



**CHANGE THE FORECAST FOR WILDLIFE**  
SOLUTIONS TO GLOBAL WARMING

## Global Warming and OHIO

From fishing on Lake Erie to hunting in the state's forests, Ohio offers outdoor enthusiasts wonderful opportunities to experience wildlife in the Great Lakes region. However, on top of ongoing problems associated with urban and industrial development, logging and agriculture, Ohio's rich wildlife heritage faces an added 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 7-9 degrees Fahrenheit depending on the extent to which greenhouse gas emissions are curbed. This could contribute to more extreme weather events such as droughts and floods and bring new challenges to people dependent on industries such as wildlife recreation, agriculture and timber. We can solve global warming and revitalize our economy by rebuilding America with clean energy.



### Global warming effects on Ohio wildlife

Ohio is home to an incredible diversity of native wildlife species, including 280 birds, 66 mammals, 148 fish, 40 reptiles and 39 amphibians. Rising temperatures and drops in lake levels in the state will likely change the makeup of entire ecosystems, forcing wildlife to shift their ranges or adapt.



- Although there is uncertainty in forecasting the impact of global warming on the water levels of the Great Lakes, there is a clear risk as global warming increases evaporation and alters precipitation patterns. In 2002, the Bush Administration published a global warming report that warned: "Lake levels are likely to decline due to increased warm-season evaporation, leading to reduced water supply and degraded water quality."
- Global warming is also expected to contribute to higher water temperatures in the region's lakes and streams. This is likely to cause a significant decline in viable habitat for many cool- and cold-water fish species, including northern pike and rainbow trout. Warmer winter water temperatures could also increase populations of non-native species such as white perch, which could displace native fish species.
- The types of trees dominating Ohio's forests could change from eastern hardwoods to less valuable southern pine and scrub oaks if global warming continues unabated. This change would affect the wildlife adapted to the current ecosystem.

### 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 Ohioans?

Whether it's fishermen on Lake Erie, manufacturers along the Ohio River or urban dwellers in Cleveland and Columbus, Ohio residents will feel the effects of global warming in a number of ways in the coming decades.

- Scientists have found that warmer temperatures caused by global warming can lead to higher concentrations of ground-level ozone pollution, a leading cause of respiratory problems, especially in children and seniors. By mid-century, "good" air quality days could drop from 45 to 27 per summer in Cincinnati. "Red alert" air quality days could increase from 3 to 6 per summer.
- In addition to their adverse effects on aquatic habitats, lower average water levels in Lake Erie would have costly implications for the shipping industry, marina operators and other lake users.
- Loss of wildlife and habitat could mean a loss of tourism dollars. In 2006, more than 5.2 million people spent nearly \$2.9 billion on hunting, fishing and wildlife viewing in Ohio. The industry in turn supported 48,483 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](http://www.nwf.org/globalwarming).



**WHAT IS BIOMASS?**  
Much of Ohio'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 Greiz (NREL)

## Ohio's solutions to global warming

Ohio has developed several programs on the local and state level to begin addressing global warming through renewable and alternative forms of energy.

- Since its passage in 2002, the Ohio Fuel Cell Initiative has provided more than \$38 million to fuel cell projects focused on expanding research, project demonstration and job creation in the state.
- In 2007 the first round of grants were awarded in the Ohio Wind Production and Manufacturing Incentive Program to wind power projects that will begin commercial operation on or before June 30, 2009. Ohio's manufacturing base makes it a potential national leader in wind turbine and component manufacturing.

### The Midwest Governors Association Energy and Climate Stewardship Platform

In late 2007, Ohio was one of nine Midwest states and the Province of Manitoba that signed on to an aggressive energy and climate program that plans major steps forward for the region on renewable energy, energy efficiency, next generation biofuels, and carbon capture and storage. Through their leadership on energy, the states also seek to boost the region's economy by stimulating investment, creating new jobs, and stabilizing energy prices. Ohio is also an observer to the Midwestern Regional Greenhouse Gas Accord. The Accord will establish greenhouse gas reduction targets and a market based cap and trade mechanism to help achieve these targets by late 2008.

**Following some simple guidelines, you can cut your global warming pollution, become more energy efficient and give something back to nature.**

For tips on energy efficiency and reducing your carbon footprint visit [www.nwf.org/energy](http://www.nwf.org/energy).

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