.5 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 the state's farmers by rewarding environmentally friendly farming and forestry practices.

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



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

Warren Grez (NREL)

Mississippi's solutions to global warming

As is the case for the nation as a whole, the primary source of Mississippi's global warming pollution is the burning of fossil fuels. However, reducing greenhouse gas emissions and carbon dioxide levels is not hopeless.

- Mississippi offers tax breaks for the use of compressed natural gas and for renewable energy technology investments.
- Programs to store carbon are currently underway by such groups as the PowerTree Carbon Company LLC, which has an initiative sponsored by 25 U.S. power companies to plant trees in critical habitats in the Lower Mississippi River Valley. As the trees grow, they will capture more than 1.6 million tons of carbon dioxide from the atmosphere.
- Mississippi has the potential to meet more than 71 percent of its electricity needs with renewable energy, nearly all from 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 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. That's the same as taking 1.2 million cars off the road for an entire year.
- **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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