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Increased greenhouse gas concentrations are already changing the Earth's climate, and temperatures will rise to much more dangerous levels unless we greatly reduce our emissions.

**G**lobal temperatures rose steadily over the past century with damaging impacts on our environment, health and livelihoods. A recent report from the Intergovernmental Panel on Climate Change (IPCC)<sup>1</sup> estimates average South Carolina temperatures could rise by approximately 5.4 degrees Fahrenheit more by 2100, if global warming continues unabated. In South Carolina, the effects of global warming could pose serious risks to human health, wildlife and ecosystems, and may adversely impact recreational activities, tourism and state revenue.

#### HEALTH RISKS:

According to the IPCC, there is a direct connection between global warming and the health of South Carolinians.<sup>2</sup> As a result of air quality degradation due to global warming, many could face increased heart and respiratory diseases. In some cases, higher temperatures can cause heat stress and heat stroke. Another risk is the potential loss of fresh water as sea levels rise and encroach on clean water reserves.

#### ENVIRONMENTAL PROBLEMS:

South Carolina is particularly vulnerable to global warming impacts because of its 2,876-mile coastline. According to the IPCC, melting glaciers from global warming are likely to cause a rise in sea levels. Higher sea levels will endanger natural habitats such as the Cape Roman National Wildlife Refuge, which could lose as much as 58 percent of its area.<sup>3</sup> Increased storm intensity from global warming will also jeopardize South Carolina's landscape by altering coastal marshes and increasing coastal erosion.

#### WILDLIFE VULNERABILITY:

Many animals will feel the effects of climate change through shifting weather patterns and

altered habitats. Species native to the area, such as the brown pelican and loggerhead sea turtle, face loss of habitat from rising sea levels. According to the IPCC, warmer water temperatures would compromise the habitat of cold water fish species, impacting the distribution and abundance of fish such as the brook trout.<sup>4</sup>

#### ECONOMIC FACTORS:

The effects of global warming on wildlife and the environment would translate into a loss of tourism revenue for South Carolina; in 2006 alone hunting, fishing and wildlife viewing generated \$2.1 billion.<sup>5</sup> Beachfront property developments will also be at risk due to rising sea levels and coastal erosion. Finally, agricultural productivity may also be impacted, as farmers are forced to rely on the increased use of irrigation to offset the effects of lower soil moisture and sea water intrusion.<sup>6</sup>

#### A GLOBAL WARMING SOLUTION

To avoid the worst impacts of global warming, the IPCC concluded that industrialized nations such as the United States need to cut their global warming pollution 80 percent by 2050. Overwhelming scientific evidence of the adverse effects of climate change should compel the U.S to establish mandatory federal policies to steadily reduce greenhouse gas emissions.

For more information, visit [www.pewglobalwarming.org](http://www.pewglobalwarming.org), or to view the full IPCC report, "Climate Change 2007: Impacts, Adaptation and Vulnerability," visit, <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter14.pdf>.

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<sup>1</sup> Intergovernmental Panel on Climate Change (IPCC), Fourth Assessment Report. April, 2007. Working Group I, "Climate Change 2007: The Physical Science Basis." [www.ipcc.ch/ipccreports/ar4-wg1.htm](http://www.ipcc.ch/ipccreports/ar4-wg1.htm)

<sup>2</sup> IPCC Fourth Assessment Report. April, 2007. Working Group II, "Climate Change 2007: Impacts, Adaptation, and Vulnerability." §14.2.5

<sup>3</sup> National Wildlife Federation Fact Sheet 2008. "Global Warming and South Carolina"

<sup>4</sup> IPCC Fourth Assessment Report. April, 2007. Working Group II, "Climate Change 2007: Impacts, Adaptation, and Vulnerability." §14.4.4

<sup>5</sup> National Wildlife Federation Fact Sheet 2008. "Global Warming and South Carolina."

<sup>6</sup> Ibid.